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CONFERENCE PROGRAMME

WEDNESDAY 15th JUNE

13:00 **Registration to the conference**

The Conference will be facilitated by Professor Emerita, Dr. Sirkka Heinonen from Finland Futures Research Centre, University of Turku

14:30 **Opening of the Conference**
Professor Emerita Sirkka Heinonen, Finland Futures Research Centre, University of Turku
Director Juha Kaskinen, Finland Futures Research Centre, University of Turku

15:00 **Keynote Speech and discussion: "Changing Human-Nature interactions: How can nature support and enhance human health and well-being?"**
Research Professor Liisa Tyrväinen, Natural Research Institute Finland (Luke), Finland

15:45 Break and refreshments

16:15 **Keynote Speech and discussion: "Possitopian futures and the role Culture can play"**
Founding Director Bridget McKenzie, Flow Associates & Climate Museum, U.K.

16:55 Short break

17:00 **Chaired Panel Discussion on the topics of the keynote speeches**, with
– Liisa Tyrväinen
– Bridget McKenzie
– Katriina Siivonen, Vice Director, Finland Futures Research Centre
– Markku Wilenius, Professor, Finland Futures Research Centre

17:45 **Closing of the day 1**

18:00 **Conference Get-together**

CONFERENCE PROGRAMME

THURSDAY 16th JUNE

08:30	Morning Coffee
09:30	Session 1 (parallel tracks)
10:45	Break
11:00	Session 2 (parallel tracks)
12:30	Lunch
13:30	Session 3 (parallel tracks)
15:00	Coffee Break
15:30	Keynote Speech and Discussion "Prospects of physical activity – impacts on health" Professor *Petri Tapio*, Finland Futures Research Centre, University of Turku & Professor *Tommi Vasankari*, UKK Institute, Finland
16:10	Short Break
16:15	Keynote Speech and Discussion "Creating healthy liveable and sustainable cities: a global priority for planetary and human health" Professor *Billie Giles-Corti*, RMIT University, Melbourne, Australia
17:00	Closing of the day 2
18:30	Conference Dinner at Restaurant Aitiopaikka, Turku

CONFERENCE PROGRAMME

FRIDAY 17th JUNE

08:30	Morning Coffee
09:00	Session 4 (parallel tracks)
10:30	Break
10:45	Session 5 (parallel tracks)
12:00	Lunch
13:00	Session 6 with Poster Session
13:50	Short Break
14:50	Keynote Speech and Discussion Chief Scientist, Dr. *Soumya Swaminathan*, World Health Organization WHO, Switzerland
16:10	Short Break
16:15	Keynote Speech and Discussion "Creating healthy liveable and sustainable cities: a global priority for planetary and human health" Professor *Billie Giles-Corti*, RMIT University, Melbourne, Australia
14:45	Reflections of planetary futures of health and wellbeing – Closing the Conference
15:15	Networking with coffee and refreshments

SESSION PROGRAMME | THURSDAY 16 JUNE

Track / Session	Track 1 IN-PERSON	Track 2 IN-PERSON	Track 3 HYBRID	Track 4 HYBRID	Track 5 VIRTUAL	Track 6 VIRTUAL	Track 7 VIRTUAL
Room	**Pisara**	**Lumi**	**Virtalähde**	**Aavameri**	**Zoom**	**Zoom**	**Zoom**
09:00–10:45 Session I	Planetary Futures: Philosophy, Methodology and Ethical Consideration	Environmental Awareness Driven by Health and Wellbeing	Socio-Economic Transformation and Planetary and Human Wellbeing	**Special STYLE Project Workshop, Part 1** Towards More Physically Active Lifestyles	Planetary Futures: Philosophy, Methodology and Ethical Consideration	Prospecting Futures of Social Wellbeing and Health	Ecological Regeneration and Wellbeing
11:00–12:30 Session II	Post-Pandemic Transformation and the New World of Work	**Workshop** Future Vision for the Centre of Expertise Health of Fontys UAS	**Workshop** Practical Futures Guidance for Youth Work and Education	**Special STYLE Project Workshop, Part 2** Mental Time Travel Towards More Physically Active Lifestyles **Note:** Division of in-person and virtual participants	**Workshop** Designing Planetary Futures – Futures Design as a Method	**Workshop** Futures Literacy Programs for Smart City Wellbeing: Local and Global Issues	Futures of Lifestyles – Relation to Physical, Mental, Social and Environmental Health
13:30–15:00 Session III	Societal Structures and Individual Agency – The Need for Systemic Change?	**Workshop** PHENOMENA: Co-Designing Planetary Care Through Joy	**Workshop** Hybrid Infinities; Speculative Futures	**Special Millennium Project Session** Anticipatory Governance to Boost Crisis Preparedness – What Policy Actions Needed for Resilient Cities and Human-Friendly AI?	**Workshop** Biodigital Today and Tomorrow: Exploring Innovations, Drivers, and Shifts Towards a Biodigital Era	**Workshop Workshop** Ranting, Cartooning, and Memory to Innovate for the Long-Term	Societal Structures and Individual Agency – the Need for Systematic Change

SESSION PROGRAMME | FRIDAY 17 JUNE

Track / Session	Track 1 IN-PERSON	Track 2 IN-PERSON	Track 3 HYBRID	Track 4 HYBRID	Track 5 VIRTUAL	Track 6 VIRTUAL	Track 7 VIRTUAL
Room	**Pisara**	**Lumi**	**Virtalähde**	**Aavameri**	**Zoom**	**Zoom**	**Zoom**
09:00–10:30 Session IV	Novel Interconnections of Health, Social Justice, Land Use Planning and the Environment	Understanding the Challenges of Futures Uncertainties and Developing Robust Paths	Workshop Planetary Health as a Foundation for Sustainable Future	**Special Session** Imaginative Transformations Upon Sustainable Futures	**Workshop** Radically Rethinking the Future - A Workshop Approach to Overcome "Toxic Assumptions" in Organizations	**Workshop** Roleplay Supporting Equality in Education	Futures Studies Methodology – Case Studies
10:45–12:00 Session V	Future of Mobility and Lifestyle in Relation to Sustainability, Health and Well-being	Multidisciplinary Used Foresight Methodology – Exemplary in the Fields of Renewable Energy Transition, Healthcare and Neurotechnology	**Workshop** "Friction Wheel"	**Special Session** Dutch Future Elections; The Future Belongs to Everyone	**Special Session** Beyond Knowledge: How Technology is Driving an Age of Consciousness	Novel Interconnections of Health, Social Justice, Land Use Planning **Note:** This track will overrun approx. 35min	
13:00–13:50 Session VI			**Poster session**	**Special Session** Imagining After Capitalism			

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SESSION I at 9:00–10:45

Planetary Futures: Philosophy, Methodology and Ethical Consideration

Time: Thursday 16 June at 9:00-10:45
Room: Pisara
Chair: Juha Kaskinen

Scenarios for Transition Management: Micro-Level Analysis of an Attempt to Include Ethics in a Scenario Model

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[b] University of Lapland & University of Helsinki, Finland

Tackling sustainability issues in socio-technical systems calls for a multi-stakeholder coordinated change and systemic solutions. Transition management (TM) has been proposed as a governance approach for promoting sustainability transitions (Rotmans et al. 2001; Kemp et al. 2007; Rotmans&Loorbach 2009). Important elements of transition management are long-term thinking, systemic approaches, focus on learning and open-endedness in terms of means and solutions. Thus, scenarios have been proposed to be a well-functioning tool for TM due to their future-oriented, participatory, and systemic characteristics (Wiek et al. 2006).

Scenario creation is often conceptualized as a multiphase process, where scenarios emerge through the application of methodological approaches varying from collective intuitive imagination to mathematical formality. One theme that previous studies have overlooked is the high degree of social determination and flexibility of knowledge creation, which is inherent in scenario processes. These characteristics may conceal some ethical aspects, which are critical for produced knowledge and its use in the context of TM. In this paper, we examine a scenario process applying a formal morphological analysis method (Richey 2011), in a multidisciplinary research project aiming at knowledge creation for TM. We use the process as an illustrative case for arguing the challenges of including ethics in future-oriented knowledge creation for transformative systemic changes.

Through micro-level process-oriented analysis (Langley 1999), we show how ethically important factor was included in a scenario model in the beginning of scenario process in an open project workshop, but later in the process it was excluded from the model. Analysis shows that this happened in three phases: 1) diminishing the importance of ethical concept due to inadequate understanding of the concept, 2) attachment of new meanings and categorization, and 3) invoking methodological rules to erase the topic. The appearance and disappearance of an ethically important factor in scenario-making was an outcome of the combined effect of social and methodological aspects, including communication and meaning making in the social process of scenario construction, and methodological limitations in combining ethics and formal scenario method.

The micro-level analysis of a scenario process provides understanding on the social foundations of scenario method and shows what kind of challenges may occur in formal scenario studies trying to involve ethical thinking. Through the analysis we can propose improved approaches to include ethics in future-oriented knowledge creation. We aim to contribute to knowledge creation approaches for transition management, which are more inclusive in regard of ethical aspects.

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Intertwining Futures Literacy and Strategic Foresight to Proactively Address the Triple Planetary Crises

Raleigh, Nicolas B.[a] – Jason Jabour[b] – Anna Sacio-Szymańska[d] – Martyn Richards[a] – Irianna Lianaki-Dedouli[c] – Sandor Frigyik[b] – Alexandre Caldas[b] – Andrea Hinwood[b].
[a] Finland Futures Research Centre, University of Turku, Finland
[b] United Nations Environment Program, Kenya
[c] UNESCO, Paris
[d] 4CF, Poland

International organizations have multiple stakeholders and high societal expectations for delivery of key multilateral functions. A proactive stance toward key issues is desired by organizational leadership and staff and promises to be more effective in achieving strategic goals. This is especially true for programs and agencies in the UN System responsible for enabling nation states and other actors to address key environmental challenges and maintain habitability of Earth for all species. This paper presents work-in-progress at the United Nations Environment Programme (UNEP) to enhance proactivity via futures literacy and strategic foresight.
UNEP has launched intertwined efforts to simultaneously cultivate organizational futures literacy (capabilities) and integrate strategic foresight (processes and tools) into planning and program implementation. This explicitly intertwined approach, to our current understanding, is novel. Using a participatory action research and interventionist, experience-driven approach to building capacity and producing knowledge, the work has taken the form of a series of co-created experiences for various internal assemblages. These experiences have included a cross-organizational futures literacy lab, cross-organizational foresight workshop, and a foresight workshop for the Senior Management Team. Relevance is supported by orienting these experiences toward addressing the triple planetary crisis framing of the current UNEP Medium-Term Strategy: climate change, biodiversity loss, and pollution/waste. Along the way, the outcomes of these experiences have been synthesized and shared as recommendations aimed at furthering foresight and futures literacy development, producing an emergent community of practice. Our initial experimentation indicates that an intertwined capabilities approach and foresight process trials across an organization is synergetic: when people engage with developing their capability of futures literacy, they better recognize the relevance and purposes of any given foresight process or tool; and, when people engage in foresight processes, they gain foresight experiences which can drive interest in developing futures literacy.

This work-in-progress contributes a high-potential pathway for better utilizing strategic foresight in the UN System (and elsewhere). The Secretary-General's 'Our Common Agenda' acknowledges the important role of futures in the pursuit of humanity's aspirations as expressed by the 2030 Agenda for Sustainable Development. It calls for all UN organizations and member states to engage in foresight and strengthen capabilities to use-the-future, and many are responding to the request. The intertwined approach we are co-creating could provide a useful model for the UN system, helping agencies and nation states to proactively cooperate toward the collective benefit and wellbeing of future people and other life on Earth.

Keywords: *Climate Change, Biodiversity Loss, Pollution, Futures Literacy, Strategic Foresight, Proactivity*

In Search of Sustainability Driven Strategic Foresight. A Systematic Review of Approaches to Sustainability in Corporate Foresight Literature

Kurki, Sofi – Juuli Huuhanmäki – Pauli Komonen
VTT Technical Research Centre of Finland, Finland

Futures studies can be argued to be an inherently normative field of inquiry, driven by the aim to create betterment through a systematic exploration of alternative futures. While sustainable development is a central focus area in

futures studies, the issue is less straight-forward for foresight as its subdomain. Although it has been stated that the aim of foresight is ultimately sustainability in a changing world, elsewhere it has been claimed that foresight methodology has not sufficiently been used for addressing sustainability goals.
In this paper we investigate how sustainability appears as a theme in corporate or strategic foresight literature. We present the results of a systematic literature survey tracking instances of sustainability in articles on corporate foresight methods, processes and approaches. We look at the prevalence of articles that explicitly mention sustainability as a context or motivation for corporate foresighting, and analyse how sustainability is framed in articles addressing corporate foresight applications.

Our findings suggest that sustainability is not a mainstream framing for corporate foresight. Of a sample of 337 articles on corporate or strategic foresight methods, approaches or frameworks we found 29 articles mentioning terms sustainable or sustainability in the title, abstract, or key words. Furthermore, in the majority of these 29 articles, sustainability is viewed as economic sustainability, through a focus on business interests, disruptions, and risk management. Only 15 discuss foresight as a tool for enhancing corporate responses to reaching environmental (5) or social sustainability (9). In the articles on social sustainability the emphasis is predominantly on new knowledge production, learning and competence development.

With this paper we hope to instigate critical discussion on the goals of corporate foresight, and its relation to the tradition of futures studies. Is corporate foresight merely a methodological tool-set for strategic decision-making, or should it encourage more profound assessments of corporate agency in shaping its environment? As sustainability rises on societal agendas, novel expectations are directed towards companies. Policy-makers, consumers and other stakeholders are expecting corporations to assume a more proactive role, and hoping to hear their view on developing sustainable practices. Here, corporate foresight could serve as a tool for a more engaged relationship between companies and their environments, by moving closer to the foundational aims of futures studies.

Keywords: *Corporate Foresight, Sustainability, Methodology, Literature Review*

Designing the Future Cosmetics; Lessons Learned A Case Study of a Values-Based Start-Up Challenging the Industry

Fors, Piritta
Luonkos Finland Oy Ltd, Finland

Cosmetics are categorized as materials applied to the human body for cleansing, beautifying, promoting attractiveness, or altering the appearance without affecting the body's structure or functions. Products can be, for example, facial cleansers, moisturizers, perfumes, nail polish, makeup and hair products.

The cosmetics industry causes plenty of harm; plastic pollution, micro-beads in the environment, ocean chemical pollution, air pollution, animal cruelty, deforestation and child labor just to mention a few. Cosmetics' packaging is often non-recyclable. Some of the ingredients are endocrine-disrupting chemicals and can cause problems to skin.

Cosmetics products' usual ingredient are water, preservatives and synthetic chemicals. Over-consumption of cosmetics is a common standard in the Western cultures. Marketing communication of companies repeat the message of necessity of using multiple different products for even basic skincare

Four years ago, a Finnish values based start-up developed products to make the change in the industry. Their mission is to help minimizing the use of cosmetics. They created effective multi-functional products with no water, no preservatives and no plastics. Best for the skin, least harm to the nature. The vision is in the future and the focus is to meet all the needs and wants of the future consumer already now. Packaging is plastic-free and has bio-based barrier and is of recyclable cardboard.

The future trends have been carefully studied to develop the company culture and business, it's products and marketing. Only natural effective ingredients are used. The newest ingredients such as circular economy natural Betaine and forest microbe extract, have been are tested and chosen.

Based on research data, forest microbes can help fight biodiversity hypothesis effects and to prevent getting type 1 diabetes, allergies, asthma and other immune-mediated diseases. Biodiversity hypothesis means, that microbial change due to biodiversity loss is associated with an increase in immune-mediated diseases. New natural cosmetics

products are designed to have positive health effects even if the legislation does not recognize health-benefiting cosmetics products yet.

The case company is values based and committed to high ecological and ethical standards. Products are produced in Finland. Focus of the paper are the lessons learned from 4 years from building future oriented values based start-up with pioneering products. Lesson learned are such as be clear in your vision but accept that there are various ways to get there. If you are pioneering and building a better future in innovative way, old "truths" may not apply. Find you own way.

Keywords: *Values Based Start-Up, Ecological, Natural Cosmetics*

Linkages between the Ability to Detect Weak Signals and Mindfulness Characteristics

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The purpose of this paper is to explore the linkage between the ability to detect weak signals and mindfulness characteristics. The research is inspired by the potential relationship between deep self-reflection and the ability to detect weak signals - early signs of change. Mindfulness is considered as a useful practice for self-reflection from contemplating the body, feelings and emotions, thoughts with the attitude of non-judgment and non-reactivity. Meanwhile, multifaceted human aspects to form feelings and thoughts on signals are one challenge in the weak signal detection process. Accordingly, we put forward the hypothesis that mindfulness is linked with the ability to detect weak signals.

Two research questions guided the experiment: (1) What are the factors that can elevate abilities to detect weak signals? and (2) How does mindfulness practice link with these abilities? We used theoretical analysis of similarities of both domains found in the literature and a survey. According to the review, potential connections are outlined in Fig. 1.

Empirical data were collected from 116 mindfulness practitioners' responses via the online questionnaire. Exploratory factor analysis, correlation, subsets regression, Kruskal-Wallis test and Mann-Whitney test with Bonferroni correction were used to analyse the data.

Results show the association between mindfulness characteristics and sensitivity, creativity, and courage – three abilities to detect weak signals. Awareness of inner experience without reactivity seems to facilitate interpersonal awareness and self-awareness of sensitivity, as well as nurture intrinsic motivation in creativity. Furthermore, non-judgmental and non-reactive awareness seems to foster a sense of inner security in courage. Results suggest the important roles of practice duration, frequency, and education level for outcomes of mindfulness practice. The longer and more regular mindfulness is practiced, the more maturely abilities of observing and of non-reactivity increase. We conclude that the ability to detect weak signals seems not to be only a personal trait but a trainable ability that can be enhanced, for example, by mindfulness exercises. The knowledge gained through this study can contribute to individual-level training and practices of signal detection in horizon scanning.

Keywords*: Weak signals, Mindfulness, Survey*

Environmental Awareness Driven by Health and Wellbeing

Time: Thursday 16 June at 9:00-10:45
Room: Lumi
Chair: Leena Jokinen

Part of Nature or Not? Health Care Professionals' Understanding of Human-Nature Connectedness

Helenius, Leena
University of Helsinki, Finland

The well-being of us humans is tightly tied to resilient and diverse ecosystems. Our current use of nature is threatening and undermining not only biodiversity but also human health everywhere on the planet as our habitat becomes ecologically less diverse, increasingly built and leaving little or no space to other nature than ourselves.

Well-being and health are – or should be – in the interest of all sectors of society but it is generated particularly in the health care sector. Health care has links to the environmental hygiene sector but the links to environmental and sustainability sciences have been weak until the last few years. Currently, the health care sector has woken up to the threat of global climate change but its role in pursuing a more sustainable society is still small.

In the past two decades the human-nature connectedness (HNC) literature has raised a notion that the way people see and experience connection to nature is linked to pro-environmental behaviour and human well-being. Human-nature connectedness is seen as a leverage point in striving for future sustainable societies. Recent meta-analysis found that individuals who have higher HNC are more knowledgeable of nature, spend more time outdoors and are happier and healthier than people with low HNC (Barragan-Jason et al. 2021). However, there is little, or no research on how health care professionals see the human-nature connectedness, this meaning to what extent health care professionals see humans as part of nature or include the natural world in the self.

As a part of my PhD research, I take this question under study and aim to find out to what extent general practitioners see humans as part of nature, how they articulate different aspects of HNC, how they see human health (physical, mental, social, and spiritual) as connected to nature, what kind of contradictions and inconsistencies in their understanding may exist and how do they mitigate these. One target is to find out how they reason about contradictory arguments where humans are or are not seen as a part of nature.

In my paper presentation I will present key findings and some preliminary results from the interviews I conduct with general practitioners. This study is part of HUMUS – Health care for a Sustainable Future project's ambitious aim to build a framework for comprehensive and sustainable well-being that embraces the fact that humans are part of nature, not separate from it.

Keywords: *Human-Nature Connectedness, Health Care, Sustainable Well-Being, General Practitioners, Interviews*

Sustainable Thinking

Kroeker, Sandra
Brock University, Canada

Sustainable Thinking and Being

This presentation will discuss Organismic, Mechanistic, and Contextualist worldviews to propose a way to heal humans' relationship with the plant. This is a transdisciplinary inquiry where quantum physics, Indigenous knowledges, philosophy, and ecotherapy lenses will examine the question of how we can shift the dominant ideology of the world to stewardship with the planet, rather than as conquerors of it. It is proposed that shifting our understandings and ideologies of the world to be more in-line with both quantum physics and Indigenous understandings of reality, we may see changes in how we treat the Earth, others, and the environment.

Psychological wellbeing is influenced by climate change and there is substantial evidence showing that weather events and natural disasters impact mental health (Clayton, 2020 & Clayton & Karazsia, 2020; Masten, 2014). Eco-anxiety, also referred to as climate anxiety is defined as, "anxiety or worry felt about climate change and its effects" (Clayton, 2020, p.3), or "dread associated with negative environmental information [which includes] uncertainty

about the future environment, grief about the loss of valued places and things, and concern about possible future harm to one's children" (p. 2).

The effects of climate anxiety are prevalent around the world in countries such as the United States, Canada, Australia, Greenland, and Tuvalu with reports of "increased levels of PTSD, depression, anxiety, substance abuse, and even domestic violence" (Clayton, 2020, p. 1). The groups most affected eco-anxiety are Indigenous peoples, the elderly, and children (Clayton, 2020). Regarding children and youth, eco-anxiety has become a growing concern because it is creating, "existential dread about what lies ahead…for millennial[s]" (Chisholm, 2019, p. A1). According to Clayton (2020) "[t]here has been relatively little acknowledgement of the mental health implications of climate change" (p. 5). Therefore, one aim of this project is to create awareness about the seriousness of eco-anxiety.

This project will explore eco-anxiety as experienced in people including children and Indigenous peoples. Suggestions for how to mitigate climate change anxiety will also be discussed. I will first briefly cover some protective factors such as activism, eco-therapy, and culture. I will then turn to exploring Indigenous experiences and understandings of our relationship with the Earth. Finally, I will discuss suggestions on how to paradigm shift to a healthier worldview by analyzing the difference between mechanistic and organismic thinking.

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Keywords: *Paradigm Shift, Ecofeminism, Ecotherapy, Worldviews, Mechanistic Worldview, Organismic Worldview, Contextualism, Indigenous Knowledges, Quantum Physics In Social Sciences*

Wellbeing, home and dementia – A vision for a humane future for persons receiving care

Arpiainen, Laura
Aalto University, Finland

It has long been agreed that current care environments for persons with Alzheimers, Dementia and Memory Decline are not person-centered. The criteria for design of these environments is based on excessive dominance of safety, 'standards of care' (whatever they may be in each country) and economic sustainability or profit.

It has unfortunately taken a global pandemic to expose some of the worst dangers of this design mentality, with excessive mortality rates and inhuman shutdowns that have virtually created prisons out of care facilities.
But it doesn't have to be this way. This presentation will draw on both literature and case studies to introduce a more humane and person-centered way of design. Collective living and dementia farms where residents form communities and perform daily tasks even with advanced dementia have proven to lengthen life expectancy of even persons with advanced memory decline.

Keywords: *Wellbeing, Home, Care Environments, Medical Architecture, Human Centered Care, Green Care*

Multispecies Sustainability in the Classroom: Teaching Transitions to Non-Anthropocentric Futures

Gaziulusoy, İdil – Eeva Berglund
NODUS Sustainable Design Research Group, Aalto University, Finland

Transitioning to sustainable futures requires structural changes in society beyond the ambition of current policy measures. Biodiversity crisis calls for fundamental changes in the Western value system attributing only extrinsic value to ecosystems and natural elements. Sustainability science has been studying human-nature relationships for a while and the importance of nature and ecosystemic health for human wellbeing is well established. However, such research has not been able to transform the value system that has created the mindsets, structures and patterns of the predominant utilitarian perspective.

Non-anthropocentric thought has found traction in social sciences and humanities for more than two decades. For

example, law has been studying (intrinsic) rights of nature, philosophy has been developing biocentric environmental-ethical frameworks, and care ethics has been placed in the centre of posthumanist thought. Nevertheless, the penetration of these bodies of thought has been slow in action-orienting sustainability research. Recently, the concept of multispecies sustainability has been introduced into sustainability science by a group of scholars from diverse backgrounds.

Sustainability Transitions and Futures is a mandatory course of the Creative Sustainability masters program of Aalto University delivered jointly by the co-authors. The course aims to provide the students with a basic understanding of how sustainability transitions projects unfold in practice and every year there is a transition theme guiding the practical project. In the previous years we have focused on low-carbon urban transitions and collaborated with City of Helsinki and City of Lohja. In 2021-2022 academic year, our theme of choice was multispecies sustainability. Through a curated selection of guest lectures from fields including law, philosophy, urban ecology and planning we have provided the students with the necessary theoretical and critical lenses in this 6-week long fast-paced course. The practical component focused on Aalto University's campus both because of familiarity and in order not to be restricted by expectations of external collaborators. The students in groups undertook field research, reimagined Aalto campus in year 2050, the year in which the campus received the prestigious Multispecies Campus of the Year award jointly given by IPBES and UNICEF. They developed pathways to demonstrate how their visions can become anchors for redirecting campus development plans and identified the initial experiments that can be catalyst for learning and action towards multispecies campus futures.
In this paper we explain our experience with and reflections on this pedagogical experiment and provide pointers for systems change related courses to engage with post/non-anthropocentric future-making.

Keywords: *Multispecies Sustainability, Design Futures, Sustainability Transitions, Transition Design*

(HYBRID) Socio-Economic Transformation and Planetary and Human Wellbeing

Time: Thursday 16 June at 9:00-10:45
Room: Virtalähde
Chair: Ville Lauttamäki

Can the Wellbeing Economy Help Us Achieve a Good Life for All Within Planetary Limits?

Abrams, Michael[a] – Monica Scigliano[b]
[a] McDaniel College and Community College of Vermont, USA
[b] Population Matters, UK

This paper builds on earlier work by Kate Raworth, Dan O'Neill, and Jason Hickel to investigate the degree to which the transition to a wellbeing economy can improve the prospects for achieving "a good life for all within planetary boundaries." We update their data by calculating a range of healthy life expectancy and for per capita limits for ecological footprint, material footprint and CO2 emissions, according to the low, medium, and high UN population projections for 2050. We compare this data to current consumption levels, as well as the consumption levels necessary to attain high levels of wellbeing. This involves a philosophical and empirical review of what wellbeing entails, comparing approaches such as the Sustainable Development Goals, Manfred Max-Neef's Matrix of Human Needs and Amartya Sen's concept of "development as freedom." In particular, this paper focuses on the role of universal provision services in a wellbeing economy–especially, universal health care–given their importance for both wellbeing and sustainability. We also contrast the case studies of the United States and Costa Rica to demonstrate the low material throughput required to meet social needs such as healthcare and education. Finally, we conclude with an exploration of what our research means for the cultural changes necessary to bring about a future in which all people are able to flourish on a stable planet.

Keywords: *Wellbeing Economy, Consumption, Universal Healthcare, Population, Sustainability Indicators*

Our Preferred Future: A Wellbeing Economy

Tzatzanis-Stepanovic, Elli B.
Austrian Research Promotion Agency, Austria

´If you think the economy is more important than the environment, try holding your breath while counting your money.´ Guy McPherson (US scientist)

Five human made megatrends will have major impacts on our lives in the future, the climate crisis, socio-economic inequalities, urbanization, ageing population and digitalisation (UN Report, 2020).
The climate crisis goes hand in hand with a massive loss of biodiversity. Increasing socio-economic inequalities are the result of speculations, unfair trading and exploitation of workforce caused by profit-driven economies.Triggering reckless consumerism and supported by globalisation, the results are irreversible pollution of land and sea, degradation of nature, and massive pressure on water, energy and food security. All this for the sake of endless growth on a finite planet!

There are inevitable interlinkages between climate change, biodiversity loss, environmental degradation and public health and wellbeing. We need to support sustainable economies backed by just measures and fair policies, purpose-driven companies, and shared value between employers and employees. We need sustainable finance in long-term oriented businesses and investments in circular economy, nature-based solutions and restorative technologies (Reimagining capitalism in a world on fire, Rebecca Henderson, 2020).
Our prosperity and success cannot be measured by wealth on a dying planet. It is happiness and wellbeing around healthy nature, for us and our next generations (WEAll, Wellbeing Economy Alliance, Wellbeing Economy Policy Design Guide, www.wellbeingeconomy.org).

WEAll is a collaboration of organisations, alliances, movements and individuals working towards a wellbeing economy, delivering human and ecological wellbeing. A Wellbeing Economy is based on

- Dignity, so everyone has enough to live in comfort, safety and happiness,
- Nature, a restored and safe natural world for all life,
- Connection, a sense of belonging and institutions that serve the common good,
- Fairness and justice in all its dimension is at the heart of economic systems, and the gap between the richest and poorest is greatly reduced, and
- Participation, so citizens are actively engaged in their communities and locally rooted economies.

The government of Ecuador developed its first Wellbeing Vision and integrated it into the Ecuadorian constitution in 2008. (WEAll, Wellbeing Economy Policy Design Guide).

Their Wellbeing Vision from 2018 was: 'We want a society in which people can satisfy their needs, live and die worthily with social equality and justice, free of violence or discrimination and achieving individual, social and natural harmony'.

***Keywords**: Wellbeing Economy Alliance (WEAll), Climate Crisis, Socio-Economic Inequalities*

Building Anticipatory Practices. An Evolution Perspective to Support Social Inclusion in the Current and Future Labour Market

Ketonen-Oksi, Sanna
Laurea UAS, Finland

In today´s world, the ability to continuously learn, unlearn and relearn has become both a significant indicator of individual success and a resource for business renewal. Most importantly, the impacts of the thus achieved resilience are not limited to some local innovation systems, but to the global competitiveness of our cities and regions in large. That is, in Europe, many cities and regions have long suffered from a low availability of skilled and/or high-excellence workforce (Cedefop 2015; Eurochambres 2019) and the threat seems to have already materialised.

In this presentation, I will approach the topic from the point of view of building an inclusive future labour market – one that attracts and is supported by (im)migrant workers. In more specific, I will talk about an on-going research and development initiative where innovative, new ideas and solutions are collected, shared, and generated, with the aim to improve the level and reduce inequalities, and to promote social inclusion in the current and future

labour market. In doing so, I will introduce an evolutionary perspective that not only looks at developments made so far, or anticipates the emerging trends in the long-term, but builds on knowledge, experiences, and peer learning over generations. The question is: How to develop of the needed anticipatory practices (i.e., the evolution perspective)?

Keywords: *(Im)Migrant Workers, Social Inclusion, Labour, Futures*

How to Navigate Healthcare Systems into the Futures of Holistic Health & Wellbeing?

Karhu, Anna – Riina Hiltunen
University of Turku, Finland

Industrialization has dramatically changed our environment: the nature due to pollution and extensive use of natural resources, the society due to urbanization, technical and scientific developments, and the cultural cognition due to increased individualism. All these aspects have a profound impact on how we comprehend health and organize healthcare. The ongoing megatrend type of change patterns of digitalization, climate crisis, ageing and diversification of population, multipolarity of global powers, and the questioning of continuous economic growth as the core power of wellbeing are challenging the prevailing structures of our healthcare systems and understanding of health.

Healthcare systems have been developed to treat illnesses. Child mortality and the incidences of severe contagious diseases have been cut down by development of new medicines, developing treatment practices, as well as increased understanding of causes of illnesses. These developments have been organized strongly around hospitals and doctors, which are the core of healthcare services. As there are more abilities to treat illnesses and diagnose them, the demands for healthcare systems have increased. This again, has increased the economic burden for individuals and governments, creating wide array of businesses from flu preventing products, to health insurance services. Thus, today healthcare systems have the responsibility to look after the wellbeing of citizens, the workforce of our societies, which involves much more than just physiological health.

