How should universities care for the future?

Universities promote themselves to students, to funders and to society as playing a distinctive role in anticipating, shaping and caring for the future. Universities are described variously as 'crucibles' for forming the future (Rhodes, 2001), as addressing the 'grand challenges' of the 21st century, and as preparing students for the future. As such the self-image and the social identity of the university can be understood as fundamentally anticipatory – imagining, making and acting upon the future. That such a self-image exists is not surprising; universities have since medieval times, sought to claim a distinctive role in producing knowledge about the future (Burrow & Wei, 2000), the Enlightenment was characterised by the production of western science as a unique tool for producing human progress (Dussel, 1993; Wellmon, 2015; Facer & Wei, 2019), while more recently, the call to develop a Science of Anticipation makes a case for the distinctive contribution of universities in the development of foresight (Poli, 2018). Assumptions about the anticipatory capacity of universities, therefore, are lodged firmly in their institutional narratives.

And yet, such claims are increasingly difficult to sustain when we consider the relationship between universities and one of the fundamental failures of contemporary anticipation: namely, the significant warming of the climate, and its consequent material, social and ecological disasters. Indeed, while academics have been one of many important groups producing knowledge of ecological damage and climate science, the university as an institution stands accused of complicity in the production of climate change (Wright, 2018; Slaughter, 2012); of acting 'ecocidally' (Ainley, 2008); of failing to act to address the most basic sustainability challenges on campuses (Soini et al., 2018); of producing students who are more likely to harm the planet than to protect it (Bonnett, 2013); of developing academic identities that are premised upon internationalisation, travel and exploitation of resources (Tannock, 2010); of sustaining a colonial hierarchy of knowledge that obscures and denigrates the forms of knowledge necessary to developing sustainable modes of life (Pashby and Andreotti, 2016)); and of maintaining disciplinary forms of knowledge that obscure and prevent engagement with the complexity of the entangled social, ecological, political and material phenomenon of climate change.

This curated session seeks to name and explore the tensions that constitute the contemporary university and its anticipatory capacity specifically in relation to climate change and to ask what form the university might need to take if it is, in fact, to be capable of caring for the future. In so doing, it addresses two of the core conference themes: caring for the future and anticipatory learning.

This interdisciplinary session will comprise a series of six short papers from speakers who draw on backgrounds in philosophy, communication, sustainable development, education, urban studies, computer science, cultural studies and physics and who work in fields ranging from futures studies and sustainable development to education and philosophy. Following these interventions, we will open up a creative discussion, mediated by arts practice, with the wider community of Anticipation Conference delegates. This activity will begin to explore what form a university capable of caring for the future might take. The session will draw on diverse theoretical and empirical resources, but will be particularly informed by the

possibility of the university as a site for convening publics around matters of concern (Latour, 2004) (Simons and Masschelein, 2009) and matters of care (de la Bellacasa, 2011).

Drawing on empirical and theoretical studies, the papers will explore a set of key tensions in the development of the anticipatory capacity of the university, specifically in relation to its capacity to care for the future:

The politics of knowledge: how can the university build knowledge of and for the future in partnership with other knowledge communities, including those who have previously been disavowed by western science? How might disciplines and knowledge hierarchies need to evolve and adapt, or be radically disrupted, to enable appropriate knowledge and action in relation to the complex futures promised by climate change? How can universities come to reflect, in what they do, the complex nature of anticipation as on one hand related to what might be expected and prepared for now, and on the other as committed to keeping the future open for the unexpected and the new, as an intrinsic component of future-oriented knowledge that resists the colonization of the future in the name of human flourishing?

The public roles of the university: some universities are beginning to innovate in anticipatory public pedagogy and public research that positions the university, its staff and students, as social actors in and alongside communities, working to support the development of 'everyday futures' and to engage in challenge-led activities. Such a role brings advocates of these activities into tension with those who would see the university as an autonomous site of intellectual production. How do these practices change the anticipatory capabilities of the university? What new collaboration arenas for anticipation can and should be forged between universities and publics? What new institutional structures are adequate to addressing emerging futures?

The intergenerational contract: the last six months have seen a growth in student movements, sit-ins and strikes with the 16-year-old climate activist Greta Thunberg a highly visible critique of the failure of older generations to anticipate and address global warming. At the same time, younger climate activists are increasingly reporting burn-out, anxiety and the absence of elders to support them in their struggle. In a context in which youth mistrusts age, and established wisdom is seen as having failed, how will and should the intergenerational relationships of the university evolve?

Stewardship and invention: universities are torn between their role as stewards of the past and their potential to invent and create new futures. The narrative of 'progress' that has constituted the university since the enlightenment and which is premised upon a linear temporality may now be in question. Drawing on the Adrinka symbol of Sankofa, we will ask how the university's engagement with the heritage of the past might support imagination and care for the future, how might a synchronous and how might a multi-layered conception of temporality better support the university in its anticipatory practice?

Speakers include:
Keri Facer (session convenor) Zennström Chair in Climate Change Leadership at the University of Uppsala and chair of the Anticipation 2017 conference. Professor John Holmberg, Chalmers University and UNESCO chair in education for sustainable

development. Dr Celine Granjou, sociologist of the environment, University of Grenoble. Professor Johan Siebers, Middlesex University, philosopher and communications theorist