Health has central positon in our modern societies. As our understanding of humans as biophysical wholes and of diseases and illnesses has grown, also the abilities to influence one's health have increased. Thus, our perception of health has expanded towards more holistic understanding of health and wellbeing. Health today is not just about not having a disease or injury; it is more broadly associated with wellbeing, both physical and mental. Today, medical doctors and nurses do not only treat health in healthcare, but health is also taken care of at gyms, retreats and life management courses. Also at the society level, the scope of health has broadened to include societal factors such as clean food and water, air quality, working conditions, in addition to disease-related factors. Therefore, health today brings together a wide range of factors related to human wellbeing.
This paper seeks to explore the futures of healthcare and health presented in research and in global, regional and national futures visions, and reflect them with the ongoing megatrends to map out alternative paths for futures of organizing health and wellbeing.

Keywords*: Healthcare, Health, Wellbeing, Megatrends, Systemic Changes, Futures of Healthcare*

(HYBRID) Special STYLE Project Workshop: towards more physically active life-styles, Part 1, Presentations

Time: Thursday 16 June at 9:00-10:45
Room: Aavameri
Chair: Petri Tapio

What If the Technological Transitions of Transport Will Increase Sedentary Travel?

Tuominen, Anu – Johannes Mesimäki – Esko Lehtonen – Henna Sundqvist-Andberg
VTT Technical Research Center of Finland, Finland

The electrification, automation and servitization of travel, also known as the three transportation revolutions (3Rs), constitute the major technological transitions altering present transport systems. The combined effects of these changes, such as whether they support or conflict with prevailing sustainability objectives, is unknown as each progresses its own path. Likewise, their health implications remain ambiguous. Based on literature findings, this presentation argues that the 3Rs and their combined effects may have negative overall health implications.

The transition from internal combustion to electrically powered motors offers a significant opportunity to reduce greenhouse gas emissions and improve air quality in urban areas. Meanwhile, automated transport is anticipated to reduce crashes and associated injuries. Automated vehicles may more efficiently utilise the road network, and novel Mobility-as-a-Service initiatives may increase the availability of transport services, promoting more equitable mobility opportunities for all. Despite these benefits, electrification, automation and servitization may encourage modal shifting from public and active travel towards motorised vehicles, increasing total vehicle kilometres travelled and decreasing daily physical activity. During the past decade in Finland, the share of active modes has decreased and the annual direct health care costs caused by inactivity have increased. Therefore, the positive developments detailed above may arguably occur at the expense of physical activity, which can lead to and exacerbate chronic illnesses such as obesity and heart disease.

Driving forces concerning the above include reduced travel time costs, as automation makes driving less demanding, freeing up time spent in the vehicle for other activities. The potential availability of shared automated vehicles may exacerbate modal shifting by decreasing thresholds to access, competing more directly with public and active transport. Additionally, vehicle kilometres travelled may further increase if electrification of vehicle fleets reduces the monetary costs of travel. The greater use of spatially demanding motor vehicles and reduced travel costs may encourage urban sprawl, expanding intra-urban distances and further lowering the competitiveness of public and active travel and their associated physical activity. Although the spread of electric micromobility modes such as e-bikes could increase physical activity, e-scooters may replace walking and cycling trips, and the relatively high crash risk of e-scooters and e-bikes may offset some of their potential health benefits.

The presentation will picture both the challenges and opportunities ahead for the three transport revolutions. Policy and planning measures to manage the potential negative health outcomes of the 3Rs are discussed.

Keywords: *Electrification, Automation, Servitization, Physical Activity, Active Travel*

Temporal Dynamics of Subjective Wellbeing in Commuting

Sandberg, Birgitta – Leila Hurmerinta – Henna Leino
Turku School of Economics, University of Turku, Finland

The subjective experience of wellbeing in commuting is of growing interest as policy makers plan the future of the transport systems. Past research indicates that commuting impacts on subjective wellbeing. However, the research focuses mainly on hedonic aspects of subjective wellbeing, that is, experiential and evaluative aspects of wellbeing, whereas eudaimonic aspects of subjective wellbeing have been given very little consideration. Furthermore, even though the temporal dynamics of subjective wellbeing in commuting have been acknowledged empirical studies have not yet addressed them. Consequently, the purpose of this study is to understand how pursuits for different types of subjective wellbeing manifest and evolve in commuting behaviour.

We utilise an exploratory approach and analyse the interview data on commuting collected from 108 individuals

representing three different work places in two Finnish cities. Our findings reveal that different dimensions of subjective wellbeing are emphasised depending on the temporal aspects of experience: experiential wellbeing aspects are highlighted during commuting and evaluative wellbeing aspects are emphasised shortly after the commuting. Both of these relate to the instant rewards gained from commuting behaviour, and thereby to the hedonic wellbeing. However, in longer term the eudaimonic wellbeing aspects, such as sustainability and social relations, are highlighted and used to justify the commuting behaviour. This suggests that if we aim for long-lasting behaviour change in commuting we should consider both the hedonic wellbeing aspects related to instant reward and the eudaimonic wellbeing aspects related to justifications of commuting.

Our study contributes to the research on commuting behaviour by clarifying the role of temporal dynamics in the subjective wellbeing. For the policy makers our study offers a new wellbeing perspective on future transport policies beyond the common goals of facilitating commuting and decreasing negative effects such as pollution.

Keywords: *Wellbeing, Commuting, Hedonism, Eudaimonism*

Scenarios of Physical Activity Up To 2030: A Mixed-Methods Approach

Kiviluoto, Katariina[a] – Petri Tapio [b] – Ira Ahokas[b] – Minna Aittasalo[c] – Sami Kokko[d] – Tommi Vasankari[c] – Anu Tuominen[e] – Riikka Paloniemi[f] – Birgitta Sandberg[g] – Leila Hurmerinta[g]

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[b] Finland Futures Research Centre, University of Turku, Finland
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[d] Research Centre for Health Promotion, University of Jyväskylä, Finland
[e] VTT Technical Research Centre of Finland Ltd., Finland
[f] Finnish Environment Institute, Finland
[g] Department of Marketing and International Business, Turku School of Economics, Finland

Sedentary lifestyles and the lack of physical activity (PA) are a major concern among all age groups, and current generations tend to be less fit than the previous ones. According to the World Health Organization, the global situation is alarming: one out of four adults and three out of four adolescents do not meet their respective targets of WHO recommendations. At the same time, there is an urgent need to cut transport-related carbon dioxide (CO2) emissions. The decarbonising potential of active travel (e.g. walking and cycling) is widely recognised especially in urban areas. Major gains can be foreseen if current car-centred lifestyles and sedentary behaviour are addressed from an integrated perspective. Although the health-related co-benefits of PA and active travel have been established, there is a lack of a comprehensive futures perspective, which would tie these two together and address the topic from a future-oriented lifestyle angle.

In this study, we explored future scenarios in the intersections of PA and active lifestyles as well as related environmental and health benefits. We used a Delphi approach to examine the topic in Finland. Although frequently used in health-related research, Delphi has rarely been used in exploring alternative futures or non-consensus. By identifying alternative futures, research may inform decision-makers to open up their thinking to various options instead understanding the future as something following a straight line from the present to the future. Building on the experts' perceptions on alternative futures, we built scenarios to guide future policies and provide support for decision making. We addressed the following detailed research questions: RQ1) What kind of scenarios of PA can be derived from Finnish experts' views of the future up to 2030? RQ2) What barriers and drivers do experts see in current efforts to promote PA?

The study design was based on a mixed-methods approach where we combined both qualitative and quantitative data analysis. Building on the experts' perceptions on alternative futures, we formulated four scenarios for PA up to 2030, which we named Mismatch, Empowerment, Fatigue and Balance. The scenarios may be utilised as guides in developing future policies and decision-making, and to build and to build socially and environmentally sustainable futures. Our scenarios demonstrate that alternatives do exist, and actions can be realigned. We may even avoid an undesirable scenario altogether.

Keywords: *Physical Activity, Active Travel, Active Lifestyles, Scenarios, Delphi, Mixed-Methods*

Escapism or Integration? Family Constellation Reflecting on the Physical Activity Engagement

Leino, Henna M. – Leila Hurmerinta – Birgitta Sandberg
Turku School of Economics, University of Turku, Finland

Inadequate physical activity is a current and future threat to national health almost globally. A sustainable society depends on individuals' health and well-being in order to remain functional. Therefore, it is essential to study the motivating and demotivating factors of physical activity in order to understand how the physical activity engagement (PAE) could be increased. There is a wide range of studies on adults' PAE but the impact of family constellation is under-researched despite its obvious impact on everyday life. Existing studies focus on the mediating role of family in health interventions, instead of exploring the family and PAE as such. In the cases where the focus is on family, the interest often concerns the adult influence on child PAE and only rarely the family constellation's influence on adult PAE. The purpose of this study is to respond to this gap by gaining understanding of how the family constellations reflect on PAE.

We explore this by studying individuals' self-reported motives and behaviour. The data consists of semi-structured interviews (104 working-age individuals in two Finnish cities) where projective techniques were employed to elicit multidimensional recall and self-report among the interviewees. The data was first coded with case classifications (e.g. age, gender, family and living) and next, the answers regarding the role, motives and barriers for PAE were coded in NVivo. A mixed-methods analysis was performed. First, we conducted quantitative analysis on the correlations between family constellation and PAE. Second, we performed a qualitative analysis on how the correlations appear in the data. Based on the analysis, we developed a model to describe how the family constellation is connected to the motives and forms of PAE.

The results indicate that individuals have escapist and integrative motives for PAE. The relationship between these motives and their consecutive physical activities seems to vary dynamically, depending on the family constellation. The detected forms of behaviour include solitary escapism, co-escapism and integrative activities (the last sometimes being integrative escapism).

The results of the study contribute to the PAE literature by highlighting the dynamic role of family constellation on the everyday physical activity motives and behaviour. The public and private actors can take the underlying escapist and integrative motives and the resulting forms of behaviour into account when developing future services that aim to increase PAE, especially on a family level.

Keywords: *Physical Activity Engagement, Family Constellation, Motives, Escapism, Integration*

Individuals' Agency in Forming Physical Activity Experiencescapes

Hurmerinta, Leila – Birgitta Sandberg – Henna Leino
Turku School of Economics at the University of Turku, Finland

The evidence on the benefits of physical activity (PA) is compelling. It is widely acknowledged to contribute to health, well-being, and decreased societal costs. Consequently, the determinants of PA, such as characteristics of the individual, of the social and physical environment, of the intervention, and of activity itself have been extensively studied. However, the existing literature is surprisingly silent on the experiences relating to PA and its environment even though the research indicates that positive experiences are important for establishing regular physical activity. In the future the individuals will increasingly shape their experiences.

The consumer experience concept highlights subjectivity and interaction with the environment, and locates in the minds of individuals. Experiencescape refers to the physical space where the experience is anchored; it is often pivotal in the overall experience. Experiencescapes have been studied, for example in service fields (such as servicescapes) and tourism. However, they tend to see settings as bundles of static and exogenous elements created for customers, thereby largely neglecting the constant interaction between the actor and the surroundings. This research analyses how the PA experiencescape is formed by an individual's agency. The focus is on an individual's relationship and interaction with the environment when having physical activities.

We applied an interpretive approach to explore interviewees' interactions, meanings and affects related to the PA environment. The data contained 74 interviews in two different workplaces (an elementary school and a shopping

mall) in a city in southern Finland. We applied the established Gioia-method for coding the data into different categories; the experiences were classified relating to PA itself, and to the environment within which the physical activity was performed. Then the environment-related experiences were further elaborated and coded, based on individuals' experiential relationship with the environment during physical activities, by employing QSR NVivo12.

We found three major experiencescapes that guide individuals' choices: Behavioral experiencescape - from consumption to cocreation, Cognitive experiencescape - from control to freedom, and Affective experiencescape - from a vacuum to an interplay of senses. The research increases understanding of individuals' agency in their experiencescape. At the end, individuals become designers of their own experiencescape through interactions with PA environments. They search for environments that produce the circumstances offering the ground for the most enjoyable PA experience. This, however, throws a shadow over the future – it is essential to consider how the climate change and pollution might affect our future experiencescape and search for alternatives.

Keywords: *Experiencescape, Physical Activity, Environment, Agency*

SESSION II at 11:00–12:30

Post-Pandemic Transformation and the New World of Work

Time: Thursday 16 June at 11:00-12:30
Room: Pisara
Chair: Juha Kaskinen

Future Work and Workplaces in the Post-Pandemic Era

Toivonen, Saija[a] – Riikka Kyrö[b]
[a] Aalto University, Finland
[b] Lund University, Sweden

The implications of the ongoing COVID-19 pandemic to work and workplaces are unprecedented. The pandemic forced an unexpected massive shift to home working worldwide. The shift irreversibly demonstrated that work has become time and place independent. Working in second and third places is expected to continue to grow in the near future, accelerated by megatrends such as digitalization, environmental crises, and individualism. At the same time, it well-known that remote working may have detrimental effects to e.g., employee satisfaction, work-life balance and social connection. Our research aims to explore both the direct short-term and indirect longer-term impacts of the COVID-19 accelerated workplace transformation. We start by studying the direct impacts to perceived employee productivity and social connection based on employee experiences during the COVID-19 enforced home-working period.

We consider perceived productivity and social connection as indicators of employee satisfaction and wellbeing. We will employ a quantitative research approach and utilize secondary data collected by a private company. The data set includes a home working survey with 139,240 respondents globally. The data was analyzed using regression analysis where the outcomes perceived productivity and experienced social connection were regressed on work and demographic factors such employee age, gender, time with company, work setting at home, and geographical location. The findings show that sociodemographic issues as well as the work setting available at home play a role in the perceived productivity, and experienced social connection. These results provide us important knowledge on employee preferences towards a better work-life balance and employee wellbeing.

The knowledge allows us to explore the indirect, longer-term impacts to future workplaces. In the next step of the study, we will engage in a qualitative research approach and future studies methods. More specifically, we will develop employee profiles based on the employee preferences identified in the first phase. Next, the employee profiles will be used to create alternative scenarios for transformed workplace needs in the future. While the acute phase of the current pandemic appears to be over, this research explores both the direct short-term and indirect, longer-term impacts. The findings will therefore be relevant also in the longer term in the post-pandemic era, and should be considered when planning future workplaces and practices in organizations.

Keywords*: Remote Working, Work Setting, Productivity, Social Connection, Home Working*

Post-Pandemic Imaginations of Remote Work Futures in Africa: Learning from an Environment, Health, and Safety Perspective

Manteaw, Bob
Center for Climate Change and Sustainability Studies, University of Ghana, Ghana

The pandemic has triggered seismic shifts in how we work, causing many organizations to transition from an office-centric culture to more flexible ways of working. This shift as has been necessitated by health conditions and the assumption that remote work or working from home offers a certain assurance of safety for employees. The shift so far has been largely experimental as most businesses and organizations continue to learn about what works and what does not work.

Implicit in this shift is the assumption that the most essential requirements for the efficient operability of a remote work regime is the availability and effectiveness of technologies such as a computer and internet connectivity. Thus, once those supplies are in place remote work is expected to be functional. As learning continues, what is muted in such arrangements is the requisite technologies that ensure a safe working environment and the well-being of employees in notions of remoteness.

In most of Africa and certainly in Ghana, remote work has been embraced as a necessity and a potential future of work. Intriguing, however, is the fact that the occupational health and safety requirements for the home environment is yet to become a precondition for remote work. Even when it has become a matter of discussion, it has been an afterthought and only when employees have had reason to complain about challenges they face. And, as it has become increasingly evident, some employees have and continue to face significant physical, environmental, emotional, and psychological challenges which have had significant impacts on their mental health.

This paper foregrounds the occupational health and safety imperatives of remote work as an emergent practice with the potential to become the future of work. Using Ghana as reference point, the paper embarks on a critical exploration of remote work practices in Ghana from an environmental, occupational health and safety perspectives. While it interrogates current assumptions and practices, the paper calls for the re-imagination of the future of remote work in Africa as a necessary requirement for health and well-being in a changing planetary order.

Keywords: *Remote Work, Health And Safety, Pandemic, Future Of Work, Africa*

The Post-COVID Welfare State – Seeking Resilient Models in An Era of Mass-Virtualisation

Vallistu, Johanna[a, b]
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[b] Tallinn University of Technology, Estonia

Four years after publishing Estonian future of work scenarios „Employment 2035“ it is time to assess the realization of scenarios and consider what does it mean in terms of potential changes of social welfare systems – both in more immediate future as well as in the longer perspective. While scenarios were created with the focus on the Estonian labour market, the uncertainties and ambiguities presented in the scenario framework could be generalised on the European Union joint labour market. While the key uncertainties of scenarios - the skills migration from third world countries and the impact of technology on the nature of jobs creation – are still relevant in today's context, a paradigmatic shift has taken place during the COVID-19 crisis. One could argue that while in 2018 the main focus in future of work discussions was on automation and task replacement potentially causing mass-unemployment, the more imminent challenge today is what will happen to national welfare systems facing mass-virtualisation and thus a much higher potential for borderless global work, own-account work and platform work. All of these associated with higher levels of precariousness for the worker and lower level of tax contributions into state social welfare systems.

The paper will look at social welfare challenges, such as providing access to healthcare and adequate pension to all from the angle of these accelerated changes on the labour market during the COVID-19 crisis. Using the literature analysis and welfare state theories, it will then be analysed which types of welfare systems would be more resilient in facing the challenges. The analysis will also seek out welfare system solutions not yet implemented or widespread, such as digital nomad insurance or basic income schemes. The theoretical part of the paper has an ambitious aim to come up with renewed taxonomy of welfare state categories facing the new world of work.

The paper will analyse in which direction the change has been taking place in Estonia and use the prior analysis on seeking out the pitfalls and potential of Estonian welfare system facing the future according to different scenarios.

***Keywords**: Future of Work, Future of Social Security, Global Work Future, Welfare States*

Engaging Post-Pandemic Transformative Policy Imaginaries, a Delphi Study

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[b] University of Heidelberg, Germany
[c] NEOMA Business School, Reims, France

The COVID_19 pandemic can be seen to have offered a window of opportunity to critically address the underlying health, socio-economic and environmental challenges our society faces. Transformative futures are on the horizon. These post-pandemic imaginaries often overlap with the EU level policy packages like the European Green Deal, the Bioeconomy Strategy or the Circular Economy Action Plan that have the prerequisites to support a sustainable socio-economic transformation.

At the beginning of the COVID-19 pandemic a research study was quickly established by an international team to explore these emerging future imaginaries and address what they meant and how well the proposed EU level transformational policy packages were suited. Furthermore we guided a exploration on what a vastly improved future sustainable policy could look like in this new era. To answer this question, we performed a qualitative media analysis in order to outline current public imaginaries, as well as different policy suggestions put forth by different media outlets. The study carefully designed a two round Delphi Study that was conducted to scope for transformative post-pandemic policy options with a select expert panel.The innovative approach for ""designing your own future transformative policy"" is worth noting. The results showed there is a mismatch between public expectations and the transformative potential of existing policies and we argue that participatory methods can bridge the gap between complex interpretations.

In this paper we introduce this structured method-design and the potential to anticipate future governance' needs through future imaginaries. Reflecting on our design, clearly there were some aspects that respondents found challenging and others that were immediately intuitive. These aspects are considered further to take forward into a larger study. Considering that this was a specific study with smaller set group of experts, it would be fruitful to explore how this study could scale up and how this type of policy exploration could be explored and developed further. We therefore discuss what an integrated transformative policy mix that can jumpstart a sustainable post-COVID recovery may look like and how to facilitate that journey.

***Keywords:** Post-Pandemic, Policy, Imaginaries, Delphi, Transitional, Sustainable*

Workshop

Future Vision for the Centre of Expertise Health of Fontys UAS

Time: Thursday 16 June at 11:00-12:30
Room: Lumi
Facilitator: Monica Veeger

Veeger, Monica
Fontys University of Applied Sciences, The Netherlands

The process to come to a Future vision for the centre of expertise Health of Fontys university of applied sciences to contribute to a healthy lifestyle of the citizens in the South East of the Netherlands.
With the Centre of Expertise Health (CoE), Fontys university of applied sciences wants to contribute, in cooperation with care organisations, government, the business world, citizens and other knowledge partners in our region, to a society where everyone has a fair chance of a healthy life. Together with all stakeholders CoE Health wants to reduce health inequalities and ensure that all citizens live longer in good health in the South East of the Netherlands. Health is seen as people's ability to adapt and self-manage in response to the physical, emotional, environmental and social challenges of life (Huber M. et al, 2011). To this end, educational innovation, lifelong learning, and research & innovation is used as tools in living labs. In this workshop the process of coming towards the Future mission and

vision of the CoE health will be explained. The back casting method 'sustainable futures' developed by C Heselmans and L Hofman was used. Not only the process will be explained also the encountered hick ups. At the end the results of the Future back casting method will be shared.

Keywords: Education, Healthy Life, Living Labs, Back Casting, Formation of Mission and Vision

(HYBRID) Workshop

Practical Futures Guidance for Youth Work and Education

Time: Thursday 16 June at 11:00-12:30
Room: Virtalähde
Facilitators: Antti Rantaniva and Ville Eerikäinen

Rantaniva, Antti – Ville Eerikäinen
Xamk, Juvenia Youth Research and Development Centre, South-Eastern Finland University of Applied Sciences, Finland

Nowadays it's easy to find various scary visions regarding global future from the media news stream: there's a lot of discussion about war, environmental crisis, economic collapses and countless other serious threats. How could we put more effort to also highlighting all the opportunities and potential positive developments that are just as equally possible?

According to recent research, young people's faith in the future has collapsed. Traditionally, the younger generations have been more optimistic about the future compared to the elder ones, but now the roles have even been reversed. Antti Rantaniva and Ville Eerikäinen from Juvenia Youth Research and Development Centre (South-Eastern Finland University of Applied Sciences, Xamk) are developing future coaching targeted especially for young people. The aim of the coaching programme is to discuss about the future and different phenomena that are affecting our future and to consider what kind of future would be desirable and, on the other hand, undesirable. The key objective is to strengthen young people's faith in the future as well as their agency and to enhance their abilities of futures thinking. We want to strengthen individual's understanding of what would be a "good future" for them on a personal level and then encourage them to take initiative to strive for those goals.

In this workshop, we will present the key principles behind our coaching programme and discuss the elements that have made the coaching successful for high school students, youth workshop and outreach youth work clients as well as university students. We will focus in particular on the use of youth work methods and non-formal learning as part of our coaching programme such as games and other participatory activities. You can get acquainted with e.g. to the board game we have developed as a tool for the futures guidance of young people. Join us to learn how to help young people embrace the future!

Keywords: Lifestyles, Young People, Futures Guidance, Futures Coaching

Special STYLE Project Workshop

Mental Time Travel Towards More Physically Active Lifestyles, Part 2

Time: Thursday 16 June at 11:00-12:30
Room: Aavameri
Facilitators: Ira Ahokas and Petri Tapio (In-person)

Note: While the first part of the STYLE workshop will be held in hybrid mode, the second part will be divided, with the in-person attendees staying in Aavameri and the virtual participants in Zoom.

Ahokas, Ira – Petri Tapio – Essi Silvonen – Johanna Lamberg
Finland Futures Research Centre, University of Turku, Finland

Special session:
Mental time travel towards more physically active lifestyles

Decreasing physical activity (PA) and fossil-fuel based mobility are both global sustainability challenges. The World Health Organization (WHO) has initiated the Global action plan on physical activity aiming to achieve health, economic and environmental benefits that contribute to the sustainable development goals (SDGs). Although the importance of PA has been recognized, it is evident that strategies created and actions implemented in regional and local levels have not been able to tackle the major obstacles and challenges of active lifestyles. Therefore, we need both inter- and transdisciplinary approaches to better understand mechanisms, solutions and policies that support lifestyle changes. Integrating discussions of PA and active travel has significant potential for increasing active lifestyles and sustainable growth. The transition towards healthier and active lifestyles could reduce public health costs and CO2 emissions while creating new, sustainable business opportunities.

First part of the session features a group of invited speakers from the STYLE project introducing latest studies and results on the themes related to lifestyles of increased PA and active travel. This is followed by a facilitated discussion with the audience.

Proposed speakers and titles of the presentation:

- Anu Tuominen et al.: "What if the technological transitions of transport will increase sedentary travel?"
- Birgitta Sandberg: "Temporal dynamics of subjective wellbeing in commuting"
- Katariina Kiviluoto et al.: "Scenarios of physical activity up to 2030: A mixed-methods approach"
- Henna Leino: "Escapism or integration? Family constellation reflecting on the physical activity engagement"
- Leila Hurmerinta: "Individuals' agency in forming physical activity experiencescapes"

Second part of the session invites the audience to take part in co-creating new ideas and viewpoints of futures of active lifestyles. We conduct a futures workshop using mental time travel method to find new service and product solutions supporting PA and active travel. Mental time travelling is an example of a method that enables participants to think disruptively rather than just extrapolating from the past. It puts participants in a state, where they can 'see' and even 'feel' visions of the future.

The two-fold objective of the session is to encourage future oriented, inter- and transdisciplinary discussion of the topic, and to introduce a workshop method generating insights of novel solutions supporting lifestyle changes by opening up the minds of participants to long-term thinking.

The session is hosted by the STYLE (Healthy Lifestyles to Boost Sustainable Growth) research project that is funded by the Strategic Research Council at the Academy of Finland.

Keywords: Lifestyles; Physical Activity; Active Travel; Health; Futures Workshop

SESSION III at 13:30–15:00

Societal Structures and Individual Agency – The Need for Systemic Change?

Time: Thursday 16 June at 13:30-15:00
Room: Pisara
Chair: Katriina Siivonen

On Becoming an Agent: Residents' Futures Shed Light on Agency and Capability Expansion in the Energy Transition

Jansen, Erik[a] – Maria Kaufman[b] – Sietske Veenman[b] – Simone Haarbosch[b] – Gideon Visser[a]
[a] HAN University of Applied Sciences, The Netherlands
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In the Netherlands a key challenge in the sustainability transition is establishing a CO2-free built environment by reducing carbon gas use of households. This is commonly referred to as the neighborhood-focused energy transition (NET). The traditional approaches in NET entail an instrumental focus on technical innovation and behavioral interventions, the latter either by encouraging or discouraging (un)wanted behaviors. Generally overlooked, however, is the question of how to induce an inclusive and more existential sense-making perspective that allows residents to

exchange, deliberate and enact their visions about what it means to live in a future sustainable neighborhood. The former approaches have met with varying success, where the latter may yield a way forward in engaging residents. Theoretically, there are at least three reasons in favor of such a perspective. First, it is procedurally just as it allows all residents to engage in dialogue about futures and exerting influence on fundamental changes in their own neighborhood and living circumstances. Second, it is epistemically just, as the opportunity to participate in such processes recognizes all residents in their being as knowledgeable persons. Third, it may be substantively constructive as it allows for unleashing creative potentials with the dwelling population. These reasons foster the agency of residents in the energy transition, instead of locking them into a position as a patient, i.e. a passive agent. Firmly establishing residents' agency is crucial for a just and energy future.

To gain insight in residents' agency with respect to the NET, this paper operationalizes such agency as the capabilities or subjective opportunities they perceive in their everyday lives and their futures and what factors or aspects they consider expanding or dwindling these capabilities. In a neighborhood in an eastern Dutch city we therefore gathered residents' day-to-day narratives and their images about the future. In the analysis of these narratives we explored to which, if any, facilitating and hampering factors they attribute either capability expansion or reduction. Further, we studied how residents connect these capabilities with individual or collective aspects of agency or social change. Finally, we argue that combining a futures perspective with notions from the capability approach, such as capability security and bounded rationalities, form a theoretical as well as methodological advance in understanding residents' current and future perspectives in the NET.

***Keywords**: Capability Approach, Agency, Futures Narratives, Energy Transition, Neighborhoods*

What Does Transformational Change Entail in Wetland Restoration?

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In the face of simultaneous climate, biodiversity, and clean water challenges, wetland and coastal ecosystems across Europe represent a significant action sphere. IPCC's report "Climate Change 2022: Impacts, Adaptation and Vulnerability" mentions their restoration pivotal when pursuing sustainable, resilient, and just society. EU Horizon 2020 Green Deal project WaterLANDS (2022–2026) works in 14 countries and paves the way to upscaling wetland restoration, with an ambition to co-create a pathway to transformational change in policy and governance toward such upscaling. While it is recognized that previous ecosystem restoration efforts have been too local or too fragmented for wide impacts, simply multiplying resources and activities will unlikely yield targeted effects.

To unlock higher and wider impacts of wetland restoration we must elaborate and understand the nature of transformational change. This conceptual and action-oriented contribution decomposes the transformation and sets some strategic principles to enable that. First, we note that understanding and facilitating a transformational change will evidently require a systemic view, and in the case of wetlands restoration, the lens of (adaptive) socio-ecological systems, where the connection between a human activity system and natural ecosystems is intrinsic and inherent. Second, pursuit for a beyond-incremental change forces us to consider our preconceptions of the system at hand – here the ACTVOD analysis will be employed to shed light on and renegotiate our understanding of what are values behind, what exactly the core activity is, which drivers and obstacles influence the activity, and who the beneficiaries and key actors are. Third, to achieve a transformational change which also carries an upscaling potential, we must establish a long-lasting stakeholder engagement process that encourages agency and safeguards local benefits (e.g., water quality, flooding mitigation, recreation opportunities) when providing ecosystem services through restoration.

In WaterLANDS, scientific learnings from knowledge sites will be rendered, applied, and tested in the action sites of implementation. Alongside public goods type of benefits, innovative economic solutions, such as payments of ecosystem services and other market-based instruments will be needed to address the all-inclusive governance challenges of legitimacy, profitability, and ecological soundness. Fourth, the transformational efforts not only need to be upscaled in space but also in time, meaning that it will be crucial to co-create a sustainable legacy with which a cultural change with restoration governance may continue post-project and thus help meet national and European objectives relating to biodiversity, water quality, and carbon storage and sequestration.

***Keywords:** ACTVOD, Governance, Resilience, Socio-Ecological Systems, Stakeholders, Wetland Restoration*

Sustainability Transformation for Biodiversity - Finding Institutional Barriers and Solutions

Puustinen, Sari – Sanna Ahvenharju – Ville Lauttamäki
Finland Futures Research Centre, Finland

Resolving the biodiversity crisis requires systemic sustainability transformation in different areas of society. Societal institutions and practices play a key role in bringing about systemic change. According to a recent systematic literature review, empirical studies on sustainability transformations are generally lacking while theoretical research related to the concept of Transformation is abundant (Salomaa & Juhola 2020).

Research project "Systemic Transformation for biodiversity - finding institutional barriers and solutions" fills in these gaps by focusing on the institutional opportunities and obstacles for radical systemic change to reduce the impacts of Finns to global and local biodiversity loss. The study focuses on the food system and nature-based recreation (especially the use of forests)

The study is divided into three phases: First, it examines those national and EU-based public sector institutional structures and practices that hinder or impede the implementation of biodiversity protection or recovery. Institutional practices here refer to, both to societal processes and political instruments that guide these processes. These include, for example, legislation, economic and policy instruments, planning and information measures. From the perspective of transformation research, we are also interested in what kind of underlying values, such as human-nature relationship, these institutional structures and practices are based on. Second, research identifies and develops institutional solutions (practices and policies) that better support the protection and recovery of biodiversity. These can be even radical by character. Third, the acceptability and plausibility of developed biodiversity-promoting practices and policies will be studied among the adult population in Finland.

The paper aims to provide a theoretical overview of the literature on the subject: How and from what perspectives has biodiversity management/governance been studied in recent years and what gaps and research needs emerge? The paper is produced as a part of a multidisciplinary research project "Biodiversity-Respectful Leadership (BIODIFUL 2022-2027)", funded by the Strategic Research Council of the Academy of Finland.

Keywords: *Biodiversity, Sustainability Transformation, Governance, Environmental Social Science*

From a Single Vision to a Vision Cluster – For Enabling Analysis and Sustainability Transformations

Tapiola, Titta - Vilja Varho – Katriina Soini
Natural Resources Institute Finland (Luke), Finland

Food packaging systems - as any other systems - are facing wicked problems and it is no longer possible to optimize or solve one single problem at a time. Instead, systemic view, co-operation and co-creation are needed when aiming for sustainability transitions. Common perception is that a necessary condition for any type of systemic change or transition is to have a clear vision of the desired future, which is shared by the members of the system or systems concerned. Visioning can be seen as a method that builds common futures thinking and the view of future goals of participants.

We present an analytical tool called "vision cluster" for analyzing visions. The visions of a system (or sub-system) could be placed on two axes, according to their nature: x-axis for breadth of change (involvement of different actors) and y-axis for depth of change. Further, visions can be roughly categorized into four groups or quarters between the axis (x, y): narrow and shallow ("Pond"), broad and shallow ("Beach"), narrow and deep ("Fjord") and broad and deep ("Ocean").

We collected and analyzed stakeholder vision materials regarding sustainable food packaging in Finland. Considering the motivation and agency of participants to act towards the goals of their visions, we claim that collecting and sharing different kinds of visions (in relation to their depth and breadth) can be useful. They form a vision cluster, complementing each other, as long as they lead to a similar direction. For example, visions in the Pond sub-cluster are more easily reached and can therefore be motivating, whereas visions in the Ocean sub-cluster can be inspirational and transformative, even if they are more difficult to reach. It is questionable whether a single, sufficiently concrete and specific and commonly acceptable vision could be created for food packaging, which further points to the usefulness of a vision cluster.

Keywords: *Vision, Visioning, Transformation, Systemic Change*

Workshop

PHENOMENA: Co-Designing Planetary Care Through Joy

Time: Thursday 16 June at 13:30-15:00
Room: Lumi
Facilitator: Ruth Guerra

Guerra, Ruth
Prague City University, Czech Republic

Many narratives about the future of our planet — whether through forecasting or science fiction — are often presented as dystopian. Within this framework, fear becomes the catalyst for change. But how can we be certain that our solutions will lead to positive outcomes? PHENOMENA is a world-building tool and experience for designers that approaches caring for our planet through the radical act of joy. It fosters open collaboration among teams through participatory design methods, and situates play as central in the design process. The tool is intended to offer an alternative design methodology, establish meaningful connections with our planet, and democratize the pursuit of solving world problems. Learn more at phenomena.cloud.

Keywords*: World-Building, Planetary Care, Co-Design, Design Tool*

(HYBRID) Workshop

Hybrid Infinities; Speculative Futures

Time: Thursday 16 June at 13:30-15:00
Room: Virtalähde
Facilitator: Linda Hofman

Hofman, Linda[a] – Nadine Roestenberg[b] – Maaike Rijnders[c] – Danielle Lavacca[c]
[a] Fontys, The Netherlands
[b] Fontys HKU & STRP, The Netherlands
[c] Fontys ACE, The Netherlands

Growth, innovation and improvement. Partly due to technological developments, we can do more and desire more. People produce and consume more and more, but the earth's resources are not infinite. We are increasingly connected through apps and social media, but how long can you actually give attention? We have reached the end of infinity.

'Hybrid Infinities' is a collaboration between STRP, Fontys Academy for Creative Economy, and Fontys School of Fine and Performing Arts. In this interdisciplinary research project students and alumni experiment with creating meaningful, engaging, and immersive experiences between physical and online audiences using creative technologies. The project speaks to the need to consolidate different embodied experiences as people move between virtual and physical spaces which has been exaggerated by pandemic conditions.

Under the guidance of artist Ian Biscoe, design research studio affect lab and the futurists of Fontys research group 'Designing the Future', students learned to give hybrid form to images of the future by using technology, art and future research. A group participants started in October work on their own 'hybrid' projects on 'infinity'. The winning project, Onlife Game, by five participants from different disciplines will be realised for STRP Festival, 6-10 April 2022 in Eindhoven, the Netherlands.

Onlife Game is a physical and browser-based experience. It presents a speculative future scenario in which a powerful algorithm has found the solution to over- and underpopulation. This formula needs to be discovered by playing a game in which online and offline visitors must decide upon the input that determines the future scenario. The project speaks to crisis in the exhaustion of planetary resources, as well to how much we should trust technology.

The research group will present the findings on the search for meaningful hybrid experiences and show a live interactive adaptation of Onlife Game.

About: The knowledge centre Creative Economy of Fontys, University of Applied Science, the Netherlands led by applied professor Tessa Cramer PhD, unites lecturers, researchers and partners to guide, accelerate and be fundamental change with the common ground of artistic and creative approaches and working on a new creative economy. Her research group 'designing the future' translates the futurist mindset for a broader public.

Strp Festival 2022, from 7 to 10 april, artists, thinkers and performers exploring 'The end of Infinity' in Eindhoven, the Netherlands.
https://strp.nl/

www.fontys.nl
www.strp.nl
http://studiobiscoe.com/research/#dna
www.affectlab.org
https://fontys.nl/Onderzoek/Designing-the-future.htm

***Keywords**: Speculative, Futures, İnfinity, İnstallation Art, Hybrid, Digital*

(HYBRID) Special Millennium Project Session

Anticipatory Governance to Boost Crisis Preparedness – What Policy Actions Needed for Resilient Cities and Human-Friendly AI?

Time: Thursday 16 June at 13:30-15:00
Room: Aavameri
Chair: Sirkka Heinonen

Heinonen, Sirkka[a] – Jerome C. Glenn[b] – Osmo Kuusi[c, a]
[a] Finland Futures Research Centre, University of Turku, Finland
[b] Millennium Project, USA
[c] Aalto University, Finland

Our planet is in a turmoil. We are living in the treadmill of several crises – natural, financial, political and most recently the crisis brought by the COVID 19 pandemic. Climate change and loss of biodiversity are exacerbating the ecological Anthropocenic emergency we are in. We humans have now two massive issues to deal with. Constructing cities worldwide is a megatrend that has a huge impact on nature, on the use of natural resources, as well as on our health and wellbeing. Such impacts are too often detrimental. For these reasons, we should be addressing and modifying the built environment (land and space use) as a rescue for us in various crises – and as sources of health and wellbeing. The second grand challenge we have is AI. If the initial conditions of AGI (Artificial General Intelligence) are not "right," it could evolve into the kind of Artificial Super Intelligence (ASI) that Stephen Hawking, Elon Musk, and Bill Gates have warned the public could threaten the future of humanity via the future globally connected Internet of Things (IoT). It is likely to take ten years to: 1) develop ANI (Artificial Narrow Intelligence) to AGI through international or global agreements; 2) design the governance system; and 3) begin implementation. Hence, it would be wise to begin exploring potential governance approaches and their potential effectiveness now.

Anticipatory governance can boost crisis preparedness. What policy actions and regulations would be needed to make cities resilient? What policy actions and regulations are needed to govern a safe transmission from ANI to AGI? What policies and regulations would be needed in combining these two goals? Cities are increasingly dependent on AI, hence, their resilience will also be dependent on the future of AI. Potential barriers and incentives for promoting successful crisis preparedness are also being sought for. The Special Millennium Project Session discusses these questions by providing a keynote by Jerome Glenn, commentary talks, and an interactive debate and elaboration of the topic that encourages participants to give and analyse suggestions for concrete policy actions and recommended practices. The ultimate goal is to explore possibilities for providing urban space that is crisis resilient, prone for healthy living and wellbeing, and embedded with trustworthy and human-friendly AI as support for daily living.

13.30 - Introduction to theme of the Session
Anticipatory Governance for Resilient Cities

Heinonen, Sirkka
Finland Futures Research Centre, University of Turku, Finland

13.40 - Keynote Speech: Global Anticipatory Governance to Boost Crisis Preparedness for Resilient Cities and General Artificial Intelligence AGI
Glenn, Jerome C.
The Millennium Project, USA

14.10 - Anticipatory Governance for Human-Friendly AI
Kuusi, Osmo
Aalto University and Finland Futures Research Centre, University of Turku, Finland

14.20 - Comments and Discussion Through a Foresight Exercise

***Keywords**: Resilient Cities, AI, Anticipatory Governance, Crises, Policies*

FRIDAY 17 JUNE 2022

SESSION IV at 9:00–10:30

Novel Interconnections of Health, Social Justice, Land Use Planning and the Environment

Time: Friday 17 June at 9:00-10:30
Room: Pisara
Chair: Sari Puustinen

Extending the Shared Socioeconomic Pathways for Adaptation Planning of Blue Tourism

Hyytiainen, Kari[a] – Liisa Kolehmainen[b] – Bas Amelung[c] – Kasper Kok[c] – Kirsi-Marja Lonkila[b] – Malve Olli[d] – Jukka Similä[e] – Mikael Sokero[b] – Marianne Zandersen[f]
[a] University of Helsinki, Finland
[b] Demos Helsinki, Finland
[c] Wageningen University & Research, The Netherlands
[d] Finnish Environmental Institute, Finland
[e] University of Lapland, Finland
[f] Department of Environmental Science & Interdisciplinary Centre for Climate Change (iCLIMATE), Aarhus University, Denmark

This paper offers an approach to long-term planning for an industrial sector that is sensitive to climate change, the state of adjacent natural environments and the associated socioeconomic developments. The paper combines exploratory and target-seeking scenarios to understand the future challenges of nature-based blue tourism under alternative global futures, and to develop sequences of actions to accomplish the best achievable future outcome for blue tourism at a local scale. We detail a bottom-up approach to scenario development for tourism, with local stakeholders developing local scenarios within the boundaries provided by the locally extended Shared Socioeconomic Pathways (SSPs), widely used in climate research.
As a demonstration of the approach, a group of invited stakeholders developed locally extended scenario narratives and the adaptation plans for blue tourism for coastal areas surrounding the Helsinki metropolitan area in Finland. The co-creation process yielded several recommendations for immediate action concerning protection of the coastal environments, land use planning, internal communication with the sector and coordinated monitoring of economic, ecological, social and cultural sustainability indicators. The approach offers a way forward for systematically assessing the future risks and opportunities that a changing environment and society create for blue tourism.

Keywords: *Adaptation Planning, Knowledge Co-Creation, Nature-Based Tourism, Sustainability Transition*

Futures, Forests, and Fortunes: Searching for a New Paradigm of Ownership

McBride, Mina
A Fortune 100 Company, USA

In 2008, Ecuador became the first country in the world to recognize the Rights of Nature in its national constitution. That move represented a shift in the conversation about the personhood of nature which, at that point, had taken place for over 40 years. Since then, New Zealand, Sweden, India, the United States, and others have worked through their legal systems to determine what rights should be accorded to nature. The courts and governments of nations struggle to balance Western ideals of man's control over nature with the very real consequences we collectively face when damage is done to natural resources.

Foresight provides excellent tools and methodologies for examining the implications of the many plausible alternative futures. The decision to recognize (or not) the legal rights of our forests, lakes, and ecosystems is connected to wider debates about who has the rights of ownership and what entitlements do (and should) those rights afford. The questions are as much about sustainability as they are about economics. This presentation will explore where the Rights of Nature movement has been, where it seems to be going, and why, beyond the protection of natural landscapes, the answers matter to us all.

Keywords: *Personhood, Rights of Nature, Future of Ownership, Ecocentric Law, Ethics, Economics*

Logics of Eco-Social Regeneration

Shaw, Morgan
University of Turku, Finland

The contemporary environmental crises of the Anthropocene involve an array of ongoing processes that are damaging ecological and social circumstances around the world. However, amidst these processes of harm, many communities are also experimenting with ways of bringing new or renewed life to humans and nonhumans inhabiting damaged eco-social circumstances. In the process of doing so, these groups develop anticipatory collective understandings of more desirable futures that might be brought about through this work of regeneration, which this paper will refer to as future imaginaries of regeneration. This paper explores the diverse logics of future imaginaries of regeneration across a variety of contexts. It does this by examining how these future imaginaries are embodied in projects of eco-social intervention, deliberate human efforts to improve the environmental conditions of specific places through coordinated action.

A set of distinct logics of regeneration was identified through diffractive reading of 94 feature-length news articles published in English-language newspapers and magazines from 2000-2021. Each article describes one or more projects of eco-social intervention aiming to improve some aspect of a degraded eco-social situation. These projects were read through a selected set of pre-existing theoretical concepts to elicit meaningful differences in how regeneration "works" in each of them.

The findings suggest that different contextualized imaginaries of regeneration exhibit a variety of logics of regeneration as a process. Thus, the term regeneration can stand for many different aspirations potentially achievable by very different means, each with its own ethical implications and dilemmas. Rather than representing desirable future states, future imaginaries of regeneration create a shared space for weaving together practices and relations that it is hoped will generate as-yet-undetermined future possibilities for flourishing life.

Keywords: *Regeneration, Future Imaginaries, More-Than-Human Futures*

Understanding the Challenges of Futures Uncertainties and Developing Robust Paths

Time: Friday 17 June at 9:00-10:30
Room: Lumi
Chair: Leena Jokinen

Scenarios in National Climate Policy Planning. How Are the Scenarios Formulated and Perceived?

Aro, Kalle[a] – Ville Lauttamäki[b] – Aakkula Jyrki[a] – Vilja Varho[a] – Pasi Rikkonen[a]
[a] Natural Resources Institute Finland (Luke), Finland
[b] Finland Futures Research Centre, Finland

Scenarios have become a widely accepted mean to depict and evaluate effectiveness of national climate policies. In Finland, scenarios have been used as backbone for climate policy planning since the first Energy and Climate Strategy, published in 2001. While the use of scenarios has been cemented in the policy making, only little interest has been given to the process where scenarios are conceptualized and formulated.

This study explores the scenario building process of the Finnish Medium-term Climate Change Policy Plan (KAISU) in 2016 - 2017. We interviewed 18 individuals from research, administration, and policy-making domains, who were involved in the scenario process. The main aims for the study were to: 1) describe the scenario process from the planning to the publication and public reception, and 2) collect and compare participants' perceptions and experiences regarding the creation and use of the scenarios. The interviews were transcribed and analyzed via Qualitative Content Analysis in a bottom-up manner.

The results show that scenarios for KAISU plan were a result of iterative collaboration between research and modelling groups, public officials, and political actors. The main part of the process evolved around formulation of the policy scenario WAM (with additional measures), which aimed to portray the policy measures by which Finland could achieve its EU obligations in the Effort Sharing Sector. This meant that measures in transport, residental heating and agriculture were especially in focus. Research groups and public officials were tasked with a creation of sectorial plans, which would be combined to form a coherent policy scenario. Political actors set more general guidelines for the scenarios and resolved conflicts regarding the allocation of emission reduction targets between sectors. The decision-making power was thus held mostly by the ministries and political actors, whereas the role of the official working group was more about maintaining coordination.

In general, the results showed that the participants viewed the scenario process rather successful, despite the novel cross-sectorial approach. However, coordination between the participants and different processes was still found lacking, making the complex process hard to follow. Additionally, transparency regarding the sectorial plans and models used would help to better assess the uncertainties embedded in the scenarios. The number of scenarios (just one that deviated from BAU) faced some criticism, but embracing more uncertainties might be difficult from the perspective on implementing scenarios in a decision-making process.

Keywords: *Climate Policy, Finland, Interviews, Policy Formulation and Planning, Scenarios*

Problematizing Democratic Concerns for Long-Term Future-Proofing Regulation: Foresight and Future Generations in Law-Making

Knudsen, Mikkel – Toni Ahlqvist – Juha Kaskinen - Amos Taylor
Finland Futures Research Centre, Finland

The project Foresight and future generations in law-making (FORGE) examines and benchmarks existing foresight models and foresight systems to assess how fit they are for taking the perspective of future generations into account.

Better considerations of the future generations, who by definition cannot make their voices heard in traditional democratic processes, has been argued to lead to more democratic as well as more sustainable outcomes. Addressing future generations is thus a key element in a societal shift towards addressing planetary futures.
As the project shows, not all foresight models are equally adept at addressing this element. Furthermore, there can be notions that long-term future-proofing of regulation could be at odds with some democratic ideals.
The presentation presents the preliminary results of the FORGE-project, funded by the Finnish Prime Minister's Office January-September2022, and provides a framework for discussing these issues important for democracy, sustainability, and futures research.

Keywords: *Future Generations, Long-Term Foresight, Anticipatory Governance*

Evaluating the Impact of a Futures Thinking Method

Halonen, Minna – Kirsi Hyyntinen – Sofi Kurki
VTT Technical Research Centre of Finland, Finland

There is a growing interest to improve the impact of diverse foresight and futures thinking efforts e.g. by integrating foresight better with decision-making processes and building futures thinking capabilities in organisations and in the society. Therefore, viable approaches for making the impact visible for stakeholders and boosting the impact of diverse futures thinking efforts is much needed. We propose a comprehensive impact evaluation approach for tracking changes in agency towards futures. The developed method consists of 1) multi-criteria framework (Hyytinen, Saari & Elg 2019) which unfolds impacts into individual, organizational and societal dimensions of agency, as well as their enablers and barriers, and 2) participatory evaluation process to support multi-voiced evaluation and

learning. The evaluation process combines principles of participatory evaluation, external evaluation and organizational learning (Patton, 2011; Saari and Kallio 2011).

The framework was implemented to evaluate the impact of Futures Frequency workshop method developed by SITRA for imagining and building preferred futures. The workshop method combines future-oriented thinking with change-making and aims at stimulating the workshop participants to think about futures that are worth imagining and striving for.

We gathered research material with mixed approach via surveys, interviews, observation and evaluation workshops. In particular, we developed and implemented a self-evaluation tool to track changes in participants' self-efficacy beliefs regarding their capability to think, imagine and influence the future. In addition, we involved a number of actors who had utilized or developed the method to assess the impact and effectiveness of the method in interactive evaluation workshops.

In this presentation, we discuss the comprehensive impact evaluation framework and the methods utilized, as well as the evaluation results obtained from the impact evaluation of the Futures Frequency workshop method.

***Keywords**: Impact Evaluation, Methods, Futures Thinking, Futures Agency*

Youth Visions on Sustainable Food in Finland 2050

Varho, Vilja[a] – Minna Kaljonen[b] – Roosa Ritola[b] – Kirsi Sonck-Rautsio[c] – Anni Savikurki[d]
[a] Natural Resources Institute Finland (Luke), Finland
[b] Finnish Environment Institute, Finland
[c] Åbo Akademi University, Finland
[d] E2 Research, Finland

Building a more sustainable food systems requires fresh visions and transformative thinking. Many of the current sustainability problems are so intertwined that they cannot be solved by developing or optimizing the system to function just a bit better. Foresight studies and exploration of future visions can play a crucial role in supporting transformative thinking and action. Experts and researchers have their suggestions, but what are the views of consumers? More specifically, what do Finnish young people think about the sustainable food system, of matters that affect their everyday lives for decades to come?

We asked ca. 120 high school students (aged 15-18) in five different locations in Finland to envision how sustainable food (system) will look like in 2050. We analysed the visions with the help of qualitative content analysis and PESTEC framework. PESTEC stands for policy, economy, society, technology, environment, and culture. We identified different future states of different variables, such as eating meat, price of food, food industry, delivery and logistics, raw materials, production technologies, and climate change. The results were summarized in a futures table and reorganized so that each column represented a single future. The results were further written out as six future images: Slow change, Domestic and local production, Conscious consumer, Regulation, Technology and Dystopia.

The respondents paid a lot of attention to diet changes, particularly to reduction of meat consumption. The youth value the social and cultural meaning of food highly. They were aware of recent concerns about single-use plastic packaging and considered cardboard and other renewable packaging materials to be more sustainable, envisioning also reuse and package reduction possibilities. The results indicate that core values of food system functioning are in flux. The alternative visions expressed by the youth are a prominent way to explore them further.

***Keywords**: Food System, Youth, Climate Change, Dietary Change, Sustainability*

Workshop

Planetary Health as a Foundation for Sustainable Future

Time: Friday 17 June at 9:00-10:30
Room: Virtalähde
Facilitator: Charlotta Holmström

Holmström, Charlotta[a] – Leena Helenius[a] – Anni Kaikko[a] – Mikaela Grotenfelt-Enegren[a]– Kristiina Patja[b] – Jaana Laisi[a]
[a] HUMUS project, University of Helsinki, Finland
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Humans are a part of nature, and our health, as well as the survival of our species, are dependent on functional ecosystems. Delaying action on sustainability crisis means losses of species and ecosystems – and losing them means losing important constituents of our health and prosperity (Barnosky et al. 2014, 84; IPBES 2019, 22; Haahtela 2019; WHO & SCBD 2015, 21, 228; Hackett et al. 2020). During Covid-19 pandemic, consequences of environmental degradation are becoming progressively more visible to civil society and the critical role of healthcare professionals has become evident.

Thus the sustainability crisis is a serious health crisis and the health care sector, like other sectors in society, have an important role in pursuing sustainability. These involve maintaining the current and future quality of healthcare and systems supporting it, through balancing environmental, social, and financial constraints (Whitmee et al. 2015). As an emergency call, the Rockefeller Foundation-Lancet Commission on Planetary Health published a report in 2015 demanding urgent action for safeguarding human health and the degrading ecosystems constituting it. They raised the concept of planetary health: "the health of human civilization and the state of the natural systems on which it depends". It is a transdisciplinary and solutions-oriented approach which emphasizes the connection between Earth's natural systems and human wellbeing (Planetary Health Alliance).

In this workshop, we will build a system model of the future society where planetary health is regarded as the foundation of human wellbeing. As a methods, we use a generalistic-holistic-holarchistic (GHH) - framework (Holmström 2019, Willamo et al. 2018) and backcasting to outline the role of different actors and the steps needed to support a systemic change towards planetary health. This transdisciplinary workshop is organized by researchers of HUMUS - Healthcare for Sustainable Future -project, which brings deeper understanding to the connections between human health and the environment.

***Keywords**: Planetary Health, Planetary Wellbeing, Sustainability, Systemic Change, Health Promotion*

(HYBRID) Special Session

Imaginative Transformations upon Sustainable Futures

Time: Friday 17 June at 9:00-10:30
Room: Aavameri
Facilitators: Sanna Ketonen-Oksi and Minna Vigren

Introduction to the Session:
The Roles of Imagination and Aspiration in Building Socially, Culturally, And Ecologically Sustainable Future(s)

Ketonen-Oksi, Sanna[a] – Minna Vigren[b]
[a] Laurea UAS, Finland
[b] University of Helsinki, Finland

Based on the generally identified need to broaden the debate on building more ecologically, culturally, and socially sustainable futures (Joutsenvirta and Salonen, 2020; Vataja and Dufva, 2021), what is now urgently needed, is to bring forth new approaches, methods, and tools that will help us to transform the values and belief systems based on which we create our visions and/or images of the future (Milojevic and Inayatullah, 2015; Schultz, 2012).

That being said, in this introduction, we will pave the way for the session presenters, and the discussions at the end of the session by provoking the participants to reconsider their existing perceptions about the roles and uses of imagination, aspiration, and speculation in building alternative futures, either individually or collectively. Most importantly, we will bring forth the importance of agency creation as a means to challenge the dominant normative hierarchies about the future.

***Keywords**: Imagination, Aspiration, Agency Creation, Futures Literacy*

Cultural Sustainability Transformation and Ethical Tensions

Siivonen, Katriina
Finland Futures Research Centre, Finland

Ecological problems are decreasing resilience of the living environments and destroying prerequisites for well-being for humans and many other living beings (Steffen et al. 2015). The notion of leverage points direct actions to societal structures through which sustainability transformation could be most effective (Meadows 1999). Abson et al. emphasize that policy interventions typically do not address the deep level leverage points, and thus partly fails in their target of sustainability transformation. They claim that in order to reach the transformation, there is a need to operate on the deepest levels of leverage points, which consist of worldviews, human-nature relationships, and from them arising goals, actions, habits, and practices. (Abson et al. 2017.) These are basic intangible cultural expressions.

Thus, it is obvious, that as a part of global sustainability transformation, we need cultural sustainability transformation (Siivonen 2022; see also Huttunen et al. 2021). In practice it means changes in our intangible cultural expressions, connected to the tangible human made environment and nature. In this context we meet tensions between different ethical statements, which need to be solved. A combination of futures research, sustainability science, and cultural heritage research can give some possible ethical solutions.

The core of cultural sustainability transformation can be seen as the right of people to take part in and have an impact on the own culture or on the cultural change in the own cultural environment together with other people. However, this does not guarantee the direction of the cultural change towards sustainability of any dimension. In spite of this, the possibility to take part and have an impact can be seen as a condition of cultural sustainability transformation.

As a further solution, I suggest heritage futures, based on intangible cultural heritage, to tools for cultural sustainability transformation. Heritage Futures are intentionally co-created human-nature relationships including new types of meanings and actions which produce sustainable futures. They can be used as a means to co-direct cultural transformation towards a more sustainable world, but only when conducted in a participatory process.

***Keywords:** Heritage Futures, Ethical Tensions, Intangible Cultural Heritage, Leverage Points, Planetary Wellbeing, Cultural Sustainability Transformation*

Art and Science Collaboration for More Sustainable Futures

Tuittila, Satu
University of Jyväskylä, Finland

Art and science collaboration for more sustainable futures
A case example presentation of art and science collaboration in Katoava luonto – research project.

Humanity is facing severe ecological problems. We have a lot of data and scientific information about the facts but the communication and understanding of the urgency seems to be difficult. Collaboration between art and science is one possibility to reach and engage wider audiences to ecological topics and particularly to make an emotional impact which can promote change.

With two case-examples from University of Jyväskylä's Department of Biological and Environmental Science based Katoava luonto – research project art and science collaboration possibilities are introduced and examined. The case

examples are presented with video extracts and photography. The key observations of the collaboration between biologists and performing artist will be shared including challenges, benefits and learning experiences.
"Small & Significant" is a performance project about important pollinators targeting young audiences. Project includes dance performance, "Buzzer gallery" dance video, information materials and elementary school workshops. With dance it is possible to contemplate the subject with play and humor. We also encourage the children to study nature and to make small-scale supportive actions in their close environment.

(Hand program presenting the project, working group and sponsors in the link:
https://www.jyu.fi/science/fi/bioenv/tutkimus/luonnonvarat/katoavaluonto/taide/kasiohjelmatekstit.pdf)
"Vähin äänin" is a performance about biodiversity loss and our possibilities to support the nature. The performance combines contemporary dance, choral and rap singing with conservation biology. With "Vähin äänin" – project "science cafes" after the performances were organized for scientific communication and audience engagement as well as a separate school workshops tour for senior high school students in Mid-Finland. The project is created in collaboration with Off/Balance Dance group, Jyväskylä City Theatre and Ruamjai Choir.

(Hand program presenting the project, working group and sponsors in the link:
https://issuu.com/universityofjyvaskyl/docs/vahin_aanin_kasiohjelma_manillateatterissa)
Katoava Luonto -research project (2018-2021) is focusing on ecological compensation through citizen actions and is supported by Kone foundation.

***Keywords**: Art and Science Collaboration, Citizen Engagement*

How to Develop Our Abilities to Imagine Transformative, More Socially and Ecologically Sustainable Futures? An Integrative Literature Review

Ketonen-Oksi, Sanna[a] – Minna Vigren[b]
[a] Laurea UAS, Finland
[b] University of Helsinki, Finland

In futures research, there are three essential approaches toward the future. When forecasting, the focus is on making predictions about the future, based on data and knowledge from the past. In foresight, the aim is to understand why things are changing, and what are the alternative new directions and trends that lead us towards the future. Finally, when it comes to anticipation, it is about becoming conscious of the ways how the future is being built in the present. Each of these approaches are needed, but for different purposes. Most importantly, they have significant impacts on the both individual and organisational levels to renew and respond to the challenges of the future.

To create alternative images of the future – what does it actually mean? How can we imagine the future, and how reliable are these imaginary visions of the future? What kinds of methodological approaches and expertise are needed to enrich our imagination and what are the biggest pitfalls of these methods? To what extent can the imagination be thought / assumed to be an individual and to what extent a collective view of how we perceive the future in our communities?

In our presentation, we aim to contribute to the understanding of values and belief systems based on which we build our imaginary visions of the future. We will tackle some of the methodological challenges that prevent us to imagine new, transformative ways to create better futures for all. Besides discussing the main results of our work-in-progress, that is, an integrative literature review on methods that foster our abilities to imagine alternative futures, combining research from different disciplines, we will point out and provoke critical debate regarding the inconsistencies in the existing method literature.

***Keywords:** Future, Anticipation, Imagination, Aspiration, Alternative Futures, Agency Creation*

SESSION V at 10:45–12:00

Future of Mobility and Lifestyle in Relation to Sustainability, Health and Wellbeing

Time: Friday 17 June at 10:45-12:00
Room: Pisara
Chair: Juha Kaskinen

Does Free-Fair Public Transport Replace Car Travelling with Bus? A Cross-Sectional Comparison of 10-12 Year Old Children's Travel Patterns Between the Cities of Mikkeli and Kouvola

Pesola, Arto J.[a] – Kerttu Hakala[b] – Pirjo Hakala[a] – Päivi Berg[c] – Tiina Rinne[a, d]
[a] Active Life Lab, South-Eastern Finland University of Applied Sciences, Finland
[b] City of Mikkeli, Finland
[c] Juvenia – Youth Research and Development Centre, South-Eastern Finland University of Applied Sciences, Mikkeli, Finland
[d] Department of Built Environment, Aalto University, Espoo, Finland

Free-fair transport policies aim to promote public transport use instead of relying on private cars. In the city of Mikkeli, Finland, all school children have been provided an option for fair-free public transport since 2017. Our aim is to investigate children's bus and car travel patterns during the free-fair experiment and to discuss potential effects on transport-related carbon dioxide emissions.

Children were recruited from primary school grades 4-6 in 21 participating schools, located in 11 neighborhood pairs from Mikkeli (free-fair bus) and Kouvola (no free-fair bus, reference). Children marked all places they visited the previous week, visit frequency, and travel modes into a participatory mapping survey (public participatory GIS) during a lesson.

Children living in Mikkeli were travelling by bus more frequently as compared to those living in Kouvola. A total of 23.3% of respondents in Mikkeli had more than 5 bus trips per week, as compared to 13.0% in Kouvola ($p<0.001$). There were no differences in car travel (Mikkeli 26.4%, Kouvola 29.6% made more than 5 car trips per week, $p=0.167$). In both cities, relative car and bus travel frequency was highest in rural zone, followed by suburban zone and urban zone ($p<0.048$). However, because of greater number of children living on suburban zone, the overall number of car trips was greatest on the suburban zone. The overall number of bus trips was greatest on rural zone. Bus use was more frequent in Mikkeli vs. Kouvola only within suburban zone ($p<0.001$), but there were no differences within urban zone or rural zone ($p>0.307$). However, children in Kouvola were travelling by car more frequently within urban zone, as compared to those in Mikkeli ($p=0.039$).

Free-fair transport is associated with a more frequent bus use overall, driven by differences within suburban zone. Car travel was lower in Mikkeli vs. in Kouvola within urban zone, but there was no overall difference in car travel between the cities. To reduce carbon dioxide emissions, bus travelling should replace private car use. We will discuss actions to further promote public transport use instead of car from the perspective of the observed regional differences, bus accessibility metrics, reasons for bus and car use, and parent's car use behaviour based on these local results as well as national data. Further, we will try to estimate the potential in reducing carbon emissions in Mikkeli, if chauffeuring could be replaced with taking the bus.

Keywords: *Travel Policy, Carbon Emissions, Urban, Rural, Suburban, PPGIS*

Cycling Futures in Finland: Modelling Propensity to Cycle

Suomalainen, Emilia – Marko Tainio
Finnish Environment Institute, Finland

Sustainable mobility is one of the key components of sustainable future societies. Active travel, or cycling and walking, plays a central role in sustainable mobility. In addition to lowering greenhouse gas and air pollutant emissions as well as bringing other environmental gains, active travel also has significant health benefits. Sustainable and healthy modes of transport such as walking and cycling therefore need to take precedence over motorised transport

and especially private cars. For these reasons, we have chosen to take a close look at cycling in the CLIMATE NUDGE project, one of the aims of which is to decrease greenhouse gas emissions from transport. In this context, we have modelled the cycling behaviour of commuters on their way to work as well as that of children travelling to school in Finland. The propensity to cycle has been modelled using a logistic regression model fitted to data from the Finnish National Travel Survey.

The objective of the model is to quantify how trip distance, hilliness, and weather conditions affect cycling. In addition to describing current cycling habits, the purpose of this modelling work is to illustrate how various scenarios or cycling futures might look like: what trips are most likely to get cycled if people cycled more, how car use might decrease, and what the emissions impact would be at Finnish scale. The model notably allows us to see how a scenario where the targets of Finland's Energy and Climate Strategy are met (with a 30% increase in cycling) might look like or what would happen emissions-wise if people all over Finland cycled as much as those in the Oulu region. The cycling levels in the Oulu region are especially remarkable in the winter as snow cover has much less impact there than in the rest of Finland. While the weather conditions have a clear impact on cycling levels in Finland, the Oulu example illustrates how these conditions can be overcome. It is be possible travel more by bicycle in Finland, and this would bring measurable emissions and health benefits.

Keywords: *Sustainable Mobility, Cycling, Active Travel, Scenario, Regression Model, Emissions*

How Nature Supports Adolescents' Well-Being – A Study in the City of Lahti, Finland

Puhakka, Riikka[a] – Katherine Irvine[b] – Sofia Kaipainen[c]
[a] University of Helsinki, Finland
[b] The James Hutton Institute, Scotland, UK
[c] University of Helsinki, Finland

The concept of planetary health acknowledges the complex and inextricable links between human health and the health of natural systems. In urbanized societies, however, possibilities for everyday connection with diverse natural systems has decreased, and young people are leading increasingly sedentary and technologically oriented lives. This has caused concern over the alienation from nature.

Meanwhile, it is recognized that interacting with nature promotes our psychological, physiological and social well-being and health. Based on previous studies, contact with nature increases self-esteem and mood, relieves stress, and improves the ability to concentrate and perform mentally challenging tasks. Natural settings can encourage exercise, and exposure to a diverse environmental microbiota enhances immune regulation. Shared nature experiences enable social interaction, strengthen bonds within families or communities, and promote social cohesion. Nature connection is also positively associated with stronger pro-environmentalism.

This study explores adolescents' participation in outdoor recreation and their well-being experiences of and relationships with nature in the city of Lahti, Finland. The study is based on survey data collected from students in 7–9th grades (N=1,121) in autumn 2020. The online survey was delivered to five schools.

The results showed that most adolescents, especially girls, spent time in nearby natural settings several times a week. However, interest in nature and outdoor recreation slightly diminished during secondary school. Participation in outdoor recreation was also associated with socio-economic factors: adolescents from well-off and educated families, and those feeling healthy and satisfied with life spent time in natural environments more often than others. Most of the participants perceived their well-being to increase as a result of being in nature. These adolescents felt that they restored in nature, and they experienced positive emotions often and negative emotions rarely in nature. Multisensory experiences, such as visual elements, smells and sounds of nature, were important for the well-being of the adolescents.

Based on the results, we highlight the importance of contact with nature for well-being during adolescence. Finding ways to support engagement with nature during childhood and adolescence is necessary to foster a lifelong nature connection and experiences of well-being in future. For example in Lahti region, a new 10-year health and environment programme "Nature Step to Health" promotes strengthening our connection with nature and changing our lifestyle.

Keywords*: Adolescents, Well-being, Health, Nature, Outdoor Recreation*

Multidisciplinary used Foresight Methodology – Exemplary in the Fields of Renewable Energy transition, Healthcare and Neurotechnology

Time: Friday 17 June at 10:45–12:00
Room: Lumi
Chair: Ville Lauttamäki

Weak Signals and Wild Card Analyses to Support the Global and Regional Shared Socioeconomic Pathways in the Finnish Offshore Wind Industry

Jenkins, Jamie[a] – Maria Malho[b] – Kari Hyytiäinen[a]
[a] University of Helsinki, Finland
[b] Demos Helsinki, Finland

Offshore wind development has seen growing interest. Adapting to potential future changes and ensuring a balanced development of offshore wind requires long-term planning and discussion. The aim of this paper is to identify and explore plausible future incidents that have low probability of occurrence, but potentially have high impact and strategic consequences for society and the energy sector.

Using a participatory expert workshop, we identify weak signals and wild card events that could impact the Finnish marine space and the offshore wind industry. Weak signals are often described as first early indicators of change. We identify several weak signals and categorise these according to their impact on economic, ecological, and social sustainability. These results can be used to make better informed decisions about the impact that offshore development may have on different areas of sustainability and seize emerging opportunities.

Wild cards are low probability but high impact events. We create several varied events and explore how these may impact the offshore wind industry and the global Shared Socioeconomic Pathways (SSP). The SSP framework is widely applied across different research topics and describe 5 distinct, equally plausible, global level developments. We utilise wild card analyses to strengthen and support the SSP scenario framework. Our results can contribute to richer, more detailed narratives at the regional scale. We account for unexpected, high impact events that could drastically alter offshore development trajectories and contribute to strategic decision making and policy planning.

Keywords: *Wild Cards, Weak Signals, Scenario Narratives, Renewable Energy Transition, Participatory Planning*

Mapping and Assessing the Social Implications of Sociotechnical Imaginaries of Neurotechnology in the Everyday Life of Futures As Portrayed In Science, Industry and Fiction

Campos Muñiz, Daniel[a] – Claudia Garduño García[a] - Gloria Adriana Mendoza Franco[b]
[a] Industrial Design Postgraduate Programme, Universidad Nacional Autónoma de México, Mexico
[b] School of Science, Aalto University, Finland

Interest in neuroscience and neurotechnology has increased in the past two decades, both in the industry and in academia. This boom is, in part, due to technological advances that speed up the study of the nervous system phenomena. What has become evident is that we are facing a future where neurotechnology applications become part of everyday life.

Large projects, like The Brain Research Through Advancing Innovative Neurotechnologies® (BRAIN) Initiative, Neuralink or Kernel, have also drawn the attention of the press, resulting in more presence in public media of novel applications like brain-to-brain interfaces and cognitive enhancement. In the light of this growing interest, and the impossibility of predicting the future, it is pertinent to explore where we are headed.

In this study, we collected a series of portrayals of neurotechnology applications in the futures of everyday life. This collection included academic, industrial, and fictional works where a future application of neurotechnology was proposed or portrayed.

In order to analyze the kind of neurotechnology applications described by each case, we used the categorization of potential uses (diagnosis; therapy; enhancement; recreation; research and learning; governance; and law enforcement/control) presented in the "Issues in Neurotechnology Governance Report" by the OECD in 2018.

From this analysis, we selected one application and evaluated its social implications based on previous work by Justine Johnstone and Yingqin Zheng & Bernd Carsten Stahl, who have applied the capability approach proposed by Amartya Sen and Martha Nussbaum to the development of frameworks for the assessment of the ethical and justice dimension in the development of emerging technologies.

This exploratory review brings a big-picture perspective of the sociotechnical imaginary of future neurotechnology applications. By evaluating its social implications, this proposal could be used to critically assess images of the futures we are aiming to build.

Keywords: *Neurotechnology Futures, Sociotechnical Imaginaries, Capability Approach, Justice*

Developing a Multidisciplinary Foresight Service in the University of Turku

Villman, Tero – Toni Ahlqvist – Keijo Koskinen – Maria Höyssä – Amos Taylor
Finland Futures Research Centre, University of Turku, Finland

The University of Turku is developing a multidisciplinary foresight service called Futures Knowledge Distillery. According to the Oxford Dictionary of English, distillation refers to "the extraction of the essential meaning or most important aspects of something". In the context of futures research and foresight, we define distillation as a collaborative goal-oriented way of working that creates new futures knowledge and value from it. The Futures Knowledge Distillery combines the broad experience base of the Finland Futures Research Center in futures research and strategic foresight with the subject matter expertise from all of the university faculties to support the practical foresight work of the university and its stakeholders. More broadly, the service distils futures knowledge and practical experience gained in decades of foresight work for the business community and the society as a whole, while simultaneously developing the impact of foresight. In this paper, we present the foundations of the Futures Knowledge Distillery and share examples of work conducted and insights into lessons learned. In addition, we analyse the multidisciplinary foresight service as a case study to illustrate the process and varied dynamics involved when developing such a service concept in a specific university setting.

Keywords*: Multidisciplinary, Foresight, Service, Futures Knowledge, Distillery*

(HYBRID) Workshop

Friction Wheel

Time: Friday 17 June at 10:45-12:00
Room: Virtalähde
Facilitators: Maya Van Leemput and Mushon Zer-Aviv

Van Leemput, Maya[a] – Mushon Zer-Aviv[b]
[a] Open Time, Erasmus Brussels University, Belgium
[b] Shenkar School of Engineering and Design, Israel

With rising inequalities, political polarization, a crisis of reality, a global pandemic with no end at sight, a looming climate catastrophe, the need for systemic change is glaringly obvious in today's world. These systemic challenges put pressure on choice oriented behaviors that require insight into when and where the most fruitful opportunities for action exist.

A traditional futures tool such as the futures wheel, helps see the various causal relationships at play in relation to a selected potential action, trend or event. As Jerome Glenn (2009, p10) explains, it can be used for 'exploring the range of potential consequences of components or elements of the system and to check for completeness of relations among the systems' elements. Its suitability for assessing possible impacts of proposed actions, is considered an advantage for strategic planning. The backcasting wheel (Bengston, 2020) focusses more closely on setting out a pathway towards a chosen preferred future and identifying milestones along that pathway that can be used to track progress.

While these tools offer useful guidelines for mapping scenario elements, they do not explicitly indicate hierarchies of impact or opportunities for action. In this workshop we will test a new tool which is still under development. The

'Friction Wheel' is intended to enable a participatory process for identifying potentially powerful points of intervention for achieving change towards a preferred future. This tool builds on and expands the techniques and goals of the futures wheel and the backcasting wheel.

The friction wheel process asks where to act and intervene for the greatest possible effect. It maps not a single pathway but a range of causal chains that can simultaneously affect the preferred change. It takes account not only of direct and indirect causal relationships but also of the friction that enables the flow from cause to consequence. It focuses on those points where such friction can be eliminated, manipulated or generated towards a commonly defined preferred possible outcome.

Bengston , David N, Westphal, Lynne M. and Dockry, Michael J. (2020) Back from the Future: The Backcasting Wheel for Mapping a Pathway to a Preferred Future. In: World Futures Review, Vol. 12(3) 270–278.

Glenn, J. (2009) the Futures Wheel. In: Glenn, J. and Theodore J. Gordon. Futures Research Methodology Version 3.0. Millennium Project. At the same time, in the field of science and technology research, a number of approaches have emerged that call into question continuous renewal, development, innovation, growth and adaptation. Examples of these are e.g. terrestrial thinking (Latour, 2018) and the broken world thinking (Jackson, 2013), which take a strong stance on the climate change debate. The general interest on these topics is steadily growing.

All-in-all, this session is about bringing forth the number of roles that imagination and aspiration can play in building socially, culturally, and ecologically sustainable future(s), either from individual, organisational or from a community perspective.

***Keywords**: Friction, Flow, Mapping, Action, Impact*

(HYBRID) Special Session

Dutch Future Elections; the Future Belongs to Everyone

Time: Friday 17 June at 10: 45–12:00
Room: Aavameri
Chair: Linda Hofman

Hofman, Linda[a] – Tessa Cramer[a] – Lotte van Oosterhout[a] – Merlijn Twaalfhoven[b]
[a] Fontys, The Netherlands
[b] Turn Club, The Netherlands

Imagination, perspective, and footing in a time of turmoil and despair. The pandemic and all the economic and social setbacks it has caused make us despondent. That is why 'The Dutch futures election' are looking for a common perspective on the future. To get people more involved in local politics again and to give them a view on the long term, the election of the future is about other questions. 'What is a good world?' and 'How can you move towards it?' By talking with citizens, collecting stories and connecting dreams with concrete possibilities, the ways to a world we want will be explored.

The Future belongs to everyone

It is the mission of **Tessa Cramer, Applied Professor 'Designing the Future Fontys ACE** to offer as many people as possible the space to make the future an active part of their lives. What does it take to actively relate to the future? Within the field of futures studies, there is a proliferation of theories and methods, which often made her lose sight of the wood for the trees. She came to a sobering conclusion: it is all about daring to ask very basic questions. Questions that are apparently so simple that they are often skipped. Who do we want to be? What matters? Who is at the table when we talk about the future? She noticed that when talking about the future or the long term, there is a tendency to focus on new complicated topics, technologies, and threats. As a result, in many cases, the future remains a fiction, a far cry from the show.

About the project 'Dutch futures election'

On 16 March 2022, the same day as the municipal council elections, the Future Election was held. All inhabitants, including children, were able to vote for the Netherlands of 2050. On 25 September, the Future Election organise a Future Council in every municipality in the Netherlands, where decisions will be taken for the long term. The Future Elections is organized by the Turn Club, a partnership of art professionals and bridge builders who tackle pressing

issues with an artist's mindset. Fontys Academy for Creative Economy connects to this initiative with the research group Designing the Future together with a group of students from the bachelor program 'Trend research and Concept realization in lifestyle'.

"What makes the place where you live a good place?" this question is asked to all kinds of people to share their idea of a good world. The first stage of the project was to listen to citizens' stories and experiences and catch them into narratives and imaginations that will bring their dreams and ideas to the surface. The plan for the second half of this project was to focus on visualizing the encounters the students have and the different insights they will get from these encounters. But they jumped into another very important insight; it is not only about the absence of focus and awareness of long-term vision it is also about lack of (youth) involvement in democracy.

(Youth) involvement in democracy

On 16 March 2022, were the Dutch municipal council elections. Nationally the Turnout in municipal elections was dramatic. It appears that only 50.4 percent of eligible voters went to the polls. This was an all-time low. In the residence of Fontys Academy for Creative Economy, Tilburg the turnout at the Tilburg municipal elections was even worse: just over 40 percent. Historically, Tilburg has a low turnout in the municipal elections. Four years ago, the turnout was also low at 45.3 percent, as in 2014, when Tilburg had the lowest turnout at 44 percent. In Tilburg, 182,574 residents are entitled to vote this year. Of these, 3620 may fill in their ballot paper for the first time this year. The municipality of Tilburg had therefore campaigned in recent weeks to attract more young people in particular to the polls. But that didn't work out. How can we help youth de-fictionalize the future? To get them more involved in local politics again and to make them actively relate to the long term.

Program

10.45 Entrance
11.00 Introduction:
Linda Hofman MSc., futures researcher and lecturer Fontys ACE
Offline - Turku
11.05 The Future belongs to everyone – Tessa Cramer Ph.D., Applied professor Designing the Future
Online - Amsterdam
11.20 About the Dutch Futures Election – the project
Linda Hofman MSc
Offline - Turku
11.30 (Youth) involvement in democracy –
Lotte van Oosterhout, student coach &
Students
Online – P8 Tilburg
11.45 Q&A
12.00 Closure

Tessa Cramer, futurist and scholar is the leading lector (chair) of the knowledge centre Creative Economy of Fontys, University of Applied Science, the Netherlands. She unites lecturers, researchers, and partners to guide, enhance and be fundamental change with the common ground of artistic and creative approaches and working on a new creative economy. As an applied professor 'designing the future' she translates the futurist mindset for a broader public. Together with her research group, she explores topics like uncertainty, creativity, attention, and the perception of spending time.

About:

Future elections: https://toekomstverkiezing.nl/
Initiated and organized by the Turnclub:: https://turnclub.org/
Supported by many others.

Fontys Academy for Creative Economy: https://fontys.edu/Fontys-Academy-for-the-Creative-Economy.htm

***Keywords**: Elections, Agency, Creative Economy, Citizens Change, Designing Futures, Good Ancestors*

The Future Belongs to All of Us

Cramer, Tessa
Fontys, The Netherlands

It is the mission of **Tessa Cramer, professor Designing the Future at Fontys Academy for the Creative Economy**, is to help others make the future an active part of their daily lives. She questions: what does it take to actively relate to the future? There are many theories and methods that support and enhance our ability to think about the future. In practice, Cramer noticed that when talking about the future or the long term, many people tend to focus on new, often quite complicated, topics, technologies, and threats. As a result, for many others, the future remains science fiction, they think the future does not concern them. After concluding her dissertation on the professionalization of futurists, Cramer came to the conclusion that all it takes to actively relate to the future is to have the guts to actually ask very basic questions. Questions that seem so simple that they are often skipped. Who do we want to be? What matters? Who is at the table when we talk about the future?

***Keywords**: Future Literacy, Long Term Vision, Simple Questions, Not To Simple Answers*

The Digital Transformation of Hospitals: a Delphi-based Foresight Study of Digitization Effects

Van Oosterhout, Lotte
Fontys, The Netherlands

On 16 March 2022, were the Dutch municipal council elections. Nationally the Turnout in municipal elections was dramatic. It appears that only 50.4 percent of eligible voters went to the polls. This was an all-time low. In the residence of Fontys Academy for Creative Economy, Tilburg, the turnout at the municipal elections was even worse: just over 40 percent. Historically, Tilburg has a low turnout in the municipal elections. Four years ago, the turnout was also low at 45.3 percent, as in 2014, when Tilburg had the lowest turnout at 44 percent. In Tilburg, 182,574 residents are entitled to vote this year. Of these, 3620 may fill in their ballot paper for the first time this year. The municipality of Tilburg had therefore campaigned in recent weeks to attract more young people in particular to the polls. But that didn't work out. The plan for the second half of this project was to focus on visualizing the encounters the students have and the different insights they will get from these encounters. The student researchers jumped into another very important insight; it is not only about the absence of focus and awareness of long-term vision it is also about lack of (youth) involvement in democracy. How can we help youth de-fictionalize the future? To get them more involved in local politics again and to make them actively relate to the long term.

***Keywords**: Elections, Youth, Defictionalize, Long Term, Students Research*

SESSION VI at 13:00–13:50

(HYBRID) Special Session

Imagining After Capitalism

Time: Friday 17 June at 13:00-13:50
Room: Aavameri
Chair: Toni Ahlqvist

Hines, Andy
Department of Human Development and Consumer Sciences, University of Houston, USA

In addition to helping clients identify and reach their preferred futures, an important role for futurists is to help develop positive guiding images of the future for the society as a whole. Important prior research suggests that the successful societies in the past were guided by such images. Today, and over the last several decades, we have lacked such an image. This session will review the authors work in developing three such guiding images for life after the end of today's capitalist socio-economic system. It will include a review of how futurists approach such a question and walk participants through the process used to generate these images, as well as discussing the images themselves.

(HYBRID) Poster Session

Time: Friday 17 June at 13:00-13:50
Room: Aavameri
Chair: Sari Puustinen

The Digital Transformation of Hospitals: A Sequential Foresight Study of Digitization Effects

Köbe, Philipp – Sabine Bohnet-Joschko
Chair of Management and Innovation in Healthcare, University of Witten/Herdecke, Germany

Background
In the context of the digital transformation of all areas of society, healthcare providers are also under pressure to change. New technologies and a change in patients' self-perception and health awareness require a rethink in the provision of healthcare services. New technologies and extensive use of data can change provision processes, optimize them or replace them with new services. The inpatient sector, which accounts for a particularly large share of healthcare spending, plays a major role in this regard. This study examines the influences of current trends in digitization on inpatient service delivery.
Methods
We conducted a narrative rewiew. This was applied to identify the international trends in digital transformation as they relate to hospitals. Future trends were considered from different perspectives. Using defined inclusion criteria, international peer-reviewed articles published from 2016 to 2021 were selected. The extracted core trends were then contextualized for the German hospital sector with 12 experts.
Results
We included 44 articles in the literature analysis. From these, eight core trends could be deduced. A heuristic impact model of the trends was derived from the data obtained and the experts' assessments. It provides a development corridor for the interaction of the trends with regard to technology intensity and supply quality. Trend accelerators and barriers were identified.
Conclusion
The impact analysis shows the dependencies of a successful digital transformation for the hospital sector. While data interoperability is of particular importance for technology intensity, the changed self-image of patients is shown to be decisive with regard to quality of care. We show that hospitals must find their role in new digitally driven ecosystems, adapt their business models to customer expectations, and use up-to-date communication and information technologies.

***Keywords**: Digital Transformation, Digitization, Healthcare Provision, Hospital, Trends*

Bounce Forward: Resilience Building in the Post-Pandemic Finnish Workplace Through Futures and Foresight Capability Development

Richards, Martyn
Finland Futures Research Centre, University of Turku, Finland

During the COVID-19 pandemic, there has been a fairly successful transition to teleworking in the specialist sectors in Finland, but in the long run, isolation and uncertainty affect well-being at work and companies' innovation and community learning (Eurofund 2020). The post-pandemic recovery period has been seen as an opportunity not to return directly to the old way of working, but to develop and enact operating models that foster innovation, well-being, and environmental regeneration.

The goal of the Bounce Forward - Resilience in Working Life (resilienssiatyoelamaan.fi) project is to strengthen the resilience of companies and staff through interactive practices, cultivating leadership skills, and enhanced future thinking.

Resilience refers not only to the ability of individuals and organizations to recover to survive, but also to change and innovate to thrive. Features of a resilient organization include, for example, continuous community learning and innovation, anticipation and preparedness, awareness of goals and common direction, and doing things together, experimenting and making mistakes. In order to foster resilience, the Bounce Forward project has been running two parallel capability development programmes in the form of Resilience Workshops for SMEs and Futures Agent trainings for knowledge economy professionals.

In the Resilience Workshops, companies learn to understand the manifestations of complexity behind the everyday situations of their organization, explore possible and desired futures, and enter a dialogue with alternative pathways that may express a more sustainable fit to the post-pandemic environment. The goal of the resilience workshops is to develop competencies and practices that strengthen the ability of organizations to change and create new opportunities for change. Each company selected a topic to develop according to their own needs. Expert-intensive SMEs from Uusimaa, Päijät-Häme and Central Ostrobothnia participated in this project.

Futures Agent training for experts is designed to increase the internal capacity for creative collaborations, to enhance opportunities for the co-development of organizations, and to support the development of skills that help individuals to navigate uncertain and emergent futures. Futures Agent training for experts provides informational and methodological skills for navigating change. Training, including webinars and small group work, progresses from identifying problems and opportunities to attain broader insights, solutions, and tools. Futures Agents go on to champion experimental innovations in their own organisations.

The poster session presents illustrative examples activities from the project, including sessions on games based futuring, the development of a custom set of post-pandemic work-life trend and issue cards, and feedback from workshops and trainings.

Bounce Forward - resilienssiatyoelamaan.fi (2022). Available at: https://resilienssiatyoelamaan.fi

Eurofound (2020), Living, working and COVID-19, COVID-19 series, Publications Office of the European Union, Luxembourg. Available at: https://www.eurofound.europa.eu/publications/report/2020/living-working-and-covid-19

***Keywords**: Capability Building, Futures Thinking, Futures Literacy, Post-Pandemic Work-Life*

Promoting Sustainable Health and Well-Being at Maternity and Child Health Clinics

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Background: Many lifestyle changes improving health and well–being are simultaneously beneficial for the environment and the future of our planet. Maternity and child health clinics, providing antenatal care and health services for children under school age, play a key role in health promotion and could also have great potential in promoting sustainable lifestyle choices.

Aims: To integrate the promotion of sustainable lifestyle choices into existing care protocols and practices at the maternity and child health clinics in the Päijät-Häme region, through a real-life pilot during 2020-22.

Methods:
1) Training health care providers in the basics of sustainability thinking through interactive training sessions,
2) identifying existing good practices as well as new possibilities to promote planetary health at the maternity and child health clinics,
3) co-creation of new care protocols with health professionals and environmental experts
as well as clients,
5) examining educational and other needs of practitioners to adopt contents into clinical work,
6) testing new protocols and collecting feedback from practitioners.

Results: A framework for care visits and other tools developed for health care providers.
After the training 93% of the participants saw that the healthcare sector has a critical role to play in promoting sustainability. 76% had changed their mind as a result of the training.

Conclusion: Public health nurses welcome a role as change agents and sustainable lifestyles can be promoted as an integrated part of routine care visits at maternity and child health clinics.

Keywords: Planetary Health, Sustainable Lifestyles, Health Promotion

Planetary Design Combines Forest to Housing?

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Can urban living remain within the limits of planetary carrying capacity by matching the forest and its diversity to housing in a solution-oriented and visionary way? How could we shape an inherent forest ecosystem and housing together to promote resilience?

In my dissertation research (2022-2025), I will address the improved resilience achieved through the combination of forest nature and housing. From a housing perspective, the study explores the latest research of natural and nature-based solutions, ecosystem services, forest biodiversity, urban green solutions/land use planning, urban housing and wood product industry (value network). The project aims to identify cross-sectoral phenomena, analyze causal relationships and form solution options on the principle of life-centered planetary design. Design empowers research and research inspires design. The study's broader approach is to reorient human ingenuity from overconsumption to rebuilding the natural connection and staying within the limits of the Earth's carrying capacity.

The main object of the study is timber apartment building and housing because it has a built-in but still narrowly exploited connection with the forest compared to potential. The experience of wooden apartment buildings has been studied in various ways and from different perspectives. Transparency of wood raw material origin and sustainable forest management has been tried to verify through forest certification. Then again there is a desire to increase the green environment in cities because research suggests at least that nature improves urban attractiveness, liveliness, residents' well-being, stress relief and the ability to mitigate and adapt to the challenges posed by climate change. Nature-based solutions contribute to ecosystem services to people and increase biodiversity and connectivity.

There are numerous examples of positive effects of nature for residents, but how would these be combined, diversified and expanded in the future? What kind of social and cultural link from housing to forest is possible or viable in addition to ecological and economic perspectives? How could the forest link in housing promote learning, innovation or even togetherness?
The presentation at the Futures Conference 2022 is based on a review of existing studies brought together from studies on forest and housing resilience.

Keywords: Planetary Design, Social-Ecological Resilience, Forest, Housing, Biodiversity

Futures of the Food Industry – Which change factors could disrupt the global food system by 2040?

Mäki-Teeri, Marianna – Anna Grabtchak – Antti Niemi – Eljas Aalto – Göckçe Sandal – Max Stucki – Shiori Ota – Tuomo Kuosa - Yukie Ikezumi
Futures Platform, Finland

The world's food system faces multiple future challenges: instability related to the food security is becoming one of the major global risks in the coming decades. This foresight study aims to give perspectives on plausible change factors that can disrupt the global food system by 2040.

Conducted in collaboration with Futures Platform's diverse team of professional futurists and a panel of 25 industry experts from various public and private organisations, the research outlines **12 change drivers** and **50 key trends*** shaping the futures of food production, trade, and consumption. The study included two main stages: the first focused on horizon scanning identifying the potential disruptors of food system. The second stage was an expert panel survey intended to evaluate, prioritise, and outline the critical change drivers and phenomena associated with them.

Organisations that identify ways to leverage the opportunities arising from these topics could be able to build a preferable future for themselves, in contrast to those that are not ready for the changes and challenges related. The challenges approaching us are demanding in an unforeseen way and could lead to painful compromises if we fail to seek and discover mutually beneficial solutions and opportunities that many organisations could benefit from, or if the investments needed would be given too late. It is increasingly understood that success in the future is based more and more on collaboration and synergies, enabling sustainable and positive environmental, health, economic and social impacts in the food system with a potential to also impact other sectors.

Above all, in the study seeks to encourage individuals to develop their understanding of the future of food industry on a general level, and especially to help business operators and decision-makers in the field to identify and outline the various risks and opportunities in a clear and actionable way. An overall picture of various alternative futures is a powerful tool for steering an organisation towards desirable futures.

Keywords: *Food System, Food Security, Horizon scanning, Survey, Trend Analysis*

* The collection of the identified change drivers and trends can be viewed from the foresight radar openly accessible during the conference (13.6.2022-30.6.2022) Click here to read more: www.futuresplatform.com/food.

THURSDAY 16 JUNE 2022

SESSION I at 9:00–10:45

Planetary Futures: Philosophy, Methodology, Ethical Considerations

Time: Thursday 16 June at 9:00-10:45
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Tadhg O'Mahony

Entrepreneurial & Innovative – But Without a Story to Tell? Ethical Considerations of Silent/Silenced Collective Endeavors

Berglund, Karin – Anna Wettermark
Stockholm Business School, Stockholm University, Sweden

Entrepreneurship is often associated with individuals (Drakopoulou Dodd & Anderson, 2007), acting (successfully) on the market (Dempsey & Sanders, 2010), identifying opportunities and introducing technological innovations (Ahl, 2006; Ahl & Marlow, 2012); also, with the purpose of contributing to societal change/development (Berglund et al., 2012). As entrepreneurs and innovators, they are portrayed as charismatic, gaining attention by assuming somewhat of a hero status (Anderson & Warren, 2011; Bill et al., 2010). Often, they are men, young and confident (Treanor & Marlow, 2019). Theirs is a 'loud entrepreneurship' that 'command our attention' (Ahmed, 2000: 53). In our study of how the Swedish healthcare sector managed the Corona crisis, a different version of entrepreneurship and innovation emerges. Our ethnographic study, based on interviews with and observations of hospital pharmacists, conveys a 'silent entrepreneurship' – acting creatively and collaboratively, circumventing organizational rules and norms, with the wellbeing of patients in mind. Healthcare workers' entrepreneurial and innovative agency expressed itself without any excessive gestures or self-affirmatory narration, in a practical 'doing', focused on the development of alternatives to conventional pharmaceuticals as the de-regularized market for drugs ceased to function during the pandemic. Counterweighing a failing market, thereby safe-guarding high-quality care to patients, hospital pharmacists acted entrepreneurially and innovatively, but without broadcasting their achievements.

In this paper, we problematize connections between entrepreneurship, innovation, narration and contributions to societal change. We ask if and how entrepreneurship and innovation can be conceptualized without focusing on narration, and what the consequences might be if we, on a societal level, fail to recognize entrepreneurial/innovative endeavours among certain layers of the population - those who lack a language with which to describe themselves as 'entrepreneurial' or 'innovative' (Berglund & Johansson, 2007). In our study, pharmacists saw themselves as occupying secondary roles, as 'supporters' of frontline workers (Ahl, 2007), yet acknowledged their professional competence and ability to prevent life-threatening situations to arise.

In the paper, we develop the notion of 'silent entrepreneurship' to explore the possibilities for low-profile professional groups to be recognized in their entrepreneurial/innovative endeavours (Jones and Spicer, 2009). We problematize the distinction between 'silent' and 'silenced' entrepreneurship/innovation, leaning on Fricker's (2007) theories on epistemic injustice and Butler's (1997) writings on subject formation. We suggest a broader conceptualization of entrepreneurship and innovation, focusing on collective, action-oriented and embodied rather than narrative aspects, thereby visualizing and promoting entrepreneurial-innovative agency - also where it is least expected. By opening up to re-conceptualizations of entrepreneurship, and of who can gain recognition as entrepreneur, we discuss the role of silent/silenced knowledge and silent/silenced 'doing' in highly narrativized societies.

Keywords: *Entrepreneurship, Innovation, Silent/ Silenced, Ethics, Narrative*

Toward Sustainable Wellbeing: Advances in Contemporary Concepts

O'Mahony, Tadhg
Finland Futures Research Centre, Finland

Sustainability and wellbeing are two key global policy priorities, which despite considerable overlap, are invariably isolated. In wellbeing, the importance of social dimensions is an emergent conclusion, but recognition of the environment and nature is embryonic. In sustainability, wellbeing remains poorly characterized. Despite some procedural advantages, in practice, a continued ambiguity risks compromising both goals, and improved conceptual integration is therefore necessary. In this review article, key contemporary wellbeing accounts are considered, including preferences, needs, capabilities, happiness, psychological wellbeing, and physical wellness. Wellbeing literature suggests that a holistic multidimensional account is strongly supported, that is context- and value-dependent, with a prominent role for social and relational dimensions. A transdisciplinary systems thinking approach is appropriate to integrate from the individualism characteristic of wellbeing, to the interdependent human and environmental systems of sustainability. It is recognized that both wellbeing and sustainability are complex and value-laden, requiring the surfacing of values and ethics. A synthesis of the two branches of literature asserts four fundamental lenses: the framing of growth and change; social justice; the ethics of freedom; and the value of nature. The conceptual synthesis both platforms the relational approach of "care," and underlines the imperative to reconsider the place of consumption. An integrated "sustainable wellbeing" offers the potential for win-win outcomes, in transformation to a flourishing of human wellbeing and the natural world.

Keywords*: Wellbeing, Flourishing, Needs, Nature, Transformation, Sustainable Development*

Regenerative Futures

Scarano, Fabio[a, c] – Raul Corrêa-Smith[b] – Leonardo Menezes[c] – Ana Paula Teixeira[b] – Davi Bonela[c] – Alexandre Fernandes[d]
[a] Federal University of Rio de Janeiro, Brazil
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'Regeneration' – the capacity of organisms and entire systems (from cells to planet) to self-reform – is a biological term now used in many fields such as architecture, design, culture and social sciences. Earth as supraorganism, Gaia, has been fractured and wounded by the hegemonic take-over by modern humans. The resulting degraded ecosystems and social inequalities are symptoms of a triple alienation of the moderns: from nature, from one another, from oneself. Gaia needs regeneration. 'Anticipation', originally, is also a biological term and, according to Robert Rosen, is a trait of organisms related to metabolism and repair, ultimately, wellbeing. It is, therefore, directly related to regeneration.

Stem cells, exaptation and autopoiesis are biological anticipatory systems related to self-reform and regeneration. Stem cells act as a repair system for the body and can self-renew to produce more stem cells. We have previously suggested that Gaia as supraorganism has stem cells and identified plant species ('stem species') that behave as such. Later we found that these plants have exaptive properties. Unlike adaptation that responds to given conditions, exaptation provides flexibility for future changes, as defined by Stephen J. Gould. Finally, autopoiesis refers to the capacity of a system to reproduce the components of which it is composed. Interestingly, stem cells, exaptation and autopoiesis are biological systems of regenerative anticipation that are used as reference in a number of human fields, such as cybernetics, digital sustainability, innovation, and literature.

How can humans behave as stem cells of Gaia, so as to help regenerate planetary wounds and anticipate multiple alternatives of wellbeing? In this paper, we argue that for that purpose it will be strategic to incorporate into Futures Literacy perspectives related to ancestral peoples and cultures ("ancestral futures", as we call it), and to present-day local regenerative practices ("seeds of the good Anthropocene", as defined by Elena Bennett and co-workers). We will 1) draw a parallel between the biological anticipatory systems of stem cells, exaptation and autopoiesis and human practices related to "ancestral futures" and "seeds of the good Anthropocene", and provide examples from

Brazil; 2) discuss how these practices can deliver on decolonising futures, since they value local and provincial realities as keys to regenerative futures and planetary wellbeing aspirations; and 3) based on these arguments, provide a critique on universalising targets for sustainability such as the Sustainable Development Goals.

***Keywords**: Anticipation, Futures Literacy, Planetary Wellbeing, Regeneration, Regenerative Anticipation, Regenerative Futures*

Quantum Science of Enneagram: Personality Development and Consciousness

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Quantum Intelligence Center, Canada

This abstract is about how the personality barrier develop during our growing up unto adulthood and classification of personality types via Enneagrams to entail how enneagrams can guide in development.
Enneagram provides a 9-point typology for personalities that are divided among Heart, Head, and Body Types. Each person gathers information through three sources: mind, senses, and feelings. They are labelled in Enneagram as Centers or Triads. If someone is in Head Triad that didn't know how to relate with others. They would miss that connection, feel isolated and different. Someone in Body Triad may feel compelled to be autonomous and secure all the time. They get defensive without thinking and blow over people that they really care for. That's because they do before they think or feel. Someone in Heart Triad can get overcome by emotions and feel driven by them to do something before thinking about it. They might end up acting in ways that friends and family feel intruded upon rather than loved.

Also, depending on the sociocultural demand, we develop vital-mental software, both negative and positive. At the body center, anger, lust, domination, narcissism, pride, self-worth are examples. At heart, again in conjunction with the brain, we develop vital-mental personal software. With the help of these emotional software, we have additional brain circuits of negative emotions: jealousy, envy, neediness, kindness, etc.
Not only this, nature—the contribution of the genes and nurture— the contribution of environment also plays significant role in shaping one's personality. Nurture gives us the additional software—vital and mental--that we build during development.

Other than these, three specific aspects which contributes are: karma—habit patterns, character traits; gunas or qualities of how we use our experiences during development--with conditioning or with creativity; dharma, the archetype we choose to explore in life.

Gunas, when triggered, affect functioning of the brain. Excessive use of guna of fundamental creativity—sattva – (without achieving success and ending up using rational thinking) produces over-intellectualism – overvaluing mental intellect. Unbalanced use of guna of situational creativity—rajas, produces brain hyperactivity, excessive fickleness. Excessive use of guna of conditioning—tamas (avoiding creative challenges) produces mental laziness, leading to apathy and passivity.

Emphasis is on the change required not merely in the outward form at physical level but in the inner constitution-at mind, thoughts levels, at subtler levels of our personality.

***Keywords**: Enneagram, Personality, Development, Creativity, Conditioning, Gunas*

Prospecting Futures of Social Wellbeing and Health

Time: Thursday 16 June at 9:00-10:45
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Hanna-Kaisa Aalto

Multisecotrial Perspectives on Promoting Health and Wellbeing in Lahti Region

Haveri, Hanna[a] – Riitta-Maija Hämäläinen[a] – Marju Prass[b] – Päivi Sieppi[c]
[a] Päijät-Häme Joint Authority for Health and Wellbeing, Finland
[b] Lahti University Campus, Finland
[c] City of Lahti, Finland

Public healthcare costs are constantly rising in Western European countries. Though the costs of healthcare in proportion of gross domestic product have increased for example in Finland during the past decade, the prevalence of many non-communicable diseases has even doubled. While risk factors for obesity, diabetes type II and depression are well-known, preventive healthcare and wellbeing still need more effectiveness. Various projects and programmes tend to lack sustainability; the implemented actions need to be taken more rigorously into practises in different levels of health care structures.

Lahti Regional Health and Environment Programme 2022-2032 integrates health and environmental goals of the Päijät-Häme region. The programme is coordinated by the Päijät-Häme Joint Authority for Health and Wellbeing, the City of Lahti and the Lahti University Campus. The aim of the programme is to find new ways and perpectives to prevent non-communicable diseases and to promote health and wellbeing while reducing the rate of biodiversity loss and climate change.

The programme is implemented by a number of collaborating stakeholders and is governed by the regional health and social care and services authority. The programme consists of multiple cross-sectoral projects and smaller actions and events. The efficacy of the programme is monitored using statistical data, surveys, questionnaires and multidisciplinary studies. The impact of the programme is evaluated by economical data and overall feedback. The aim is to improve the implementation of good practices through transdisciplinary collaboration between various sectors including health and social service practitioners and active citizens in different organisations and social media. The programme attempts to find healthy, socially equal and environmentally sustainable practices that support us to make responsible lifestyle choices. To accomplish this, cooperation between health and environmental actors in education, research and communication is essential.

The general goals are divided into four sections: healthy and sustainable nutrition, active mobility and physical activity, healthy living environment and connection to nature. Experts representing the stakeholders interconnect with each other to innovate new ideas to achieve the goals of the programme. There are already 33 various multisectorial projects, actions or events for the first year. The programme's steering group is in charge of the programme's agenda and monitoring. The ultimate goal is to achieve both economic and ecologic benefits by improving the wellbeing of inhabitants and successfully change public opinion and the overall policy towards more sustainable and climate friendly direction.

***Keywords**: Healthcare, Prevention, Non-Communicable Disease, Climate-Change, Multi-Sectorial, Environment*

Building Blocks of Positive Community Health: The Contribution of Kenyan Communities

Robbiati, Claudia[a] – Hinjal Bhatia[a] – Winnie Chelagat[b] – Martha Gutteridge[a] – Lilian Koskey[c] – Geoffrey Mwai[d] – Iregi Mwenja[e] – Aloyce Odhiambo[f] – Emma Ogden[a] – Laura Peters[a, g] – Chloe Wood[a] – Des Tan[a] – Geordan Shannon[a, g]
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In the community, people work in their everyday lives to create health, drawing on community resources that aren't always considered part of a 'health system'. The everyday community resources that people draw on to create health are many and varied. These resources can be thought of as a complex system. Some resources may be well-known, but others may be under-utilised, and require a systematic approach to help unlock their potential.
Communities are often the most effective and appropriate agents of change for issues that affect their health and the health of the environment they live in. A local and community-centred approach to developing interventions is essential for long-term sustainability. However, those at the frontline rarely have a stake in designing relevant health interventions, and the informal health systems they already use are often overlooked. In addition, community members or local decision-makers face a lack of accessible data, and struggle to choose effective and sustainable interventions without a deep understanding of the local context.

Working across three diverse field sites in Kenya, this study used a mixture of participatory approaches to understand community concepts of positive health (community health building blocks) and ways in which communities can pursue and sustain health agendas driven by local priorities. The results of this research will be used to develop

a community toolkit and decision-making platform to fill gaps in community information and to support community-led action for people's and ecosystems' health.

***Keywords**: Community Positive Health, Agentic Approaches, Sustainability, Local Resources, Systems Thinking, Kenya*

The Impacts of Mutual Dissolution of Boundaries between Biology and Technology on Future Society

Aminova, Elena[a] – Sivert von Saldern[b] – Cordula Klaus[a] – Lennart Galdiga[a] – Christian Grünwald[b] – Max Irmer[b] – Julian Sachs[a] – Jonathan-Aton Talamo[a] – Jorg Körner[c]
[a] Prognos AG, Germany
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Whereas shifting of boundaries between biology and technology is not a new phenomenon, a new dimension has been emerging recently. Biological and technological systems, especially digital ones, are converging at an unprecedented intensity. This leads to the emergence of hybrid entities with stimuli coming from both directions. The speed of the dissolution of boundaries is being fueled by trends such as demographic changes, a growing awareness towards holistic health, hyper-individualization, or the surging use of digital technologies in daily life. As a result, we observe two parallel fronts. Firstly, the technologisation of biology (especially regarding humans): living organisms are being altered by technology intervening in their functioning. Secondly, biologisation of technology: different technologies are being modified by integrating living organisms or processes that resemble characteristics of living organisms in nature. What impacts could it have on our lives in the upcoming decades? Bio/digital technologies such as smart contact lenses, neuroprosthesis and exoskeletons, brain interfaces, intelligent medicines, or artificial organs show several potential implications: from the claim to cure numerous illnesses and remove physical / mental disabilities to extending human abilities in general – turning humans to supercreatures by genome editing or linking the body to the digital world.

Six application scenarios show possible dynamics of convergence in Germany in 2030ies. Depending on the setting of external factors certain technologies might be extensively used in the future. Consistent components from the dissolution dynamics can be seen in all of the application scenarios: advanced forms of digital androids, smart wearables and comfortable exoskeletons; health and work sectors as the most important application areas for the above technologies; the scale of dissolution of boundaries that is directly dependent on the challenges associated with use of such technologies. The desire for self-optimization (or optimization of other living beings) opens the perspective for a "consumer" market for individual performance enhancement. However, further developments in this field will require flexible legislative basis and raise numerous ethical questions, inter alia, who determines the limits and boundaries of convergence? Who will regulate the extent, reversibility, limitations and long-lasting consequences of such interventions?

***Keywords**: Biologization of Technology, Technologization of Biology*

Prospective of Artificial Intelligence in the Argentine Pharmaceutical Industry to the Year 2030-Delphi Method Application

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This research deals with the prospective study of the intersection of the technology called Artificial Intelligence and the Pharmaceutical Industry;
The general objective of the same is to develop a prospective study on the possible applications of artificial intelligence in the pharmaceutical industry of Argentina to the year 2030. Logically, this study deals with the competitiveness of the sector to the year 2030 and its value chain.

The methodology used was to apply the combination of tools available in the prospective studies studied. By defining a general objective, then delving into specific objectives.

The first of these was to identify, characterize and evaluate, in terms of trends and factors of change, the present and future applications of artificial intelligence in the pharmaceutical industry globally and in Argentina in particular. Then build possible (future) scenarios of the selected sector to the year 2030. And for the last stage, propose strategies such as policy recommendations with a focus on the possible applications of artificial intelligence in the pharmaceutical industry in Argentina. Through the exhaustive analysis of available information, built the research problem and hypothesis of the work and the compilation of information embodied in the state of the art was generated.

An important group of critical variables and uncertainties was identified and experts were consulted through a Delphi survey, which allowed an updated and real field work. Consensus was achieved among the expert specialists participating in the Pharmaceutical Industry, technology and other relevant sectors that allowed the construction of a bet and proposed scenario as part of the health industry.

***Keywords**: Health Industry, Artificial Intelligence, Pharmaceutical Industry, Prospective Studies, Trends and Factors of Change, Delphi Survey*

New Need for Teaching and Learning for Planetary Health

Goharinezhad, Salime – Hamid Reza Baradaran
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All across the world, people are increasingly faced with profound challenges in their lives; these include environmental, social, and health disasters. The results of urbanization on a global scale, industrial agriculture, and uncontrolled carbon emissions are evident in a wide range of global environmental issues, deforestation, biodiversity loss, ocean acidification, air and water pollution, soil contamination, and climate change. The Covid-19 should serve as the latest wake-up call for human beings to shake off their ignorance and save the planet Earth from the aforementioned threats.
Studies show that healthcare systems are responsible for 4.4% of greenhouse gases. Furthermore, 1 to 5% of all negative impacts on the environment, on the global scale, are the result of harmful activities in the health sector. In other words, health care systems around the world affect the deterioration of air quality, soil contamination and water pollution, and other ecological issues by releasing greenhouse gases into the air that result from producing, disposing, and burning medical waste. Therefore, all medical professions have a moral duty to strive to minimize, as much as possible, their profession's negative impact on the environment.

The concept of planetary health was formed to serve as a framework for better understanding these interdependent relations as well as identification of possible solutions for the challenges that nations face. The purpose of this statement is to reach a unanimous global, collaborative and all-inclusive perspective that provides people with sustainable health care services and promotes the planet's well-being. Many countries have already agreed, in a unanimous and swift move, to integrate these concepts and approaches into their health care systems and educational curricula; the goal is to reach a 45% reduction in greenhouse gas in 10 years and to neutralize carbon emissions by 2050, especially in the healthcare sector.
Therefore, our responsibility toward future generations urges all people to come together and strive for the creation, recovery, and preservation of healthy ecosystems for a more capable and affluent civilization.

Planetary health seeks to encourage active environmentally-friendly thinking; the teaching of such a program along with its proper competencies and merits puts the medical students further exposed to such discourse concepts as sustainable development, planetary health, and climate change. Integration of planetary health into all fields of study allows students to participate in collaborative activities to protect and recover planetary health and achieve sustainable development goals.

***Keywords**: Planetary Health, Curriculum, Medical Education, Teaching & Learning*

Ecological Regeneration and Wellbeing

Time: Thursday 16 June at 09:00–10:45
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Sari Söderlund

How Human-Forest Relationship Can Contribute to Future's Planetary Well-Being?

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Forests are vital for the well-being of humans and other species. At the same time, forest ecosystems have for a long time been affected by many human-induced challenges such as land use change, over-harvesting and climate change. Overall, human activities have changed or endangered both national and global forest ecosystems and continue to do so with increasing pace also in the future.

Human connections to nature can be depicted with various concepts. The multi-perspective viewpoint of human-forest relationship (HFR) aims at encompassing interactions between forests and human beings (Halla et al., 2020; 2021). Being diversified and transdisciplinary, the HFR research aims at bringing new perspectives to the highly polarized societal forest discussion on forests and their utilization. We acknowledge, however, that concept of HFR, and related research, has its challenges, its evident anthropocentrism being one of the central ones. The concept of planetary well-being (PW), instead, aims at well-being for all species, pursuing non-anthropocentric framing for solving current ecological challenges (Kortetmäki et al., 2021).

Therefore, in our paper we will bridge between these two concepts, namely HFR and PW. Our purpose is to critically reflect on how the integration of HFR with PW can help in aiming at non-anthropocentric and transdisciplinary methodology in the study of forests and forest relationships, and also, how can HFR contribute to PW and vice versa. We consider how more ethical HFRs, supporting PW, could be created by applying wise, holistic thinking. With our explorations, we can contribute to the some of the key questions presented and discussed in this conference: How can wellbeing for humans and other species be supported at planetary scale? How can people today identify new pathways for fostering the conditions and behaviors that allow human and non-human life to thrive?

We believe that in order to promote PW and to create HFRs that support this development, we need new ways of thinking and acting, as well as novel tools for enabling those actions. HFR concept, related research and outcomes are transdisciplinary attempts to approach these dilemmas. We should be aware of our interspecific responsibilities -especially due to power imbalance between us and other species- to affect realization of desired futures. We should also aim at a fairer utilization of planetary resources. It is important to support development of HFRs through dialogue and learning from intergenerational relations.

***Keywords**: Human-Forest Relationship (HFR), Planetary Well-Being (PW), Ethical HFRs, Anthropocentrism, Holistic Thinking, Overgenerationality*

Places to Intervene in a System in Crisis: The Wellbeing Economy and Ecocide Law

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We live in the Anthropocene epoch where our interconnected socio-economic-ecological system has breached Earth boundaries, as visible through climate change, biodiversity loss, ecosystem collapses, resource depletion, pandemic, societal inequality and our actions to redirect our trajectory are clearly inadequate. Systems scientist Donella Meadows identified places to intervene in a complex system for change, classifying 12 leverage points as being shallow or deep – and the deeper they were, the more potential they have to lead to

change. Most of policy makers' interventions have focused on shallow leverage points such as subsidies, taxes or standards.

Here, we present that we need to address deep leverage points that change the design and intent of the system. It can be argued that since the Paris Agreement and the SDGs address the rules of the system they are at the global systems design level. But because they are both ´soft laws,´ it is at the whim of the participating governments to make pledges that are followed. Current national pledges through COP will lead us to 2.4oC, way above the agreed 1.5oC that the IPCC has demonstrated we need to stay below.

The deepest intervention points address the intent of the system, the underpinning values, goals, and world views of actors that shape the emergent direction to which a system is oriented. The leverage points are the goals of the system, the mindset/paradigm out of which the system arises and the power to transcend paradigms. We have identified that addressing the economic goals presents a deep leverage point. Shifting goals can lead nations from the destructive economic growth path, to a path focused on wellbeing of people and planet.

Furthermore, remembering the primacy of the living natural world, we will also present that the deepest leverage point can be activated through making mass destruction of the environment - Ecocide - the fifth crime against peace, security and well-being of the world. This will record publicly that the international community regards ecocidal activities as abhorrent. A new moral baseline is thus established. The action is relatively simple. A nation proposes Ecocide Law be added to the Rome Statute of the International Criminal Court and once 2/3 of the signatories have signed, the motion goes through. Adopting Ecocide Law would be a true game changer, a paradigm shift for a liveable planet.

Keywords: *Complex System, Leverage Points, Wellbeing Economy, Ecocide Law, System Goal, Paradigm Shift*

Low Carbon Development Towards a Green Economy in Indonesia Study Case of Renewable Energy Subsidy

Novitasari, Maria
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Indonesia is one of the richest countries in natural resources as well the renewable natural resources. Energy demand can be rising by four-fifths and electricity demand could triple between 2015 and 2030. The issue of climate change becomes a crucial problem for Indonesia since it is the biggest archipelago in the world which the sea level rising matter. On the other hand, domestic coal and imported petroleum products have grown to meet the electricity demand. Subsidy for fossil fuels energy still runs in the country. Indonesian government understood that switching fossil fuels to renewable energy is a method to combat climate change. Indonesia started adding renewables to its energy composition. The country has set out to achieve 23% renewable energy use by 2025, and 31% by 2050. The efforts based on an economic point of view are needed such as tariffs, incentives, and subsidies in order to encourage more companies to invest in renewable energy in Indonesia. This paper will analyze the concept of low carbon development, analyze the correlation of reduction of carbon emission to economic growth, analyze the renewable energy projects in Indonesia; describe options for delivering budget subsidies for renewable energy in Indonesia; analyze the cost and benefit of renewable energy subsidy in Indonesia, summarizes the current impediments to renewable energy projects with a focus on pricing arrangements.

Keywords*: Renewable Energy, Indonesia, Subsidy, Emission Reduction, Climate Change*

Witness: A Science-Fictional Universe to Explore Life under Radically Different Economic Systems

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In recent decades, human society has displayed remarkable inertia in the face of multiple, interlocked, potentially civilization-threatening crises, of which climate change is the clearest example. While the causes for such inability to act are complex, some scholars and activists have called attention to the difficulty of imagining economic systems less prone to extractive behavior than the one we live in. In the words of Fredric Jameson, it is easier to imagine the end of the world than to imagine the end of capitalism.

Academic economists have contributed little to this effort, and instead devoted most of their efforts of the past 50 years to refining and extending the neoclassical model. The reflection on deep-level economic transformation has mostly been carried out by practitioners: mutant cooperatives in Catalonia, community foundations in Sicily, and so on, with next to no support from economic theorists.

We report on an initiative to bring more intellectual firepower to this effort. The idea is to use science fiction as an "architect's rendering" of what it would be like to live in societies running on non-capitalist economic systems. This takes the shape of an open source fictional world – a post-climate change floating megacity called Witness – to set science fiction work in. Witness is being built collaboratively by an open community of about 200 people, many of whom are either economists or science fiction authors and readers. A fictional social science called Aethnography, owing much to anthropology, is the in-world functional equivalent of economics.

The idea is that the science-fictional setting unlocks economic imagination, making it easier to imagine production systems other than our own late-stage capitalism. To make such imagined economies coherent, we relied on the human ability to tell stories, and detect inconsistencies in the storytelling of others. This forces the community of authors to come up with credible accounts of how alternative economies came to emerge in Witness.

After launch in 2020, Witness has inspired several science fiction short stories. But it also was re-used by policy makers and civil society actors to think about possible trajectories that Internet technology could take. Two more Witness-related research activities are in preparation, investigating phenomena as diverse as Eastern European populist politics and adaptation to rising sea levels in coastal communities.

We present the experience, and reflect on the potential for combining science fiction, economic thinking and foresight tools such as scenario building and role-play games.

Keywords: *Economics, Science Fiction, Narratives, Futures*

(HYBRID) Socio-Economic Transformation and Planetary and Human Wellbeing

Time: Thursday 16 June at 9:00-10:45
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Ville Lauttamäki

Can the Wellbeing Economy Help Us Achieve a Good Life for All Within Planetary Limits?

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This paper builds on earlier work by Kate Raworth, Dan O'Neill, and Jason Hickel to investigate the degree to which the transition to a wellbeing economy can improve the prospects for achieving "a good life for all within planetary boundaries." We update their data by calculating a range of healthy life expectancy and for per capita limits for ecological footprint, material footprint and CO2 emissions, according to the low, medium, and high UN population projections for 2050. We compare this data to current consumption levels, as well as the consumption levels necessary to attain high levels of wellbeing. This involves a philosophical and empirical review of what wellbeing entails, comparing approaches such as the Sustainable Development Goals, Manfred Max-Neef's Matrix of Human Needs and Amartya Sen's concept of "development as freedom." In particular, this paper focuses on the role of universal provision services in a wellbeing economy–especially, universal health care–given their importance for both well-being and sustainability. We also contrast the case studies of the United States and Costa Rica to demonstrate the low material throughput required to meet social needs such as healthcare and education. Finally, we conclude with an exploration of what our research means for the cultural changes necessary to bring about a future in which all people are able to flourish on a stable planet.

Keywords: *Wellbeing Economy, Consumption, Universal Healthcare, Population, Sustainability Indicators*

Our Preferred Future: A Wellbeing Economy

Tzatzanis-Stepanovic, Elli B.
Austrian Research Promotion Agency, Austria

´If you think the economy is more important than the environment, try holding your breath while counting your money.´ Guy McPherson (US scientist)

Five human made megatrends will have major impacts on our lives in the future, the climate crisis, socio-economic inequalities, urbanization, ageing population and digitalisation (UN Report, 2020).
The climate crisis goes hand in hand with a massive loss of biodiversity. Increasing socio-economic inequalities are the result of speculations, unfair trading and exploitation of workforce caused by profit-driven economies.Triggering reckless consumerism and supported by globalisation, the results are irreversible pollution of land and sea, degradation of nature, and massive pressure on water, energy and food security. All this for the sake of endless growth on a finite planet!

There are inevitable interlinkages between climate change, biodiversity loss, environmental degradation and public health and wellbeing. We need to support sustainable economies backed by just measures and fair policies, purpose-driven companies, and shared value between employers and employees. We need sustainable finance in long-term oriented businesses and investments in circular economy, nature-based solutions and restorative technologies (Reimagining capitalism in a world on fire, Rebecca Henderson, 2020).
Our prosperity and success cannot be measured by wealth on a dying planet. It is happiness and wellbeing around healthy nature, for us and our next generations (WEAll, Wellbeing Economy Alliance, Wellbeing Economy Policy Design Guide, www.wellbeingeconomy.org).

WEAll is a collaboration of organisations, alliances, movements and individuals working towards a wellbeing economy, delivering human and ecological wellbeing. A Wellbeing Economy is based on

- Dignity, so everyone has enough to live in comfort, safety and happiness,
- Nature, a restored and safe natural world for all life,
- Connection, a sense of belonging and institutions that serve the common good,
- Fairness and justice in all its dimension is at the heart of economic systems, and the gap between the richest and poorest is greatly reduced, and
- Participation, so citizens are actively engaged in their communities and locally rooted economies.

The government of Ecuador developed its first Wellbeing Vision and integrated it into the Ecuadorian constitution in 2008. (WEAll, Wellbeing Economy Policy Design Guide).
Their Wellbeing Vision from 2018 was: 'We want a society in which people can satisfy their needs, live and die worthily with social equality and justice, free of violence or discrimination and achieving individual, social and natural harmony'.

***Keywords**: Wellbeing Economy Alliance (WEAll), Climate Crisis, Socio-Economic Inequalities*

Building Anticipatory Practices. An Evolution Perspective to Support Social Inclusion in the Current and Future Labour Market

Ketonen-Oksi, Sanna
Laurea UAS, Finland

In today´s world, the ability to continuously learn, unlearn and relearn has become both a significant indicator of individual success and a resource for business renewal. Most importantly, the impacts of the thus achieved resilience are not limited to some local innovation systems, but to the global competitiveness of our cities and regions in large. That is, in Europe, many cities and regions have long suffered from a low availability of skilled and/or high-excellence workforce (Cedefop 2015; Eurochambres 2019) and the threat seems to have already materialised.

In this presentation, I will approach the topic from the point of view of building an inclusive future labour market – one that attracts and is supported by (im)migrant workers. In more specific, I will talk about an on-going research and development initiative where innovative, new ideas and solutions are collected, shared, and generated, with the aim to improve the level and reduce inequalities, and to promote social inclusion in the current and future labour market. In doing so, I will introduce an evolutionary perspective that not only looks at developments made

so far, or anticipates the emerging trends in the long-term, but builds on knowledge, experiences, and peer learning over generations. The question is: How to develop of the needed anticipatory practices (i.e., the evolution perspective)?

Keywords: *(Im)Migrant Workers, Social Inclusion, Labour, Futures*

How to Navigate Healthcare Systems into the Futures of Holistic Health & Wellbeing?

Karhu, Anna – Riina Hiltunen
University of Turku, Finland

Industrialization has dramatically changed our environment: the nature due to pollution and extensive use of natural resources, the society due to urbanization, technical and scientific developments, and the cultural cognition due to increased individualism. All these aspects have a profound impact on how we comprehend health and organize healthcare. The ongoing megatrend type of change patterns of digitalization, climate crisis, ageing and diversification of population, multipolarity of global powers, and the questioning of continuous economic growth as the core power of wellbeing are challenging the prevailing structures of our healthcare systems and understanding of health.

Healthcare systems have been developed to treat illnesses. Child mortality and the incidences of severe contagious diseases have been cut down by development of new medicines, developing treatment practices, as well as increased understanding of causes of illnesses. These developments have been organized strongly around hospitals and doctors, which are the core of healthcare services. As there are more abilities to treat illnesses and diagnose them, the demands for healthcare systems have increased. This again, has increased the economic burden for individuals and governments, creating wide array of businesses from flu preventing products, to health insurance services. Thus, today healthcare systems have the responsibility to look after the wellbeing of citizens, the workforce of our societies, which involves much more than just physiological health.

Health has central positon in our modern societies. As our understanding of humans as biophysical wholes and of diseases and illnesses has grown, also the abilities to influence one's health have increased. Thus, our perception of health has expanded towards more holistic understanding of health and wellbeing. Health today is not just about not having a disease or injury; it is more broadly associated with wellbeing, both physical and mental. Today, medical doctors and nurses do not only treat health in healthcare, but health is also taken care of at gyms, retreats and life management courses. Also at the society level, the scope of health has broadened to include societal factors such as clean food and water, air quality, working conditions, in addition to disease-related factors. Therefore, health today brings together a wide range of factors related to human wellbeing.
This paper seeks to explore the futures of healthcare and health presented in research and in global, regional and national futures visions, and reflect them with the ongoing megatrends to map out alternative paths for futures of organizing health and wellbeing.

Keywords*: Healthcare, Health, Wellbeing, Megatrends, Systemic Changes, Futures of Healthcare*

(HYBRID) Special STYLE Project Workshop

Towards more physically active lifestyles, Part 1,

Presentations

Time: Thursday 16 June at 9:00-10:45
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Petri Tapio

What If the Technological Transitions of Transport Will Increase Sedentary Travel?

Tuominen, Anu – Johannes Mesimäki – Esko Lehtonen – Henna Sundqvist-Andberg
VTT Technical Research Center of Finland, Finland

The electrification, automation and servitization of travel, also known as the three transportation revolutions (3Rs), constitute the major technological transitions altering present transport systems. The combined effects of these changes, such as whether they support or conflict with prevailing sustainability objectives, is unknown as each progresses its own path. Likewise, their health implications remain ambiguous. Based on literature findings, this presentation argues that the 3Rs and their combined effects may have negative overall health implications.

The transition from internal combustion to electrically powered motors offers a significant opportunity to reduce greenhouse gas emissions and improve air quality in urban areas. Meanwhile, automated transport is anticipated to reduce crashes and associated injuries. Automated vehicles may more efficiently utilise the road network, and novel Mobility-as-a-Service initiatives may increase the availability of transport services, promoting more equitable mobility opportunities for all. Despite these benefits, electrification, automation and servitization may encourage modal shifting from public and active travel towards motorised vehicles, increasing total vehicle kilometres travelled and decreasing daily physical activity. During the past decade in Finland, the share of active modes has decreased and the annual direct health care costs caused by inactivity have increased. Therefore, the positive developments detailed above may arguably occur at the expense of physical activity, which can lead to and exacerbate chronic illnesses such as obesity and heart disease.

Driving forces concerning the above include reduced travel time costs, as automation makes driving less demanding, freeing up time spent in the vehicle for other activities. The potential availability of shared automated vehicles may exacerbate modal shifting by decreasing thresholds to access, competing more directly with public and active transport. Additionally, vehicle kilometres travelled may further increase if electrification of vehicle fleets reduces the monetary costs of travel. The greater use of spatially demanding motor vehicles and reduced travel costs may encourage urban sprawl, expanding intra-urban distances and further lowering the competitiveness of public and active travel and their associated physical activity. Although the spread of electric micromobility modes such as e-bikes could increase physical activity, e-scooters may replace walking and cycling trips, and the relatively high crash risk of e-scooters and e-bikes may offset some of their potential health benefits.

The presentation will picture both the challenges and opportunities ahead for the three transport revolutions. Policy and planning measures to manage the potential negative health outcomes of the 3Rs are discussed.

Keywords: *Electrification, Automation, Servitization, Physical Activity, Active Travel*

Temporal Dynamics of Subjective Wellbeing in Commuting

Sandberg, Birgitta – Leila Hurmerinta – Henna Leino
Turku School of Economics, University of Turku, Finland

The subjective experience of wellbeing in commuting is of growing interest as policy makers plan the future of the transport systems. Past research indicates that commuting impacts on subjective wellbeing. However, the research focuses mainly on hedonic aspects of subjective wellbeing, that is, experiential and evaluative aspects of wellbeing, whereas eudaimonic aspects of subjective wellbeing have been given very little consideration. Furthermore, even though the temporal dynamics of subjective wellbeing in commuting have been acknowledged empirical studies have not yet addressed them. Consequently, the purpose of this study is to understand how pursuits for different types of subjective wellbeing manifest and evolve in commuting behaviour.

We utilise an exploratory approach and analyse the interview data on commuting collected from 108 individuals representing three different work places in two Finnish cities. Our findings reveal that different dimensions of subjective wellbeing are emphasised depending on the temporal aspects of experience: experiential wellbeing aspects are highlighted during commuting and evaluative wellbeing aspects are emphasised shortly after the commuting. Both of these relate to the instant rewards gained from commuting behaviour, and thereby to the hedonic wellbeing. However, in longer term the eudaimonic wellbeing aspects, such as sustainability and social relations, are highlighted and used to justify the commuting behaviour. This suggests that if we aim for long-lasting behaviour change in commuting we should consider both the hedonic wellbeing aspects related to instant reward and the eudaimonic wellbeing aspects related to justifications of commuting.

Our study contributes to the research on commuting behaviour by clarifying the role of temporal dynamics in the subjective wellbeing. For the policy makers our study offers a new wellbeing perspective on future transport policies beyond the common goals of facilitating commuting and decreasing negative effects such as pollution.

Keywords: *Wellbeing, Commuting, Hedonism, Eudaimonism*

Scenarios of Physical Activity Up To 2030: A Mixed-Methods Approach

Kiviluoto, Katariina[a] – Petri Tapio [b] – Ira Ahokas[b] – Minna Aittasalo [c] – Sami Kokko[d] – Tommi Vasankari[c] – Anu Tuominen[e] – Riikka Paloniemi[f] – Birgitta Sandberg[g] - Leila Hurmerinta[g]

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Sedentary lifestyles and the lack of physical activity (PA) are a major concern among all age groups, and current generations tend to be less fit than the previous ones. According to the World Health Organization, the global situation is alarming: one out of four adults and three out of four adolescents do not meet their respective targets of WHO recommendations. At the same time, there is an urgent need to cut transport-related carbon dioxide (CO2) emissions. The decarbonising potential of active travel (e.g. walking and cycling) is widely recognised especially in urban areas. Major gains can be foreseen if current car-centred lifestyles and sedentary behaviour are addressed from an integrated perspective. Although the health-related co-benefits of PA and active travel have been established, there is a lack of a comprehensive futures perspective, which would tie these two together and address the topic from a future-oriented lifestyle angle.

In this study, we explored future scenarios in the intersections of PA and active lifestyles as well as related environmental and health benefits. We used a Delphi approach to examine the topic in Finland. Although frequently used in health-related research, Delphi has rarely been used in exploring alternative futures or non-consensus. By identifying alternative futures, research may inform decision-makers to open up their thinking to various options instead understanding the future as something following a straight line from the present to the future. Building on the experts' perceptions on alternative futures, we built scenarios to guide future policies and provide support for decision making. We addressed the following detailed research questions: RQ1) What kind of scenarios of PA can be derived from Finnish experts' views of the future up to 2030? RQ2) What barriers and drivers do experts see in current efforts to promote PA?

The study design was based on a mixed-methods approach where we combined both qualitative and quantitative data analysis. Building on the experts' perceptions on alternative futures, we formulated four scenarios for PA up to 2030, which we named Mismatch, Empowerment, Fatigue and Balance. The scenarios may be utilised as guides in developing future policies and decision-making, and to build and to build socially and environmentally sustainable futures. Our scenarios demonstrate that alternatives do exist, and actions can be realigned. We may even avoid an undesirable scenario altogether.

Keywords: *Physical Activity, Active Travel, Active Lifestyles, Scenarios, Delphi, Mixed-Methods*

Escapism or Integration? Family Constellation Reflecting on the Physical Activity Engagement

Leino, Henna M. – Leila Hurmerinta – Birgitta Sandberg
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Inadequate physical activity is a current and future threat to national health almost globally. A sustainable society depends on individuals' health and well-being in order to remain functional. Therefore, it is essential to study the motivating and demotivating factors of physical activity in order to understand how the physical activity engagement (PAE) could be increased. There is a wide range of studies on adults' PAE but the impact of family constellation is under-researched despite its obvious impact on everyday life. Existing studies focus on the mediating role of family in health interventions, instead of exploring the family and PAE as such. In the cases where the focus is on family, the interest often concerns the adult influence on child PAE and only rarely the family constellation's influence on adult PAE. The purpose of this study is to respond to this gap by gaining understanding of how the family constellations reflect on PAE.

We explore this by studying individuals' self-reported motives and behaviour. The data consists of semi-structured interviews (104 working-age individuals in two Finnish cities) where projective techniques were employed to elicit multidimensional recall and self-report among the interviewees. The data was first coded with case classifications (e.g. age, gender, family and living) and next, the answers regarding the role, motives and barriers for PAE were coded in NVivo. A mixed-methods analysis was performed. First, we conducted quantitative analysis on the correlations between family constellation and PAE. Second, we performed a qualitative analysis on how the correlations appear in the data. Based on the analysis, we developed a model to describe how the family constellation is connected to the motives and forms of PAE.

The results indicate that individuals have escapist and integrative motives for PAE. The relationship between these motives and their consecutive physical activities seems to vary dynamically, depending on the family constellation. The detected forms of behaviour include solitary escapism, co-escapism and integrative activities (the last sometimes being integrative escapism).

The results of the study contribute to the PAE literature by highlighting the dynamic role of family constellation on the everyday physical activity motives and behaviour. The public and private actors can take the underlying escapist and integrative motives and the resulting forms of behaviour into account when developing future services that aim to increase PAE, especially on a family level.

Keywords: *Physical Activity Engagement, Family Constellation, Motives, Escapism, Integration*

Individuals' Agency in Forming Physical Activity Experiencescapes

Hurmerinta, Leila – Birgitta Sandberg – Henna Leino
Turku School of Economics at the University of Turku, Finland

The evidence on the benefits of physical activity (PA) is compelling. It is widely acknowledged to contribute to health, well-being, and decreased societal costs. Consequently, the determinants of PA, such as characteristics of the individual, of the social and physical environment, of the intervention, and of activity itself have been extensively studied. However, the existing literature is surprisingly silent on the experiences relating to PA and its environment even though the research indicates that positive experiences are important for establishing regular physical activity. In the future the individuals will increasingly shape their experiences.

The consumer experience concept highlights subjectivity and interaction with the environment, and locates in the minds of individuals. Experiencescape refers to the physical space where the experience is anchored; it is often pivotal in the overall experience. Experiencescapes have been studied, for example in service fields (such as servicescapes) and tourism. However, they tend to see settings as bundles of static and exogenous elements created for customers, thereby largely neglecting the constant interaction between the actor and the surroundings. This research analyses how the PA experiencescape is formed by an individual's agency. The focus is on an individual's relationship and interaction with the environment when having physical activities.

We applied an interpretive approach to explore interviewees' interactions, meanings and affects related to the PA environment. The data contained 74 interviews in two different workplaces (an elementary school and a shopping

mall) in a city in southern Finland. We applied the established Gioia-method for coding the data into different categories; the experiences were classified relating to PA itself, and to the environment within which the physical activity was performed. Then the environment-related experiences were further elaborated and coded, based on individuals' experiential relationship with the environment during physical activities, by employing QSR NVivo12.

We found three major experiencescapes that guide individuals' choices: Behavioral experiencescape - from consumption to cocreation, Cognitive experiencescape - from control to freedom, and Affective experiencescape - from a vacuum to an interplay of senses. The research increases understanding of individuals' agency in their experiencescape. At the end, individuals become designers of their own experiencescape through interactions with PA environments. They search for environments that produce the circumstances offering the ground for the most enjoyable PA experience. This, however, throws a shadow over the future – it is essential to consider how the climate change and pollution might affect our future experiencescape and search for alternatives.

Keywords: *Experiencescape, Physical Activity, Environment, Agency*

SESSION II at 11:00–12:30

Futures of Lifestyles – Relation to Physical, Mental, Social and Environmental Health

Time: Thursday 16 June at 11:00–12:30
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Jarmo Vehmas

Transformative Scenarios for 'Sustainable Wellbeing': Cutting the Gordian Knot Of 'Over-Consumption'

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The proliferation of high material consumption, sometimes termed as 'over-consumption,' is damaging both to human wellbeing on the individual level, and also to social equality. At the systems level, through driving material consumption -and related greenhouse gas emissions- it has major implications for our ability to prevent climate and ecological breakdown in the 21st century. As this high consumption pattern deepened and spread, sustainable consumption and production (SCP) policy primarily responded by focussing on production efficiency and consumer habits. It is now accepted that this approach is not sufficient, and remaining within planetary boundaries will require a reduction in absolute demand amongst the highest consumers. While controversial, achieving this outcome offers opportunities for win-win outcomes, through synergies across sustainability and wellbeing. To cut the 'Gordian knot' of over-consumption, and improve sustainability and wellbeing at the same time, transformative systems change is crucial. This requires reconceptualising development paths, anchored in new visions and values and framed and implemented through new policy instruments.

This study considers transformative systems change, through future scenarios that could enable 'sustainable wellbeing.' The scenario narratives explore alternative paths to current trends and dynamics, which are then quantitatively modelled through an Environmentally Extended Input-Output (EEIO). The model determines the implications for key quantitative environmental outcomes, of greenhouse emissions and material consumption. The model is structured in a two-region configuration, to consider the former EU- 28 and the Rest of the World. It includes the emissions and materials embedded in traded products and services, known as 'consumption-based accounting,' to include the full footprint of demand. The combination of qualitative and quantitative scenarios provides the methodological diversity to analyse qualitative system shifts in quantitative outcomes. The conceptual innovations are potentially significant from individual wellbeing, to related sustainable planetary futures.

Keywords*: Sustainability, Wellbeing, Scenarios, Transformation, Consumption, Greenhouse Gases*

Do It for Your Environment - But Most of all For Yourself!

Lovászy, László Gábor
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It is a well-known fact that global warming is more or less a long-term threat, especially for future generations. We have perhaps passed the last wave of COVID-19 and are able to draw some relevant conclusions about it. However, I am not sure if we have realized that being overweight, on the other hand, will also be an extremely important issue in terms of fighting against climate change in the long run. The aim of this discussion is to point out to the importance of healthy lifestyles for the better protection of the Earth. Why? Because our overconsumption in terms of overeating has completely been neglected so far when discussing climate change. (As we shall notice, during the COVID-19 it has already taken us to the grave, too - see the links between the coronavirus epidemic and being overweight (World Obesity: COVID-19 and Obesity: The 2021 Atlas – The cost of not addressing the global obesity crisis).
Being overweight means not only our uncomfortable lifestyle and health-related obstacles regarding freedom as well the capacity of our bodies but also animals that are killed unnecessarily, not to mention the unnecessarily overgrown plants and vegetables with high need (overseas) logistics (see e.g. palm trees plantations).

Nevertheless, the fight against overweight can bring significant results in the short term, as well as an increase in healthy life years with a higher level of productivity. The consumption of high-calorie foods, low consumption of vegetables and fruit, significant added sugar, overeating during meals, and unplanned snacks all play a major role in the development of overweight and obesity, thus disrupting the normal functioning of metabolic processes leading to developing disabilities. According to a report of the International Sport and Culture Association (ISCA), it revealed that inactivity has become a greater health risk in the EU (obesity, illness, etc.) than smoking itself, showing that sedentary lifestyles cost practically more than 500,000 Europeans a year in terms of their early deaths. In relation to this, according to its government, France plans to spend almost € 450 million over the next 5 years to promote a nutrition-friendly but sustainable diet.

Programs and measures are needed to promote health-conscious behaviors, and - through the school system - children should be educated on the subject since they currently are going to be the next generation of over-consumption. In addition, global warming will lead to more frequent outbreaks of pandemics due to diminishing ice caps and deforestation - the immune systems of obese people are much weaker against pandemics and the health care system is only 10 percent responsible for preventable deaths in general. Covid-19 has shown that in many European countries, the population does not generally take advantage of the opportunities offered by health screening whilst that is clear, many chronic diseases are caused by overweight. Mortality rates from diseases of the circulatory system are also critical in the EU, not to mention the high rate of daily smoking in many Member States, and even alcohol is a critical factor among them.

A sedentary lifestyle, therefore, is also a serious risk factor, and the consumption of sugary soft drinks is also critical. It is also a less known fact that obesity, especially from the age of 50, increases the risk of developing dementia, which will be the leading disease by 2050 in the EU. This is also a critical issue because the median age in the EU is already over 45 years now.

And finally, the emerging issue of brain implants will also be critical in modern societies regarding metaverses and modern technologies in rehabilitation when it comes to self-image (and satisfaction of ourselves) and (the lack of) incentives for sport activity in virtual worlds, because we may be even more exposed to these aforementioned threats as well.

***Keywords**: Obesity, Overconsumption, Sustainability, COVID-19, Public Health, VR*

Eco-Anxiety and Ecosystem Scenarios - Healthy Human-Nature Relations through Integrated Social Capital Formation and Natural Capital Preservation

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Global environmental changes are causing major ecological shifts which can impact the mental well-being of people. Growing ecological uncertainty and related eco-anxiety can cause feelings of helplessness, frustration or loss, which

may transform into a shared awareness of them as social problems. Collective coping with environmental uncertainty thus demands the handling of future-related environmental fear and insecurity in a constructive, solution-oriented fashion, restoring human agency for mutually beneficial human-nature relationships.

For organizations, environmental uncertainty has increasingly stressed the need for risk assessment and discourse to maintain a socioecological basis for mindful environmental decision-making and management, also with a focus on integrated maintenance of environmental and human health. In this respect, ecosystem scenarios provide alternative socioecological futures images as orientation knowledge for environmental decision-making.

Inclusive, participatory scenario building as multi-stakeholder designs can help build social capital such as trust, identification and social cohesion among participants of ecosystem scenario processes. Thus, improving stakeholder relationship-building among each other and with the research subject mark a distinct quality feature of ecosystem scenario processes as social capital formation.

To support this, the paper derives novel impulses for scenario frameworks from social theory, specifically combining aspects from Luhmann's theory of social systems and Bourdieu's forms of capital. It argues that attending to basic relations of social power and organizational decision-making as mode of social system reproduction, ecosystem scenario processes can better combine social capital formation with natural capital preservation.

Ecosystem scenarios provide praxis stakeholders with a tool for environmental uncertainty absorption by integrating biophysical, socioeconomic and cultural values. Therefore, including personally meaningful information in scenario building helps identify desirable futures images as environmental futures approach, which can encourage pro-environmental decision-making and policies for natural capital preservation as relational practice.
Related article: Weh L, Weil C, De Haan G, Leinfelder R (under review). Ecosystem scenarios integrate social capital formation with natural capital preservation in environmental decision-making. People and Nature.

***Keywords**: Ecosystem Scenarios, Environmental Futures, Natural Capital, Social Capital, Multi-stakeholder Process, Relational Futures Images*

Societal Shift - Rising a Quantum Integrative Archetypal Agency

Corsi, Patrick
IKBM Sprl, Belgium

Over the eighties, an Air Force combat loop « Observe situation/Orient meaning/Decide/Act » led to coin the VUCA acronym, standing for volatile, uncertain, complex, and ambiguous. The model led to exercising efficient business leadership strategies and is in continued use today, all the more symptomatic of what societies have valued since, optimizing local chances for survival or supremacy by acting just right, just now - an altogether, long-standing Newtonian worldview.
We show that, by today, volatility has largely engendered Impermanence in most human endeavors. While uncertainty evoked probable and possible futures, these have become by and large Unknown. Meanwhile, societal complexity levels clearly raised by some order of magnitude. Sooner or later, dynamics therein became systemic, with accent on Systemic Complexity. Consequently, the degree of ambiguity in determining things (in space) and events (along time) generated many shades, massively slipping into Indetermination. As a result, the original VUCA model falls short of representing the current state of constituencies, replaced by IUSCI frames which emergence reveal accessible quantum properties.

Globally, a society is a living thing with continuity in content, collectively expresses inclusive thinking, moods, even intuitions. Through achieving flow states, society expands the consciousness of individuals in shared ways: these coalesce, experience internal non-locality.

Moreover, societies are armed with core invariants. Belonging is the first foundational relational capacity between individuals and collectives, towards finding common raisons d'être. Second, Social cohesion arises as collective myths of some nature transcend instinctive behaviors, create collective patterns of diversity, allowing dynamic coherence and cementing societal resilience. Third, to socially perform, individuals are coupled to their communities through Statutory protection.

The three invariants constitute genuine archetypes relinquishing the randomness character of primitive settings. Together, they reveal a higher societal self which roots values and guide responsible representatives in charge as

well as the evolution of their jurisdiction. They transcend causal time-space governance bearing meaning for individual, collective, and planetary orders — the unchangeable sites of a society —, forge new causal links through vitalizing interactions. Public and private governance revive by aligning individual and collective consciousness with the societal system, bringing authentic transformation, forwarding an entangled society.

All these quantum properties propose a generic societal paradigm which leaves a dominant deterministic thinking and hierarchically rigid structures behind. Thus, integrating pluralities of contextual views and experimenting upper futures for all.

Keywords: VUCA Model, Societal Archetypes, Quantum Physics

Workshop

Designing Planetary Futures – Futures Design as a Method

Time: Thursday 16 June at 11:00-12:30
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Facilitators: Johanna Kippo and Minna Koskelo

Kippo, Johanna[a, b] – Minna Koskelo[b]
[a] Laurea UAS, Finland
[b]Yksitoista Helsinki Oy, Finland

The dominant linear economic model presents an undisputed burden to the environment. As several planetary boundaries have been dangerously overshot, there is a growing pressure to reform the current economic system and the ways of doing business. The role of companies is essential in designing and acting for planetary futures. The idea of a circular economy offers a sustainable way of doing business and a systems transformation.

Yet, at a company-level a transition towards circular models is challenging. SMEs form the majority of Finnish businesses but they often lack foresight capabilities, resources for a transformative learning and development process and understanding of circular business models. SMEs undoubtedly have a relevant role to play in the circular economy, so how might we help the SMEs to explore and design desired planetary futures.

We present a study where the focus is on futures design and developing a foresight-driven model for co-creation to support companies in their endeavor of circular transformation. Futures design is a participatory, human-centric domain, which includes business service design, foresight and coaching approaches. We argue that participatory, experiential human-centric design is needed to bring alternative and preferred futures closer to organizations' strategic planning. Futures design offers a means to learn about and co-design desired futures.

We present a process where a futures design approach has been used in designing a workshop model for SMEs to explore a circular economy future. The model relies on vision-building and alternative scenarios that have been created in a Delphi process with more than 30 participants. The scenarios, when used in co-creative workshops with common service design tools, can help SMEs to form inspiring visions and to identify new opportunities.

The potential of futures design lies in offering new ways for building shared understanding and discussion. It promotes change starting from an "opportunities perspective" rather than of a "threat perspective", having potential to inspire change, boost innovation, open new business opportunities and improve resilience through its collaborative learning process. Moreover, its user-centric approach emphasizes finding the best process to suit each company's needs, helping to target solutions and build commitment.

In our workshop we offer participants a chance to test and provide feedback on one or more tools designed for SMEs to explore the circular opportunities. By presenting and discussing views on their potential we wish to co-explore a way towards better incorporating futures design and circular principles in business renewal processes.

The feedback received may be used in a Master's Thesis."

Keywords: Planetary Futures, Circular Economy, Methods, Futures Design, Scenarios, Vision

Workshop

Futures Literacy Programs for Smart City Wellbeing: Local and Global Issues

Time: Thursday 16 June at 11:00-12:30
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Facilitator: Tatiana Yakubovskaya

Yakubovskaya, Tatiana[a]– Yulia Pavichenko[b] – Vera Danylova[c] – Olga Vasilieva[d]
[a]Finnish Society for Futures Studies, Finland
[b]Private School “Lyceum MIR” of Kharkiv. Rotary club "Kharkiv Nadiya", Ukraine
[c]Network "Interactive Questioning Lab", Ukraine
[d]Network “School for Entrepreneurs”, Spain

The interactive workshop “Futures Literacy programs for Smart City wellbeing: local and global issues“ will be devoted to discussing the regional specific of content and forms of Futures Literacy programs and models of futures-oriented school education and vocational training.
Over the several years, this type of an education comparative analysis has been conducted by international networks for conceptualization the versions of “future-oriented education, FOE” around the topics of the “spirit” of different regions within the generally accepted regional smart city’s strategic priorities:
I. Technologically more intelligent future.
II. Sustainable way of life.
III. Future entrepreneurship.
The key regional aspects give the foundation to coordinate the futures literacy programs for different stakeholders and target groups of different regions: how different regional attitudes, visions, scenarios, strategic programs and roadmaps should be argued, agreed, and integrated both in local and global contexts of education.
Therefore, the range of workshop questions is based on the regional experiences (from Finland, Ukraine, Russia, Spain) with some developed analytical models of comparative case study. The conversation will be focused on the ecosystem approach to the regional specificity of futures-oriented educational practices and futures literacy programs in contexts of the concepts of Futures Literacy and Future-oriented education, Smart City Ecosystem and Quality of Life.

Keywords: *Futures Literacy, Future-Oriented Education, Education Comparative, Smart City Ecosystem, Quality-Of-Life*

(HYBRID) Workshop

Practical Futures Guidance for Youth Work and Education

Time: Thursday 16 June at 11:00-12:30
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Facilitators: Antti Rantaniva & Ville Eerikäinen

Rantaniva, Antti – Ville Eerikäinen
Xamk, Juvenia Youth Research and Development Centre, South-Eastern Finland University of Applied Sciences, Finland

Nowadays it's easy to find various scary visions regarding global future from the media news stream: there's a lot of discussion about war, environmental crisis, economic collapses and countless other serious threats. How could we put more effort to also highlighting all the opportunities and potential positive developments that are just as equally possible?

According to recent research, young people's faith in the future has collapsed. Traditionally, the younger generations have been more optimistic about the future compared to the elder ones, but now the roles have even been reversed. Antti Rantaniva and Ville Eerikäinen from Juvenia Youth Research and Development Centre (South-Eastern Finland University of Applied Sciences, Xamk) are developing future coaching targeted especially for young people. The aim of the coaching programme is to discuss about the future and different phenomena that are affecting our future and to consider what kind of future would be desirable and, on the other hand, undesirable. The key objective is to strengthen young people's faith in the future as well as their agency and to enhance their abilities of futures thinking. We want to strengthen individual's understanding of what would be a "good future" for them on a personal level and then encourage them to take initiative to strive for those goals.

In this workshop, we will present the key principles behind our coaching programme and discuss the elements that have made the coaching successful for high school students, youth workshop and outreach youth work clients as well as university students. We will focus in particular on the use of youth work methods and non-formal learning as part of our coaching programme such as games and other participatory activities. You can get acquainted with e.g. to the board game we have developed as a tool for the futures guidance of young people. Join us to learn how to help young people embrace the future!

***Keywords**: Lifestyles, Young People, Futures Guidance, Futures Coaching*

(VIRTUAL) Special STYLE Project Workshop

Mental Time Travel towards More Physically Active Lifestyles, Part 2

Time: Thursday 16 June at 11:00-12:30
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Facilitators: Essi Silvonen and Johanna Lamberg (virtual)

Note: While the first part of the STYLE workshop will be held in hybrid mode, the second part will be divided, with the in-person attendees staying in Aavameri and the virtual participants using the Zoom link above.

Ahokas, Ira – Petri Tapio – Essi Silvonen – Johanna Lamberg
Finland Futures Research Centre, University of Turku, Finland

Decreasing physical activity (PA) and fossil-fuel based mobility are both global sustainability challenges. The World Health Organization (WHO) has initiated the Global action plan on physical activity aiming to achieve health, economic and environmental benefits that contribute to the sustainable development goals (SDGs). Although the importance of PA has been recognized, it is evident that strategies created and actions implemented in regional and local levels have not been able to tackle the major obstacles and challenges of active lifestyles. Therefore, we need both inter- and transdisciplinary approaches to better understand mechanisms, solutions and policies that support lifestyle changes. Integrating discussions of PA and active travel has significant potential for increasing active lifestyles and sustainable growth. The transition towards healthier and active lifestyles could reduce public health costs and CO2 emissions while creating new, sustainable business opportunities.

First part of the session features a group of invited speakers from the STYLE project introducing latest studies and results on the themes related to lifestyles of increased PA and active travel. This is followed by a facilitated discussion with the audience.

Proposed speakers and titles of the presentation:

- Anu Tuominen et al.: “What if the technological transitions of transport will increase sedentary travel?”
- Birgitta Sandberg: “Temporal dynamics of subjective wellbeing in commuting”
- Katariina Kiviluoto et al.: “Scenarios of physical activity up to 2030: A mixed-methods approach”
- Henna Leino: “Escapism or integration? Family constellation reflecting on the physical activity engagement”
- Leila Hurmerinta: “Individuals’ agency in forming physical activity experiencescapes”

Second part of the session invites the audience to take part in co-creating new ideas and viewpoints of futures of active lifestyles. We conduct a futures workshop using mental time travel method to find new service and product solutions supporting PA and active travel. Mental time travelling is an example of a method that enables participants to think disruptively rather than just extrapolating from the past. It puts participants in a state, where they can ‘see’ and even ‘feel’ visions of the future.

The two-fold objective of the session is to encourage future oriented, inter- and transdisciplinary discussion of the topic, and to introduce a workshop method generating insights of novel solutions supporting lifestyle changes by opening up the minds of participants to long-term thinking.

The session is hosted by the STYLE (Healthy Lifestyles to Boost Sustainable Growth) research project that is funded by the Strategic Research Council at the Academy of Finland.

***Keywords**: Lifestyles, Physical Activity, Active Travel, Health, Futures Workshop*

SESSION III at 13:30–15:00

Societal Structures and Individual Agency – The Need for Systematic Change

Time: Thursday 16 June at 13:30-15:00
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Hanna-Kaisa Aalto

Anticipatory Commons Governance Framework for Risk Reduction and Resilience Building

Dupont, Donna
Purple Compass, Canada

This abstract is based on the futures research project Anticipation in Emergency Management: Shifting from Crisis Response to Shaping Future Resilience.

There is a need for the field of emergency/disaster management to shift from managing disasters, to managing current and future risks, and building resilience as core targets to be reached by 2030. This is an evolutionary paradigm shift. A conceptual transformation that can be viewed as a prototype for revolutionary reorientation.
Extreme weather events and the risk of failure of mitigation and adaptation by government and businesses are growing concerns. Disasters frequently exacerbate social inequalities and existing power dynamics, and exposure and vulnerability are on the increase. Anticipating future risks and engaging in disaster risk reduction behavior is critical for human survival.

This paradigm shift requires the ability for the system to not only bounce-back after an emergency or disaster, but also to build forward, envision and achieve a resilient and prosperous future. This requires the ability to bridge two different mindsets – a vulnerability, mitigation risk/survival mindset, and an opportunity/growth mindset for system transformation in a rapidly changing world.

This paper presentation will focus on the following: the system archetype Tragedy of the Commons from a social and environmental perspective; key fundamental shifts for self-organization of the system to achieve resilience; and the important role of an anticipatory commons governance framework. This framework can serve as a structure to support a revolutionary reorientation of the system that builds social capacity, through a citizen/community participatory process to support decision-making, reduce risk and build local resilience. Anticipatory governance taps into diversity to harness the intelligence and wisdom of its citizens to become agents of change and chart intelligent new directions and pathways for their community. Diversity and community representation in disaster recovery planning and resilience building is important for good governance to achieve socio-ecological resilience. This includes addressing colonial legacies and patterns, the disparity in disaster preparedness and recovery, long standing inequalities in disaster response policies and gender-sensitive approaches.

***Keywords**: Paradigm, System Archetype, Anticipatory Governance, Social-Ecological, Risk Reduction, Resilience*

Mobilising Feminist Futures for Radical Interventions

Engeler, Bridgette
Swinburne University of Technology, Australia

The global pandemic has galvanised many people to reconsider various aspects of our lives and livelihoods, including our ecological, economic, political and social futures. But not everyone has the capacity to anticipate, plan for or action necessary change.

If futures studies and futures practice drive futures worldbuilding (the imagining and inception of multiple, different alternative futures) then feminist, situated ethics (a response-ability for the world-making we participate in) must be embraced in futures thinking and practice.

Feminist futures practice creates sites of rehearsal for performing and conceiving differently, acknowledging past injustice and inequality while anticipating and influencing multiple alternative futures. There are implications for how this practice is designed, facilitated and materialised: anticipation can lead to repetition and ritual, or the physical enactment of what is anticipated, and social norms are repeatedly reinforced when the subject is called upon, hence the need for intervention to shift the enactment and performativity.
Butler defined anticipation as the knowledge that one will be called into being by another into a certain subject position in society. The anticipation of what is expected also has the power to become entrenched in the psyche; people can think of themselves as being that which they are called to perform (Butler, 1997). Only by bringing situated feminisms into the practices of anticipation, futuring and strategic foresight, can we challenge the repetitive and difficult effort of depicting normative futures, prevent reproduction of everyday inequalities, and imagine more just and preferred futures in which people do not feel called to perform.

The link between futures studies and futures practice, and speculative fabulation and situated feminisms is evident: while speculative fabulations may be crucial tools for imagining futures that are radically different from the world we inhabit now, situated feminisms bring attention to the dynamic specificities of myriad situated knowledges (Haraway 2020). Situated knowledges are immanent and critical to an event; they are relational, and account for intersectional markers such as race, gender, sexuality, class, ability and age.

This paper highlights the powerful and significant intersection of futures and feminism, and explore why a commitment to intergenerational and intersectional feminist anticipatory approaches is required to move toward more just futures for all. The author considers radical interventions in practice for decolonised, futures-focused feminist collaboration across generations, and for intersectional feminist interventions in the cultural, structural and institutional systems that prevent innovative solutions to persisting problems of gender inequality.

***Keywords**: Feminist Futures, Intersectional Futures, Futures Practice*

Transforming Nursing for Climate Justice

Cook, Cara[a] – Jessica LeClair[b] – Robin Evans-Agnew[c] – Katie Huffling[a]
[a] Alliance of Nurses for Healthy Environments, USA
[b] Madison School of Nursing, University of Wisconsin, USA
[c] School of Nursing and Healthcare Leadership, University of Washington, USA

Nurses practice in partnership for healing at the frontiers and frontlines of human experience. Nurses recognize human beings' health as emergent from the environment throughout the life process, and partner with individuals, families, communities, and ecosystems who experience the consequences of human and planetary injustices. Nurses are the most trusted health profession and constitute the majority of the global health workforce. Nursing is a logical starting point for transforming public and environmental health for climate justice in the face of global environmental change and planetary health crises.

The Alliance of Nurses for Healthy Environments (ANHE) is a non-governmental organization focused on elevating the nursing voice on issues relating to planetary health. ANHE's mission is promoting healthy people and healthy environments by educating and leading the nursing profession, advancing research, incorporating evidence-based practice, and influencing policy. The purpose of this paper is to describe the processes currently employed by ANHE to develop and advance a global agenda for climate justice in nursing. Applying a logic model framework, we identify key resources and activities implemented by ANHE to mobilize the nursing community in advancing climate justice. We describe current outputs that include a published agenda for climate justice, nursing education that addresses environmental justice, and identify short, medium and long-term (500+ year) outcomes encompassing a just transition for planetary health including health system redesign; movement building for climate justice policy change at regional, national, and international levels and arenas for action; changes in nursing culture, philosophy, methodology, and ethical considerations. We discuss the potential for broad involvement of the health community in international planetary health conversations, referencing the inclusion of nursing and health programming at the United Nations Climate Change Conference (COP26). We describe lessons learned from international collaboration and identify future challenges and opportunities for engaging all nursing in the regeneration and wellbeing.

***Keywords**: Climate Justice, Global Nursing, Planetary Health, Just Transition, Public Health, Global Health*

Dark Planet: Rethinking the Futures of Multispecies Places

Dunn, Nick
Lancaster University, UK

Light is everywhere, often uninvited as a by-product of our contemporary lives. Darkness meanwhile appears unwanted, yet is essential to our health and wellbeing, other species and our planet. We currently use more resources than can be sustained and need to fundamentally rethink our relationship with darkness. The plethora of new agendas promoting health and wellbeing in cities meanwhile are accompanied by visions of clean, green and daylit urban environments. They say nothing about how we might promote health and wellbeing at night or the multispecies city after dark. How might we move towards a darker planet to protect biodiversity and reduce the cascading impacts of artificial light at night?

Since the Enlightenment, Western culture in particular has been intrinsically bound with ideas regarding illumination and a reductive world-view that does not account for the diversity of experience apparent around the world. In the context of many city centres around the world, darkness is now unwanted, connected as it is to negative cultural and historical associations alongside contemporary perspectives of fear and crime. Values of light, clarity, cleanliness and coherence have since been transferred across the global experience of culture more widely, resulting in a worldwide decline of the 'nocturnal commons' to which urbanisation has significantly contributed.

When we consider what futures are possible or plausible they tend to direct us to visions of either a shiny, frictionless world which is light and bright, or at the other end of the spectrum they are the fearsome, shadowy dystopias where darkness is vital to their encounter. This paper examines a third way, where we reconsider ourselves, our world and other species we share it with differently. It proposes a new philosophy in which gloom is reclaimed as an emancipatory place for positive thought and creative expression to move us toward a sustainable and healthy environment for all collective life – a dark planet. In doing so, it aims to set out a new pathway for fostering the conditions and behaviours that enable human and nonhuman life to flourish together.

***Keywords**: Futures, Darkness, Planet, Multispecies, Wellbeing, Place*

Peru 2050: Alternative Long-Term Scenarios

Ataucusi Ataucusi, Yiem – Hans Stehli Torrecilla – Milagros Estrada Ramos – Jordy Vilchez Astucuri
National Center for Strategic Planning, Peru

In this document, six plausible long-term scenarios are narrated for Peru with a time horizon of 2050. Five of the six scenarios focus on the occurrence of particular events, these are: (i) a major disaster (earthquake and tsunami in the city of Metropolitan Lima), (ii) a global economic crisis, (iii) a social crisis, (iv) a technological disruption due to accelerated innovation and technological development, and (v) an environmental disruption due to the failure to mitigate climate change. climate. The sixth narrative corresponds to the normative scenario that describes the realization of the Vision of Peru by 2050. Each of the future narratives has been formulated considering future trends and events prioritized and linked together in a coherent manner through causal relationships. Likewise, the scenarios have been complemented using long-term quantitative estimates to more easily visualize the implications of each one. These scenarios are expected to be useful for prospective analysis during the formulation of policies and plans.

For the construction of the alternative scenarios, the methodology proposed by The Futures Group (2004) was used. This methodology suggests the development of three consecutive stages: A) preparation, B) development and C) report and use; however, the Ceplan has broken down these three stages into six phases, which are directly related to the Planning Cycle for Continuous Improvement (Directive for Updating the Strategic Plan for National Development). The six phases for the construction of the alternative scenarios are as follows:
1. Definition of the domain of interest.
2. Current state of the system
3. Definition of the key dimensions
4. Definition of the events
5. Impact of the events on the key dimensions
6. Narration of the scenario
In this sense, considering that the construction of alternative scenarios is based on the recognition of the driving forces or also called disruptive events, which nurture systematic studies and enhance future possibilities of impact

on national development, it is used the T21-CEPLAN model, which projects the probable impacts of certain events on the prioritized variables of the social, economic, environmental, institutional and political dimensions, according to the axes of the Vision of Peru to 2050.

Keywords: Foresight, Scenario, Dynamic System, Planning

Workshop

Biodigital Today and Tomorrow: Exploring Innovations, Drivers, and Shifts towards a Biodigital Era

Time: Thursday 16 June at 13:30-15:00
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Facilitators: Pierre-Olivier DesMarchais, Evan Larmand and Avalyne Diotte

DesMarchais, Pierre-Olivier – Evan Larmand – Avalyne Diotte
Policy Horizons Canada, Canada

Biological and digital systems are coming together in profound ways, creating a new domain called the biodigital. Digital technology and living things are increasingly able to communicate with each other. We are able to embed digital technology in living organisms, and incorporate biological components in new technologies. In this presentation we are going to explore how biodigital convergence could change five sectors: food, health, environment, security, and manufacturing.

Traditional agriculture relies on land, water, and a suitable climate. In the future, we could manufacture many food anywhere, in labs and indoor vertical farms. Healthcare has operated mainly as a reactive system – seeking to treat illness, rather than maintain health. Biodigital convergence could rapidly advance targeted treatments, precision and personalized medicine based on genomic profiles, leading to much improved, targeted preventive care as well as highly efficient treatments for disease. Climate change and biodiversity loss are widely recognized as urgent global issues. Biodigital capabilities could increase our capacity to connect with and monitor the natural world with the aim to reduce pressure on ecosystems and to help mitigate and adapt to climate change. Emerging biodigital innovations and capabilities are creating new frontiers and possible concerns in the field of security and defence. With the rapid declining cost of DNA sequencing, a large amount of biodata could be generated over the next decade. This bio-data could be used for biosurveillance in the future. Manufacturing has historically been based on factory work by labourers who transformed natural resources that were initially extracted from mines, forests, and waters, or grown on farms. Biodigital convergence could transform the natural resource sectors through new ways to make or harness raw materials and fuels, how they are obtained, and the techniques used in manufacturing, potentially reducing pressure on natural resources.

In the coming years, we may be programming biology like we currently program technology. Biodigital convergence opens up new perspectives on what makes for an ideal location for human settlement, what our ethical responsibilities to the environment are, and other opportunities to take charge of our individual identities and evolution as a species. We may face new dilemmas: how should we coordinate international approaches to regulation, to avoid countries embarking on experiments with potential consequences that could cascade across borders? What implications will new possibilities for human augmentation have on equity and discrimination?

Keywords: Biodigital, Biodata, Biofoundry, Bioalternatives, Biosecurity

Workshop

Ranting, Cartooning, And Memory to Innovate for The Long-Term

Time: Thursday 16 June at 13:30-15:00
Facilitators: Bettina Koelle and Nicolas Balcom Raleigh
Note: You can find the Zoom Link on our virtual Platform ProspectumLive

Koelle, Bettina[a] – Nicolas Balcom Raleigh[b]
[a] Red Cross Red Crescent Climate Centre, South Africa
[b] Finland Futures Research Centre - University of Turku, Finland

Climate change is happening. Often Climate Change is experienced as sudden extreme events, however we are experiencing a long term transition leading to many slow onset events. To help communities which are particularly vulnerable to these slow onset harms innovate and adapt, the Red Cross Red Crescent Climate Centre has developed a range of innovative interactive tools which help people explicate their hopes and fears, and reframe the present. This demonstration workshop will showcase three virtual tools: Rant, Cartoon Gallery, and a Time Capsule engagement. Participants will try these tools together, learn about how they have been applied, and discuss their potential value in promoting planetary well-being over long-term futures. Please note, RCRC will present virtually. In-person participants will need their own laptop, tablet or smartphone in order to try the tools.

***Keywords**: Long-termism Tools, Climate Change, Slow-onset Events, Adaptation*

(HYBRID) Special Millennium Project Session

Anticipatory Governance to Boost Crisis Preparedness – What Policy Actions Needed for Resilient Cities and Human-Friendly AI?

Time: Thursday 16 June at 13:30-15:00
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Sirkka Heinonen

Heinonen, Sirkka[a] – Jerome C. Glenn[b] – Osmo Kuusi[c, a]
[a] Finland Futures Research Centre, University of Turku, Finland
[b] Millennium Project, USA
[c] Aalto University, Finland

Our planet is in a turmoil. We are living in the treadmill of several crises – natural, financial, political and most recently the crisis brought by the COVID 19 pandemic. Climate change and loss of biodiversity are exacerbating the ecological Anthropocenic emergency we are in. We humans have now two massive issues to deal with. Constructing cities worldwide is a megatrend that has a huge impact on nature, on the use of natural resources, as well as on our health and wellbeing. Such impacts are too often detrimental. For these reasons, we should be addressing and modifying the built environment (land and space use) as a rescue for us in various crises – and as sources of health and wellbeing. The second grand challenge we have is AI. If the initial conditions of AGI (Artificial General Intelligence) are not "right," it could evolve into the kind of Artificial Super Intelligence (ASI) that Stephen Hawking, Elon Musk, and Bill Gates have warned the public could threaten the future of humanity via the future globally connected Internet of Things (IoT). It is likely to take ten years to: 1) develop ANI (Artificial Narrow Intelligence) to AGI through international or global agreements; 2) design the governance system; and 3) begin implementation. Hence, it would be wise to begin exploring potential governance approaches and their potential effectiveness now.

Anticipatory governance can boost crisis preparedness. What policy actions and regulations would be needed to make cities resilient? What policy actions and regulations are needed to govern a safe transmission from ANI to AGI? What policies and regulations would be needed in combining these two goals? Cities are increasingly dependent on AI, hence, their resilience will also be dependent on the future of AI. Potential barriers and incentives for promoting successful crisis preparedness are also being sought for. The Special Millennium Project Session discusses these questions by providing a keynote by Jerome Glenn, commentary talks, and an interactive debate and elaboration of the topic that encourages participants to give and analyse suggestions for concrete policy actions and recommended practices. The ultimate goal is to explore possibilities for providing urban space that is crisis resilient,

prone for healthy living and wellbeing, and embedded with trustworthy and human-friendly AI as support for daily living.

13.30 - Introduction to theme of the Session
Anticipatory Governance for Resilient Cities
Heinonen, Sirkka
Finland Futures Research Centre, University of Turku, Finland

13.40 – Keynote Speech: Global Anticipatory Governance to Boost Crisis Preparedness for Resilient Cities and General Artificial Intelligence AGI
Glenn, Jerome C.
The Millennium Project, USA

14.10 - Anticipatory Governance for Human-Friendly AI
Kuusi, Osmo
Aalto University and Finland Futures Research Centre, University of Turku, Finland

14.20 - Comments and Discussion Through a Foresight Exercise

***Keywords**: Resilient Cities, AI, Anticipatory Governance, Crises, Policies*

(HYBRID) Workshop

Hybrid Infinities; Speculative Futures Scenario - Onlife Game

Time: Thursday 16 June at 13:30-15:00
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Facilitator: Linda Hofman

Hofman, Linda[a] – Nadine Roestenberg[b] – Maaike Rijnders[c] – Danielle Lavacca[c]
[a] Fontys, The Netherlands
[b] Fontys HKU & STRP, The Netherlands
[c] Fontys ACE, The Netherlands

Growth, innovation and improvement. Partly due to technological developments, we can do more and desire more. People produce and consume more and more, but the earth's resources are not infinite. We are increasingly connected through apps and social media, but how long can you actually give attention? We have reached the end of infinity.

'Hybrid Infinities' is a collaboration between STRP, Fontys Academy for Creative Economy, and Fontys School of Fine and Performing Arts. In this interdisciplinary research project students and alumni experiment with creating meaningful, engaging, and immersive experiences between physical and online audiences using creative technologies. The project speaks to the need to consolidate different embodied experiences as people move between virtual and physical spaces which has been exaggerated by pandemic conditions.

Under the guidance of artist Ian Biscoe, design research studio affect lab and the futurists of Fontys research group 'Designing the Future', students learned to give hybrid form to images of the future by using technology, art and future research. A group participants started in October work on their own 'hybrid' projects on 'infinity'. The winning project, Onlife Game, by five participants from different disciplines will be realised for STRP Festival, 6-10 April 2022 in Eindhoven, the Netherlands.

Onlife Game is a physical and browser-based experience. It presents a speculative future scenario in which a powerful algorithm has found the solution to over- and underpopulation. This formula needs to be discovered by playing a game in which online and offline visitors must decide upon the input that determines the future scenario. The project speaks to crisis in the exhaustion of planetary resources, as well to how much we should trust technology.

The research group will present the findings on the search for meaningful hybrid experiences and show a live interactive adaptation of Onlife Game.

About:
The knowledge centre Creative Economy of Fontys, University of Applied Science, the Netherlands led by applied professor Tessa Cramer PhD, unites lecturers, researchers and partners to guide, accelerate and be fundamental change with the common ground of artistic and creative approaches and working on a new creative economy. Her research group 'designing the future' translates the futurist mindset for a broader public.

Strp Festival 2022, from 7 to 10 april, artists, thinkers and performers exploring 'The end of Infinity' in Eindhoven, the Netherlands.
https://strp.nl/
www.fontys.nl
www.strp.nl
http://studiobiscoe.com/research/#dna
www.affectlab.org
https://fontys.nl/Onderzoek/Designing-the-future.htm

Keywords: Speculative, Futures, İnfinity, İnstallation Art, Hybrid, Digital

FRIDAY 17 JUNE 2022

SESSION IV at 09:00–10:30

Futures Studies Methodology – Case Studies

Time: Friday 17 June at 09:00-10:30
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Sari Söderlund

A Sociology of Futures: How Futures Studies Methods and Sociology of the Imaginary Epistemological Approach Comb Together Can Enhance the Understanding of Images of the Future

Koch, Felipe
Université Paris-Est Créteil (UPEC), France

In order to understand the ways in which images are fundamentally constituted, we aim to enrich futures studies with the contribution of the sociology of the imaginary. The assumptions (RIEL, 2018) highlighted by futures studies in the analysis of scenarios are closely linked to imaginaries present in everyday life. Studying these imaginaries, through Gilbert Durand's mythodology (DURAND, 2010), will make the explanation of the phenomenon richer. Beyond the understanding of the assumptions that make us imagine the future in a certain way, we must ask the question of the organization of their imaginaries, their anthropological path (DURAND, 1992) and especially the semantic basin from which they emerge (DURAND, 1994). In order to be better able to identify the weak signals emitted by society and to reflect on these new images. This is the hypothesis advanced by our reflection.

We propose a "sociology of futures" as an epistemological and heuristic crossroads between the sociology of the imaginary and futures studies. A convergence in terms of methods and objects of study. We can take as an example the practical case of foresight for innovation (LARSEN, 2020); and the use of techniques of investigation of the imaginary applied to management (MUSSO et al., 2014), such as the study of the imaginary of techniques (GRAS, 2013). All this contributes to thinking that this collaboration could be fruitful and mutually enrich the theoretical apparatus of both fields of study. The novelty of our paper lies precisely in the formal adoption of practices from two distinct fields of knowledge, so as to create, through practice, a multidisciplinary approach uniting several fields of human and social sciences.

By adopting the contributions of the Durand's theory of the imaginary, future studies are equipped with a robust scientific apparatus; while by adopting the methods of societal analysis stemming from future studies, such as Six Pillars (INAYATULLAH, 2008), the sociology of the imaginary takes on a brand new practical applicability: this does not replace mythocritics or mythanalysis but combines them with other tools, making possible the incursion of the discipline into foresight. Here is how field professionals and university researchers will be able to deploy new techniques and improve—through these new perspectives—the study of the objects to which they will devote themselves.

***Keywords**: Imaginary, Futures Studies, Sociology of Futures, Methodology, Epistemology, Images of the Future*

Impact of the COVID-19 Pandemic on European Consumer Behaviour - A Participatory Foresight Study

Kimpeler, Simone[a] – Kerstin Cuhls[a] – Sirkka Heinonen[b] – Susanne Giesecke[c] – Giovanna Guiffre[d] – Totti Könnölä[e] – Dana Wasserbacher[c]
[a] Fraunhofer ISI, Germany
[b] Finland Futures Research Centre, University of Turku, Finland
[c] Austrian Institute of Technology, Austria

[d] ISINNOVA, Italy [e] IFI, Spain
The COVID-19 pandemic has effects on the European consumer behaviour. Social distancing and more online shopping have changed the scene. The European Commission (EC) initiated a Foresight study to anticipate future challenges for consumer policy due to the impacts of the pandemic in Europe by 2030. This study combined three foresight approaches to meet the goals of a long-termed strategic foresight based on trend analysis, considering uncertainties, engagement of experts and stakeholders, as well as co-creative development of possible ideas for action. It started with a horizon scanning for detecting weak signals of change in consumer behaviour in relation to the pandemic. Then, scenarios and visions were created and analysed to identify and describe policy areas. This was done with topic experts, consumer organisations and stakeholders to explore future challenges and ideas for policy actions. The analysis of the scenarios was carried out along two dimensions: Sustainability (high/low) and Inequalities (high/low). Both dimensions are key for the EC's mission of "sustainable Europe for all".

The further analysis of the scenarios focused on possible gaps between the four scenarios and the goals of the EC's Consumer Agenda. Also the visions developed reflected different consumers' needs, including vulnerable groups and consumers with special needs. Stakeholder surveys and comparisons of visions of what stakeholders would want the future to look like were carried out to identify fields of action and develop new ideas for action. A broad involvement of stakeholders and experts in many steps of the process was important and achieved. While the horizon scanning and scenario process revealed how European citizen's lives and wellbeing are impacted by the pandemic in many ways, the visioning exercise and stakeholder debates contributed to the development of futures literacy, joint priority setting and co-creation of new ideas for possible policy actions. The identification of future challenges and opportunities across various scenarios together with stakeholders and experts has supported the EC in learning about stakeholders' opinions and priorities in addressing the challenges of the COVID-19 pandemic. The results can now be used to make consumer policy decisions more future-proof by taking the shock of the pandemic into account.

***Keywords**: Scenario Analysis, Participation, Stakeholder Involvement, Consumer Behaviour, Post-COVID-19*

Planetary Futures vs. Regional Futures-Oriented Practices: Methodological Issues of the Comparative Case Study

Yakubovskaya,Tatiana
National Research Tomsk State University, Russia
Tampere Vocational College, Finland

Regional issues of futures-oriented activities are one of the basic problems of "planetary futures". It means that the territorial environment, social, cultural, economic "nature" of a region should affect collective and personal agency in constructing futures. It could be defined as the question how different regional attitudes, visions, scenarios, strategic programs and roadmaps should be argued, agreed, and even integrated both in local and global contexts?
Within these frameworks of the theme "Planetary Futures", the paper is focused on methodological and conceptual discussions related to the influence of regional specificity on futures-oriented educational practices and futures literacy programs. The ecosystem approach to the regional studies allows exploring the local educational practices within the complex interconnections and relationships of the region.

The paper discusses the developed of methodological tools for comparative case study based on the three models of regional futures-oriented educational programs built according to the innovative education technology "Open Foresight-laboratory":
Model 1.0. West-Siberian Technological-Innovation region, high-schools and colleges, Tomsk, Russia (2012-2021)
Model 2.0. Arctic Strategic Oil and Gas Region, high-schools and colleges, Yamal, Russia (2017-2018)
Model 3.0. Smart City Region, Tampere, Vocational College TREDU, Finland (2020-2021)

Over the several years, the comparative case study has been conducted by international networks for the conceptualisation of "future-oriented education, FOE", whilst also developing the methodological tools of comparative analysis and the models of futures-oriented teaching and learning in accordance with "spirit" of different regions.

The initial methodological hypothesis and analytical model have been related to compare practices within experiences of models 1 and 2 and included the main regional specific aspects: "Visioning – Communities – Education". This model has been developed at the Model 3 by rethinking and integrating the concepts of Futures Literacy, Learning Region, and Smart City Ecosystem.

The present integrated analytical model of comparative case study gives the foundation to coordinate the futures literacy educational programs with the specifics of regions in accordance with following issues:
1) regional kinds of the New Literacies,
2) regional systems of Decision Making,
3) regional sets of (Super)Complex Problems and forms of Collective Activity for the problem solving,
4) regional characteristics of Futures Consciousness.

Therefore, these outcomes could contribute significant methodological aspects and solutions to the field of Futures Studies there is a significant academic and research base for rethinking fundamental contradictions between global and local versions of the futures, and to develop the relevant methodological means for a comparative analysis of futures-oriented activities.

***Keywords**: Comparative Case Study, Futures-Oriented Education, Futures Literacy, Foresight Literacy, Smart City, Learning Region*

Foresight for priority setting in cancer research

Giesecke, Susanne – Dana Wasserbacher
Austrian Institute of Technology, Austria

Regional issues of futures-oriented activities are one of the basic problems of “planetary futures”. It means that the territorial environment, social, cultural, economic “nature” of a region should affect collective and personal agency in constructing futures. It could be defined as the question how different regional attitudes, visions, scenarios, strategic programs and roadmaps should be argued, agreed, and even integrated both in local and global contexts? Within these frameworks of the theme "Planetary Futures", the paper is focused on methodological and conceptual discussions related to the influence of regional specificity on futures-oriented educational practices and futures literacy programs. The ecosystem approach to the regional studies allows exploring the local educational practices within the complex interconnections and relationships of the region.

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***Keywords**: Comparative Case Study, Futures-Oriented Education, Futures Literacy, Foresight Literacy, Smart City, Learning Region*

Workshop

Radically Rethinking the Future – A Workshop Approach to Overcome "Toxic Assumptions" In Organizations

Time: Friday 17 June at 9:00-10:30
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Facilitator: Fabian Buder

Buder, Fabian
NIM Nuremberg Institut for Market Decisions, Germany

Workshop uses an online collaboration tool, Conceptboard, hosted by NIM. Participants do not need to register, they will get a link during the session and can simply access the workshop space online. Zoom will be used for audio/video, Conceptboard is only for collaboration, like an infinite whiteboard with all templates etc. for the workshop. Participants will learn the workshop approach, and work in groups on the topic of mobility.

Mental models shape the way humans think about the futures
Humans use simplified models, mental representations build on assumptions of how the world works, to base their decisions on. Those mental models also shape humans' ability to think about how the future may be different from today.

"Toxic Assumptions" paralyze our ability to think about futures prospectively
What can often be observed is, that those assumptions that are most fundamental to our world views and those that are shared beliefs in an organization are not recognized as assumptions anymore. They are treated like irrefutable facts and form paradigms, in particular when they have proven in the past to be good guidelines for decision-making.

This is what we call "Toxic Assumptions": unchecked assumptions that are no longer true and hold organizations back from recognizing other perspectives or other applications. They “intoxicate" the way decision makers within an organization see the world, analyze problems, develop strategies, and implement actions for the future. Holding on to Toxic Assumptions contributed for example to the decline of Nokia, Kodak, and other industry behemoths that were not able to rethink and rebuild their formerly successful business models fast and fundamentally enough in the face of rapid disruptive change.

To be able to shape the future in new and better ways, companies, organizations or even entities like cities and the people that live and act in those entities must first become capable of reviewing and questioning the seemingly given facts that prevent them from generating new ideas for the future.

Re-imagine the future as radically different and identify Toxic Assumptions
I developed and tested a workshop approach that helps people to collectively reveal their - often implicit - assumptions and mental models for a specific domain in a structured way. The starting point is a collection of the supposed "facts" about how the world works in a certain domain of interest, for example a company's business, an organization, an entire industry, or even subsystem of a society like healthcare or higher education. Those "facts" - the shared beliefs - will then be collectively challenged and countered with radically different ideas of the futures during a structured process that helps to overcome mental fixedness. Finally, the proposed workshop generates a map that allows to identify Toxic Assumptions and can be used as a starting point to create new scenarios and rethink the future as radically different from today.

Keywords: Mental Models, Scenario Planning, Futures Workshop

Workshop

Roleplay Supporting Equality in Education

Time: Friday 17 June at 09:00-10:30
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Facilitators: Jari Karttunen and Anna-Liisa Parkkinen

Karttunen, Jari[a] – Anna-Liisa Parkkinen[b]

[a] JAMK University of Applied Sciences, Finland
[b] Children and Youth Foundation, Finland

The objective of the workshop is to create a space for a dialogue how to create experiential knowledge that may be implemented for equality work in education. The objective is also to discuss roleplay as a tool to practise empathy, creativity and understanding of the power relations in education. This enables the possibility to give thoughts on how role play for equality can be applied to different groups or individuals.
Target of this creative workshop is to support work for coequal education, equal opportunities as well as a more equal working life.
Consisting of creative approaches to the themes of equality, gender sensitivity, intersectionality and wellbeing. Through playing and exploring it is possible to deepen and imagine our understanding to teach equality.

***Keywords**: Equality, Gender Sensitivity, Intersectionality, Play, Creativity*

(HYBRID) Special Session

Imaginative Transformations upon Sustainable Futures

Time: Friday 17 June at 9:00-10:30
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chairs: Sanna Ketonen-Oksi & Minna Vigren

Introduction to the Session:
The Roles of Imagination and Aspiration in Building Socially, Culturally, And Ecologically Sustainable Future(s)

Ketonen-Oksi, Sanna[a] – Minna Vigren[b]
[a] Laurea UAS, Finland
[b] University of Helsinki, Finland

Based on the generally identified need to broaden the debate on building more ecologically, culturally, and socially sustainable futures (Joutsenvirta and Salonen, 2020; Vataja and Dufva, 2021), what is now urgently needed, is to bring forth new approaches, methods, and tools that will help us to transform the values and belief systems based on which we create our visions and/or images of the future (Milojevic and Inayatullah, 2015; Schultz, 2012).

That being said, in this introduction, we will pave the way for the session presenters, and the discussions at the end of the session by provoking the participants to reconsider their existing perceptions about the roles and uses of imagination, aspiration, and speculation in building alternative futures, either individually or collectively. Most importantly, we will bring forth the importance of agency creation as a means to challenge the dominant normative hierarchies about the future.

***Keywords**: Imagination, Aspiration, Agency Creation, Futures Literacy*

Cultural Sustainability Transformation and Ethical Tensions

Siivonen, Katriina
Finland Futures Research Centre, Finland

Ecological problems are decreasing resilience of the living environments and destroying prerequisites for well-being for humans and many other living beings (Steffen et al. 2015). The notion of leverage points direct actions to societal structures through which sustainability transformation could be most effective (Meadows 1999). Abson et al. emphasize that policy interventions typically do not address the deep level leverage points, and thus partly fails in their target of sustainability transformation. They claim that in order to reach the transformation, there is a need to operate on the deepest levels of leverage points, which consist of worldviews, human-nature relationships, and from them arising goals, actions, habits, and practices. (Abson et al. 2017.) These are basic intangible cultural expressions.

Thus, it is obvious, that as a part of global sustainability transformation, we need cultural sustainability transformation (Siivonen 2022; see also Huttunen et al. 2021). In practice it means changes in our intangible cultural expressions, connected to the tangible human made environment and nature. In this context we meet tensions between different ethical statements, which need to be solved. A combination of futures research, sustainability science, and cultural heritage research can give some possible ethical solutions.

The core of cultural sustainability transformation can be seen as the right of people to take part in and have an impact on the own culture or on the cultural change in the own cultural environment together with other people. However, this does not guarantee the direction of the cultural change towards sustainability of any dimension. In spite of this, the possibility to take part and have an impact can be seen as a condition of cultural sustainability transformation.

As a further solution, I suggest heritage futures, based on intangible cultural heritage, to tools for cultural sustainability transformation. Heritage Futures are intentionally co-created human-nature relationships including new types of meanings and actions which produce sustainable futures. They can be used as a means to co-direct cultural transformation towards a more sustainable world, but only when conducted in a participatory process.

Keywords: *Heritage Futures, Ethical Tensions, Intangible Cultural Heritage, Leverage Points, Planetary Wellbeing, Cultural Sustainability Transformation*

Art and Science Collaboration for More Sustainable Futures

Tuittila, Satu
University of Jyväskylä, Finland

Art and science collaboration for more sustainable futures
A case example presentation of art and science collaboration in Katoava luonto – research project.

Humanity is facing severe ecological problems. We have a lot of data and scientific information about the facts but the communication and understanding of the urgency seems to be difficult. Collaboration between art and science is one possibility to reach and engage wider audiences to ecological topics and particularly to make an emotional impact which can promote change.

With two case-examples from University of Jyväskylä's Department of Biological and Environmental Science based Katoava luonto – research project art and science collaboration possibilities are introduced and examined. The case examples are presented with video extracts and photography. The key observations of the collaboration between biologists and performing artist will be shared including challenges, benefits and learning experiences.

"Small & Significant" is a performance project about important pollinators targeting young audiences. Project includes dance performance, "Buzzer gallery" dance video, information materials and elementary school workshops. With dance it is possible to contemplate the subject with play and humor. We also encourage the children to study nature and to make small-scale supportive actions in their close environment.

(Hand program presenting the project, working group and sponsors in the link:
https://www.jyu.fi/science/fi/bioenv/tutkimus/luonnonvarat/katoavaluonto/taide/kasiohjelmatekstit.pdf)
"Vähin äänin" is a performance about biodiversity loss and our possibilities to support the nature. The performance combines contemporary dance, choral and rap singing with conservation biology. With "Vähin äänin" – project "science cafes" after the performances were organized for scientific communication and audience engagement as well as a separate school workshops tour for senior high school students in Mid-Finland. The project is created in collaboration with Off/Balance Dance group, Jyväskylä City Theatre and Ruamjai Choir.

(Hand program presenting the project, working group and sponsors in the link:
https://issuu.com/universityofjyvaskyl/docs/vahin_aanin_kasiohjelma_manillateatterissa)
Katoava Luonto -research project (2018-2021) is focusing on ecological compensation through citizen actions and is supported by Kone foundation.

Keywords*: Art and Science Collaboration, Citizen Engagement*

How to Develop Our Abilities to Imagine Transformative, More Socially and Ecologically Sustainable Futures? An Integrative Literature Review

Ketonen-Oksi, Sanna[a] – Minna Vigren[b]
[a] Laurea UAS, Finland
[b] University of Helsinki, Finland

In futures research, there are three essential approaches toward the future. When forecasting, the focus is on making predictions about the future, based on data and knowledge from the past. In foresight, the aim is to understand why things are changing, and what are the alternative new directions and trends that lead us towards the future. Finally, when it comes to anticipation, it is about becoming conscious of the ways how the future is being built in the present. Each of these approaches are needed, but for different purposes. Most importantly, they have significant impacts on the both individual and organisational levels to renew and respond to the challenges of the future.

To create alternative images of the future – what does it actually mean? How can we imagine the future, and how reliable are these imaginary visions of the future? What kinds of methodological approaches and expertise are needed to enrich our imagination and what are the biggest pitfalls of these methods? To what extent can the imagination be thought / assumed to be an individual and to what extent a collective view of how we perceive the future in our communities?

In our presentation, we aim to contribute to the understanding of values and belief systems based on which we build our imaginary visions of the future. We will tackle some of the methodological challenges that prevent us to imagine new, transformative ways to create better futures for all. Besides discussing the main results of our work-in-progress, that is, an integrative literature review on methods that foster our abilities to imagine alternative futures, combining research from different disciplines, we will point out and provoke critical debate regarding the inconsistencies in the existing method literature.

Keywords: *Future, Anticipation, Imagination, Aspiration, Alternative Futures, Agency Creation*

SESSION V at 10:45–12:00

Novel Interconnections of Health, Social Justice, Land Use Planning

Time: Friday 17 June at 10:45–12:00
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Ana Jones

Note: This track will overrun approx. 35min

Healthy and Sustainable Urban Futures: Policy Indicators for 25 Cities

Lowe, Melanie[a] – Deepti Adlakha[b] – James Sallis[c, d] – Deborah Salvo[e] – Ester Cerin[c] – Anne Vernez Moudon[f] – Carl Higgs[g] – Erica Hinckson[h] – Jonathan Arundel[g] – Geoff Boeing[i] – Shiqin Liu[j] – Billie Giles-Corti[g]
[a] Melbourne Centre for Cities, The University of Melbourne, Australia
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[c] Mary MacKillop Institute for Health Research, Australian Catholic University, Australia
[d] Herbert Wertheim School of Public Health and Human Longevity Science, University of California, USA
[e] Prevention Research Center, Brown School, Washington University in St. Louis, USA
[f] Department of Urban Planning and Design, Urban Form Lab, University of Washington, USA
[g] Healthy Liveable Cities Lab, RMIT University, Australia
[h] School of Sport and Recreation, Faculty of Health and Environmental Sciences, Auckland University of Technology, New Zealand
[i] Department of Urban Planning and Spatial Analysis, Sol Price School of Public Policy, University of Southern California, USA
[j] School of Public Policy and Urban Affairs, Northeastern University, USA

In this urban age, it is vital to plan cities that protect and promote human and planetary health. City planning policies influence health and sustainability by impacting urban lifestyles and exposure to health and environmental risks. Cities with health-promoting urban design and transport features support active living, social connection, access to healthy food, green spaces, and other daily living destinations, and reduce carbon emissions. As a first step in a broader international research endeavour, we assessed whether 25 cities internationally had policy frameworks that support creation of healthy and sustainable urban environments. The 25 cities were spread across 19 lower-middle-, upper-middle- and high-income countries, selected through networks of built environment and health researchers who agreed to participate in the Global Healthy and Sustainable City-Indicators Collaboration. Local research and/or policymaker collaborators systematically collected policy data for nine indicators: integrated city planning, air pollution, destination accessibility, distribution of employment, demand management, design, density, distance to public transport, and transport infrastructure investment. These evidence-informed policy indicators were developed based on those recommended in the 2016 Lancet Series on Urban Design, Transport and Health.

We identified and compared strengths, limitations and gaps in urban and transport policies across the 25 cities. We found that many cities required more specific and measurable policies, to deliver on aspirations for healthy and sustainable cities. In some cases, policies needed to be made more consistent with evidence on requirements for healthy and sustainable cities. In this paper, we will outline the study findings, recommendations, and a call to action to foreground health considerations and support evidence-informed city planning policy and governance, particularly in low- and middle-income countries. We will discuss progress on making the findings publicly available via an online observatory. We invite interested researchers and policymakers to be involved in next steps as we upscale the study to include more cities worldwide.

***Keywords**: Healthy Cities, Policy Indicators, City Planning, Land Use Planning, Transport Planning, Sustainable Urban Development*

Spatial Indicators of Urban Design and Transport Features for Achieving Healthy and Sustainable Cities: A 25-City Study

Higgs, Carl[a] – Geoff Boeing[b] – Shiqin Liu[c] – Billie Giles-Cort[1a] – James F Sallis[d,e] – Ester Cerind,[f] – Melanie Lowe[g] – Deepti Adlakha[h] – Erica Hinckson[i] – Anne Vernez Moudonj – Deborah Salvo[k] – Jonathan Arundel[a]

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[f] School of Public Health, The University of Hong Kong, Hong Kong, China
[g] Melbourne Centre for Cities, The University of Melbourne, Australia
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[i] School of Sport and Recreation, Faculty of Health and Environmental Sciences, Auckland University of Technology, New Zealand
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[k] Prevention Research Center, Brown School, Washington University in St. Louis, USA

The influence of urban design and transport features on maintaining healthy, sustainable lifestyles and their consequent role in the primary prevention of chronic disease is recognized in policy targets at local, national and international levels of government. However, overall city summary indicators obscure local inequities in the distribution of access to these features. The Global Healthy & Sustainable City-Indicators Collaboration study examined the spatial distribution of urban design and transport features and the presence and quality of city planning policies that promote health and sustainability for 25 diverse cities across 19 lower-middle to high-income countries internationally. This presentation reports on our development and use of an open-source spatial indicator software framework, integrating novel, global open datasets to support within- and between city comparisons of the delivery of urban features. Through this baseline study, we demonstrate that many people and neighbourhoods in cities worldwide, do not have access to the urban design and transport features needed to create healthy and sustainable cities. Further, we provide a tool for creating urban indicators of walkability and access to amenities and public open space that can be extended through collaboration with local experts in diverse settings, and used for analysis and to benchmark and track progress towards meeting urban planning and health goals.

Keywords: *Built Environment, Health, Urban Planning, Spatial Indicators, Open Science, SDGs*

Foreclosing and Pre-Opening Futures through Citizens' Narratives in the Urban Environment

Veenman, Sietske – Simone Haarbosch – Maria Kaufmann
Institute for Management Research, Radboud University, The Netherlands

Citizens are considered to play an increasingly active role in dealing with complex sustainability challenges that societies are currently facing, such as climate change or biodiversity loss (Huang et al., 2021). They are given a prominent role to contribute to these collective challenges via individual actions, e.g., to reduce greenhouse gas emissions within their homes in the context of the energy transition (Haarbosch et al. 2021; Ali et al., 2021).
In other words, citizens are expected to anticipate certain collective futures and change their individual actions in order to create alternative futures. These behavioral actions are shaped by experiences in the past, as well as expectations of the future. These experiences are translated through narratives into action, and so these anticipated futures pulled to the present (Honig, 2012). Narratives are the bridge between the past, the present and the future (Holmes, 2009). Narratives open up futures if the narrative is appealing and invites action (see Beckert, 2013), or close futures down, if the narrative is not appealing.

The aim of this paper is to analyse the processes of opening and closing futures in the urban environment and particularly explore how forms of capitals (Bourdieu, 1986) are used in doing so. The opening and closing of futures does not happen automatically or in isolation but is influenced by a person's possibilities 'to shape their environments and the lives lived within them' (Groves, 2016, p. 30). To conceptualize an individual's possibilities, we use Bourdieu's forms of human capital (Bourdieu, 1986).

In this research a narrative analysis is carried out to examine how the use of human capital influences the preopening and foreclosing of futures in the context of temporality (past, present, future). The narratives were gathered in two neighbourhoods. For this paper, we selected four out of 30 interviews that contained 1) a long term perspective, 2) different housing situations (house owners/tenants) and 3) represented different neighbourhoods.
We observed that the anticipation of futures is a mediating factor in how human capital is used. For example, expectations of the future influence whether a person uses economic, symbolic, social and cultural capital in their actions. Futures might be foreclosed (i.e. not actively pursued), if the expected future is framed negatively, and if there is a discrepancy between expected and desired future. In addition, our research suggests that pre-opening futures is particularly an action of persons with a positive anticipation of the future, at least if they master the skill to use their forms of capital to reach these futures and how to avoid undesired futures, as well when the discrepancy between their expected and desired future is low.

Keywords: *Energy Transition, Netherlands, Capitals, Bourdieu, Closing Futures, Opening Futures*

An Interconnectedness of Land Use Planning and the Environment: Policy Options for Planetary Future

Vhankade, Prakash – Gaur Ritu
Punyashlok Ahilyadevi Holkar Solapur University, India

Land use planning affects individual and collective wellbeing and is a critical factor in meeting the goals of environmental sustainability, economic growth and social development. Public policy primarily uses spatial and land use plans and environmental regulations to affect land use. These instruments restrict how land can be used, but cannot influence how individuals and businesses would like to use land. Many other policy instruments are beyond those within the domain of land use planning systems to create incentives to use land in specific ways. Frequently, these incentives do not correspond to the objectives of the land use planning system and environment conservation. In many cases, planning systems simply fail to achieve their objectives due to overwhelming pressures from contradicting land developments. To provide the right incentives, a broader range of policies and, in particular, fiscal policies, needs be used to affect land use. This requires greater efforts co-ordinate policies between sectors and levels of government. Against this backdrop this essay narrates (i) what are the possible policy scenarios to regulate the land use planning for sustainable environment? (ii) Is there any acceptable middle-path where the development needs meets the conservation of land and sustainable environment for planetary future health? And (iii) what could be the ideal and consensus scenario to pursue for the near future? The two drivers considered for the analysis are "Land use planning" and the "Environment" of the population.

This essay employs “two axes and 2 by 2 matrix” method to articulate scenarios. The drivers- land use planning and the environment are taken on X and Y axes respectively. The four scenarios are developed, one from each of the four quadrants. Across the axes, the top right quadrant (TR) is scenario of strong or land use planning and Strong environment conservation-an ideal scenario to be accomplished. The top left quadrant (TL) is a scenario of Strong land use planning with low/ weak level of environment conservation or protection-a scenario less probable with some contradictions. The bottom right quadrant (BR) is about weak land use planning and this land use planning are moderate threat to the environment. The bottom left quadrant (BL) is a scenario of weak land use and high threat to the environment. All the four are narrative scenarios with a commentary on possibility.

Keywords: *Land Use Planning, Environment, Planetary Future, Public Policy, Two Axis Method*

From Foresight to Power: Reimagining Pathways of Land Use and Water Governance Futures

Mendoza, Heidi D.[a] – Shermon O. Cruz[b]
[a] Vrije Universiteit Amsterdam, The Netherlands
[b] Center for Engaged Foresight, Philippines

How might futures of land and water governance systems emerge from anticipatory processes? This paper explores how a multi-stakeholder group used anticipatory processes to reimagine landscape governance in the Philippines. Landscape governance as a natural resource management framework is not at all new, but it is gaining attention, and momentum especially in developing countries. In 2018, alliances of Civil Society Organizations (CSOs) in the Philippines embarked on a landscape governance effort to influence policy, and decision-making processes both at a landscape and national level. However, the alliance acknowledged that to better influence policy processes, the alliance has to tap and harness collective intelligence, and maximize their collective foresight. This case study focuses on exploring foresight methods, questioning underlying assumptions, reimagining future scenarios, and rethinking pathways to the futures of Philippine land use and water governance as two critical aspects of landscape governance. The emerging scenarios for land use posit the alliances’ aspirations for community-powered agricultural transformations for the next 50 years, and transformations that can promote human-conscious artificial intelligence, and biosphere-led ecosystems. On the other hand, the emerging scenarios for water governance detailed an eco-efficient, indigenous-centric, multi-purpose and cooperative-led water infrastructure, distribution and access systems. The foresight process revealed that diverse worldviews and narratives challenge and reframe default ways of knowing and embodying land use and water governance. Ultimately, the foresight process challenges how current landscape governance planning, and visioning provide power for the alliance to influence policy and decision-making processes in longer-time horizons.

Keywords: *Landscape Governance, Land Use, Water Governance, Engaged Foresight, Anticipatory Systems*

Special Session:
Beyond Knowledge: How Technology Is Driving an Age of Consciousness

Time: Friday 17 June at 10:45–12:00
Note: You can find the Zoom Link on our virtual Platform ProspectumLive

William E. Halal
George Washington University, The TechCast Project, USA

This paper reports on research showing that digital technology is driving social evolution into an emerging Age of Consciousness.

My studies show that the Knowledge Age is passing as smartphones, social media and artificial intelligence automate knowledge. Knowledge remains crucial, but the tech revolution is opening a new frontier governed by emotions, values, beliefs and higher-order thought. An Age of Consciousness is here, though it’s dominated by post-factual nonsense, climate denial, political gridlock and other threats that pose an existential crisis. Henry Kissinger recently wrote in Time: "… what fascinates me is that we are moving into a new period of human consciousness which we don’t yet fully understand."

I have struggled to understand this transition for years, and the result is what I call the “Life Cycle of Evolution (LCE).” Similar graphs have been sketched in general terms, but this is the first to plot the long-term evolutionary trend

using real scales and real data. The logarithmic time scale is needed to encompass the billions of years at the start of life, as well as just decades today. Without a log scale, the shape of the LCE would not be recognizable; the trendline would run flat and make a sharp 90 degree turn straight up.

If this analysis of social evolution is correct, we could witness a historic shift in thought that resolves this confusion. Civilization has been driven by the Agrarian Revolution, the Industrial Revolution, and the Digital Revolution recently. The next evolutionary step is a Mental/Spiritual Revolution to kick start the Age of Consciousness.

Today's massive threats (climate change, more pandemics, cyber-attacks, etc.) are so severe that the world is being forced to adopt a "global consciousness" – or face disaster. We are likely to see a historic shift in consciousness, a collective epiphany, global ethics, or a spiritual revolution, probably within this decade.
Reference: This paper draws on my book, Beyond Knowledge: How Technology Is Driving an Age of Consciousness (Foresight Books, 2021).

***Keywords**: Digital Revolution, Consciousness, Social Evolution*

(HYBRID) Workshop

Friction Wheel

Time: Friday 17 June at 10:45-12:00
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Facilitators: Maya Van Leemput and Mushon Zer-Aviv

Van Leemput, Maya[a] – Mushon Zer-Aviv[b]
[a] Open Time, Erasmus Brussels University, Belgium
[b] Shenkar School of Engineering and Design, Israel

With rising inequalities, political polarization, a crisis of reality, a global pandemic with no end at sight, a looming climate catastrophe, the need for systemic change is glaringly obvious in today's world. These systemic challenges put pressure on choice oriented behaviors that require insight into when and where the most fruitful opportunities for action exist.

A traditional futures tool such as the futures wheel, helps see the various causal relationships at play in relation to a selected potential action, trend or event. As Jerome Glenn (2009, p10) explains, it can be used for 'exploring the range of potential consequences of components or elements of the system and to check for completeness of relations among the systems' elements. Its suitability for assessing possible impacts of proposed actions, is considered an advantage for strategic planning. The backcasting wheel (Bengston, 2020) focusses more closely on setting out a pathway towards a chosen preferred future and identifying milestones along that pathway that can be used to track progress.

While these tools offer useful guidelines for mapping scenario elements, they do not explicitly indicate hierarchies of impact or opportunities for action. In this workshop we will test a new tool which is still under development. The 'Friction Wheel' is intended to enable a participatory process for identifying potentially powerful points of intervention for achieving change towards a preferred future. This tool builds on and expands the techniques and goals of the futures wheel and the backcasting wheel.

The friction wheel process asks where to act and intervene for the greatest possible effect. It maps not a single pathway but a range of causal chains that can simultaneously affect the preferred change. It takes account not only of direct and indirect causal relationships but also of the friction that enables the flow from cause to consequence. It focuses on those points where such friction can be eliminated, manipulated or generated towards a commonly defined preferred possible outcome.

Bengston , David N, Westphal, Lynne M. and Dockry, Michael J. (2020) Back from the Future: The Backcasting Wheel for Mapping a Pathway to a Preferred Future. In: World Futures Review, Vol. 12(3) 270–278.

Glenn, J. (2009) the Futures Wheel. In: Glenn, J. and Theodore J. Gordon. Futures Research Methodology Version 3.0. Millennium Project. At the same time, in the field of science and technology research, a number of approaches

have emerged that call into question continuous renewal, development, innovation, growth and adaptation. Examples of these are e.g. terrestrial thinking (Latour, 2018) and the broken world thinking (Jackson, 2013), which take a strong stance on the climate change debate. The general interest on these topics is steadily growing.

All-in-all, this session is about bringing forth the number of roles that imagination and aspiration can play in building socially, culturally, and ecologically sustainable future(s), either from individual, organisational or from a community perspective.

***Keywords**: Friction, Flow, Mapping, Action, Impact*

(HYBRID) Special Session

Dutch Future Elections; the Future Belongs to Everyone

Time: Friday 17 June at 10: 45–12:00
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Linda Hofman

Hofman, Linda[a] – Tessa Cramer[a] – Lotte van Oosterhout[a] – Merlijn Twaalfhoven[b]
[a] Fontys, The Netherlands
[b] Turn Club, The Netherlands

Imagination, perspective, and footing in a time of turmoil and despair. The pandemic and all the economic and social setbacks it has caused make us despondent. That is why 'The Dutch futures election' are looking for a common perspective on the future. To get people more involved in local politics again and to give them a view on the long term, the election of the future is about other questions. 'What is a good world?' and 'How can you move towards it?' By talking with citizens, collecting stories and connecting dreams with concrete possibilities, the ways to a world we want will be explored.

The Future belongs to everyone

It is the mission of Tessa Cramer, Applied Professor 'Designing the Future Fontys ACE to offer as many people as possible the space to make the future an active part of their lives. What does it take to actively relate to the future? Within the field of futures studies, there is a proliferation of theories and methods, which often made her lose sight of the wood for the trees. She came to a sobering conclusion: it is all about daring to ask very basic questions. Questions that are apparently so simple that they are often skipped. Who do we want to be? What matters? Who is at the table when we talk about the future? She noticed that when talking about the future or the long term, there is a tendency to focus on new complicated topics, technologies, and threats. As a result, in many cases, the future remains a fiction, a far cry from the show.

About the project 'Dutch futures election'

On 16 March 2022, the same day as the municipal council elections, the Future Election was held. All inhabitants, including children, were able to vote for the Netherlands of 2050. On 25 September, the Future Election organise a Future Council in every municipality in the Netherlands, where decisions will be taken for the long term. The Future Elections is organized by the Turn Club, a partnership of art professionals and bridge builders who tackle pressing issues with an artist's mindset. Fontys Academy for Creative Economy connects to this initiative with the research group Designing the Future together with a group of students from the bachelor program 'Trend research and Concept realization in lifestyle'.

"What makes the place where you live a good place?" this question is asked to all kinds of people to share their idea of a good world. The first stage of the project was to listen to citizens' stories and experiences and catch them into narratives and imaginations that will bring their dreams and ideas to the surface. The plan for the second half of this project was to focus on visualizing the encounters the students have and the different insights they will get from these encounters. But they jumped into another very important insight; it is not only about the absence of focus and awareness of long-term vision it is also about lack of (youth) involvement in democracy.

(Youth) involvement in democracy

On 16 March 2022, were the Dutch municipal council elections. Nationally the Turnout in municipal elections was dramatic. It appears that only 50.4 percent of eligible voters went to the polls. This was an all-time low. In the residence of Fontys Academy for Creative Economy, Tilburg the turnout at the Tilburg municipal elections was even worse: just over 40 percent. Historically, Tilburg has a low turnout in the municipal elections. Four years ago, the turnout was also low at 45.3 percent, as in 2014, when Tilburg had the lowest turnout at 44 percent. In Tilburg, 182,574 residents are entitled to vote this year. Of these, 3620 may fill in their ballot paper for the first time this year. The municipality of Tilburg had therefore campaigned in recent weeks to attract more young people in particular to the polls. But that didn't work out. How can we help youth de-fictionalize the future? To get them more involved in local politics again and to make them actively relate to the long term.

Program

10.45 Entrance
11.00 Introduction:
Linda Hofman MSc., futures researcher and lecturer Fontys ACE
Offline - Turku
11.05 The Future belongs to everyone – Tessa Cramer Ph.D., Applied professor Designing the Future
Online - Amsterdam
11.20 About the Dutch Futures Election – the project
Linda Hofman MSc
Offline - Turku
11.30 (Youth) involvement in democracy –
Lotte van Oosterhout, student coach &
Students
Online – P8 Tilburg
11.45 Q&A
12.00 Closure

Tessa Cramer, futurist and scholar is the leading lector (chair) of the knowledge centre Creative Economy of Fontys, University of Applied Science, the Netherlands. She unites lecturers, researchers, and partners to guide, enhance and be fundamental change with the common ground of artistic and creative approaches and working on a new creative economy. As an applied professor 'designing the future' she translates the futurist mindset for a broader public. Together with her research group, she explores topics like uncertainty, creativity, attention, and the perception of spending time.

About:
Future elections: https://toekomstverkiezing.nl/
Initiated and organized by the Turnclub:: https://turnclub.org/
Supported by many others.
Fontys Academy for Creative Economy: https://fontys.edu/Fontys-Academy-for-the-Creative-Economy.htm

***Keywords**: Elections, Agency, Creative Economy, Citizens Change, Designing Futures, Good Ancestors*

The Future Belongs to All of Us

Cramer, Tessa
Fontys, The Netherlands

It is the mission of Tessa Cramer, professor Designing the Future at Fontys Academy for the Creative Economy, is to help others make the future an active part of their daily lives. She questions: what does it take to actively relate to the future? There are many theories and methods that support and enhance our ability to think about the future. In practice, Cramer noticed that when talking about the future or the long term, many people tend to focus on new, often quite complicated, topics, technologies, and threats. As a result, for many others, the future remains science fiction, they think the future does not concern them. After concluding her dissertation on the professionalization of futurists, Cramer came to the conclusion that all it takes to actively relate to the future is to have the guts to actually ask very basic questions. Questions that seem so simple that they are often skipped. Who do we want to be? What matters? Who is at the table when we talk about the future?

***Keywords**: Future Literacy, Long Term Vision, Simple Questions, Not To Simple Answers*

The Digital Transformation of Hospitals: a Delphi-based Foresight Study of Digitization Effects

Van Oosterhout, Lotte
Fontys, The Netherlands

On 16 March 2022, were the Dutch municipal council elections. Nationally the Turnout in municipal elections was dramatic. It appears that only 50.4 percent of eligible voters went to the polls. This was an all-time low. In the residence of Fontys Academy for Creative Economy, Tilburg, the turnout at the municipal elections was even worse: just over 40 percent. Historically, Tilburg has a low turnout in the municipal elections. Four years ago, the turnout was also low at 45.3 percent, as in 2014, when Tilburg had the lowest turnout at 44 percent. In Tilburg, 182,574 residents are entitled to vote this year. Of these, 3620 may fill in their ballot paper for the first time this year. The municipality of Tilburg had therefore campaigned in recent weeks to attract more young people in particular to the polls. But that didn't work out. The plan for the second half of this project was to focus on visualizing the encounters the students have and the different insights they will get from these encounters. The student researchers jumped into another very important insight; it is not only about the absence of focus and awareness of long-term vision it is also about lack of (youth) involvement in democracy. How can we help youth de-fictionalize the future? To get them more involved in local politics again and to make them actively relate to the long term.

***Keywords**: Elections, Youth, Defictionalize, Long Term, Students Research*

SESSION VI at 13:00–13:50

(HYBRID) Special Session

Imagining After Capitalism

Time: Friday 17 June at 13:00-13:50
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Toni Ahlqvist

Hines, Andy
Department of Human Development and Consumer Sciences, University of Houston, USA

In addition to helping clients identify and reach their preferred futures, an important role for futurists is to help develop positive guiding images of the future for the society as a whole. Important prior research suggests that the successful societies in the past were guided by such images. Today, and over the last several decades, we have lacked such an image. This session will review the authors work in developing three such guiding images for life after the end of today's capitalist socio-economic system. It will include a review of how futurists approach such a question and walk participants through the process used to generate these images, as well as discussing the images themselves.

(HYBRID) Poster Session

Time: Friday 17 June at 13:00-13:50
Note: You can find the Zoom Link on our virtual Platform ProspectumLive
Chair: Sari Puustinen

The Digital Transformation of Hospitals: A Sequential Foresight Study of Digitization Effects

Köbe, Philipp – Sabine Bohnet-Joschko
Chair of Management and Innovation in Healthcare, University of Witten/Herdecke, Germany

Background: In the context of the digital transformation of all areas of society, healthcare providers are also under pressure to change. New technologies and a change in patients' self-perception and health awareness require a rethink in the provision of healthcare services. New technologies and extensive use of data can change provision processes, optimize them or replace them with new services. The inpatient sector, which accounts for a particularly

large share of healthcare spending, plays a major role in this regard. This study examines the influences of current trends in digitization on inpatient service delivery.

Methods: We conducted a narrative rewiew. This was applied to identify the international trends in digital transformation as they relate to hospitals. Future trends were considered from different perspectives. Using defined inclusion criteria, international peer-reviewed articles published from 2016 to 2021 were selected. The extracted core trends were then contextualized for the German hospital sector with 12 experts.

Results: We included 44 articles in the literature analysis. From these, eight core trends could be deduced. A heuristic impact model of the trends was derived from the data obtained and the experts' assessments. It provides a development corridor for the interaction of the trends with regard to technology intensity and supply quality. Trend accelerators and barriers were identified.

Conclusion: The impact analysis shows the dependencies of a successful digital transformation for the hospital sector. While data interoperability is of particular importance for technology intensity, the changed self-image of patients is shown to be decisive with regard to quality of care. We show that hospitals must find their role in new digitally driven ecosystems, adapt their business models to customer expectations, and use up-to-date communication and information technologies.

Keywords: Digital Transformation, Digitization, Healthcare Provision, Hospital, Trends

Bounce Forward: Resilience Building in the Post-Pandemic Finnish Workplace Through Futures and Foresight Capability Development

Richards, Martyn
Finland Futures Research Centre, University of Turku, Finland

During the COVID-19 pandemic, there has been a fairly successful transition to teleworking in the specialist sectors in Finland, but in the long run, isolation and uncertainty affect well-being at work and companies' innovation and community learning (Eurofund 2020). The post-pandemic recovery period has been seen as an opportunity not to return directly to the old way of working, but to develop and enact operating models that foster innovation, well-being, and environmental regeneration.

The goal of the Bounce Forward - Resilience in Working Life (resilienssiatyoelamaan.fi) project is to strengthen the resilience of companies and staff through interactive practices, cultivating leadership skills, and enhanced future thinking.

Resilience refers not only to the ability of individuals and organizations to recover to survive, but also to change and innovate to thrive. Features of a resilient organization include, for example, continuous community learning and innovation, anticipation and preparedness, awareness of goals and common direction, and doing things together, experimenting and making mistakes. In order to foster resilience, the Bounce Forward project has been running two parallel capability development programmes in the form of Resilience Workshops for SMEs and Futures Agent trainings for knowledge economy professionals.

In the Resilience Workshops, companies learn to understand the manifestations of complexity behind the everyday situations of their organization, explore possible and desired futures, and enter a dialogue with alternative pathways that may express a more sustainable fit to the post-pandemic environment. The goal of the resilience workshops is to develop competencies and practices that strengthen the ability of organizations to change and create new opportunities for change. Each company selected a topic to develop according to their own needs. Expert-intensive SMEs from Uusimaa, Päijät-Häme and Central Ostrobothnia participated in this project.

Futures Agent training for experts is designed to increase the internal capacity for creative collaborations, to enhance opportunities for the co-development of organizations, and to support the development of skills that help individuals to navigate uncertain and emergent futures. Futures Agent training for experts provides informational and methodological skills for navigating change. Training, including webinars and small group work, progresses from identifying problems and opportunities to attain broader insights, solutions, and tools. Futures Agents go on to champion experimental innovations in their own organisations.

The poster session presents illustrative examples activities from the project, including sessions on games based futuring, the development of a custom set of post-pandemic work-life trend and issue cards, and feedback from workshops and trainings.

Bounce Forward - resilienssiatyoelamaan.fi (2022). Available at: https://resilienssiatyoelamaan.fi/
Eurofound (2020), Living, working and COVID-19, COVID-19 series, Publications Office of the European Union, Luxembourg. Available at: https://www.eurofound.europa.eu/publications/report/2020/living-working-and-covid-19

***Keywords**: Capability Building, Futures Thinking, Futures Literacy, Post-Pandemic Work-Life*

Promoting Sustainable Health and Well-Being at Maternity and Child Health Clinics

Grotenfelt-Enegren, Mikaela - Leena Helenius - Charlotta Holmström - Anni Kaikko – Jaana Laisi - Hanna Rintala - Kristiina Patja
University of Helsinki, Finland

Background: Many lifestyle changes improving health and well–being are simultaneously beneficial for the environment. Maternity and child health clinics, providing free antenatal care and health services for children under school age, play a key role in health promotion and also have a great potential in promoting sustainability.

Aims: To integrate the promotion of sustainable lifestyle choices into care protocols and practices at the maternity and child health clinics in the Päijät-Häme region, through a real-life pilot during 2020-22.

Methods:
1) Training health care providers in sustainability thinking through interactive training sessions, utilizing systemic thinking and futures approaches,
2) identifying existing good practices as well as new possibilities to promote planetary health at the maternity and child health clinics,
3) co-creation of new care protocols with health professionals and environmental experts as well as clients,
5) examining educational and other needs to adopt contents into clinical work,
6) testing new protocols and collecting feedback from practitioners.

Results:
- Public health nurses were able to identify current practices promoting sustainability in their daily work.
- A framework for care visits and other tools developed for health care providers.
After the training 93% of the respondents (n=29) saw that the healthcare sector has a critical role to play in promoting sustainability and 76% of respondents had changed their mind regarding this as a result of the training.

Conclusion: Public health nurses welcome a role as change agents and sustainable lifestyles can be promoted as an integrated part of routine care visits at maternity and child health clinics. Key factors for success include participatory methods and a multiprofessional approach.

***Keywords**: Planetary Health, Sustainable Lifestyles, Health Promotion*

Planetary Design Combines Forest to Housing?

Kemppainen, Vesa
University of Eastern Finland UEF, Finland

Can urban living remain within the limits of planetary carrying capacity by matching the forest and its diversity to housing in a solution-oriented and visionary way?

How could we shape an inherent forest ecosystem and housing together to promote resilience?
In my dissertation research (2022-2025), I will address the improved resilience achieved through the combination of forest nature and housing. From a housing perspective, the study explores the latest research of natural and nature-based solutions, ecosystem services, forest biodiversity, urban green solutions/land use planning, urban housing and wood product industry (value network). The project aims to identify cross-sectoral phenomena, analyze causal relationships and form solution options on the principle of life-centered planetary design. Design empowers

research and research inspires design. The study's broader approach is to reorient human ingenuity from overconsumption to rebuilding the natural connection and staying within the limits of the Earth's carrying capacity.

The main object of the study is timber apartment building and housing because it has a built-in but still narrowly exploited connection with the forest compared to potential. The experience of wooden apartment buildings has been studied in various ways and from different perspectives. Transparency of wood raw material origin and sustainable forest management has been tried to verify through forest certification. Then again there is a desire to increase the green environment in cities because research suggests at least that nature improves urban attractiveness, liveliness, residents' well-being, stress relief and the ability to mitigate and adapt to the challenges posed by climate change. Nature-based solutions contribute to ecosystem services to people and increase biodiversity and connectivity.

There are numerous examples of positive effects of nature for residents, but how would these be combined, diversified and expanded in the future? What kind of social and cultural link from housing to forest is possible or viable in addition to ecological and economic perspectives? How could the forest link in housing promote learning, innovation or even togetherness?

The presentation at the Futures Conference 2022 is based on a review of existing studies brought together from studies on forest and housing resilience.

***Keywords**: Planetary Design, Social-Ecological Resilience, Forest, Housing, Biodiversity*

Futures of the Food Industry – Which change factors could disrupt the global food system by 2040?

Mäki-Teeri, Marianna – Anna Grabtchak – Antti Niemi – Eljas Aalto – Göckçe Sandal – Max Stucki – Shiori Ota – Tuomo Kuosa - Yukie Ikezumi
Futures Platform, Finland

The world's food system faces multiple future challenges: instability related to the food security is becoming one of the major global risks in the coming decades. This foresight study aims to give perspectives on plausible change factors that can disrupt the global food system by 2040.

Conducted in collaboration with Futures Platform's diverse team of professional futurists and a panel of 25 industry experts from various public and private organisations, the research outlines **12 change drivers** and **50 key trends*** shaping the futures of food production, trade, and consumption. The study included two main stages: the first focused on horizon scanning identifying the potential disruptors of food system. The second stage was an expert panel survey intended to evaluate, prioritise, and outline the critical change drivers and phenomena associated with them.

Organisations that identify ways to leverage the opportunities arising from these topics could be able to build a preferable future for themselves, in contrast to those that are not ready for the changes and challenges related. The challenges approaching us are demanding in an unforeseen way and could lead to painful compromises if we fail to seek and discover mutually beneficial solutions and opportunities that many organisations could benefit from, or if the investments needed would be given too late. It is increasingly understood that success in the future is based more and more on collaboration and synergies, enabling sustainable and positive environmental, health, economic and social impacts in the food system with a potential to also impact other sectors.

Above all, in the study seeks to encourage individuals to develop their understanding of the future of food industry on a general level, and especially to help business operators and decision-makers in the field to identify and outline the various risks and opportunities in a clear and actionable way. An overall picture of various alternative futures is a powerful tool for steering an organisation towards desirable futures.

***Keywords**: Food System, Food Security, Horizon scanning, Survey, Trend Analysis*

* The collection of the identified change drivers and trends can be viewed from the foresight radar openly accessible during the conference (13.6.2022-30.6.2022) Click here to read more: www.futuresplatform.com/food.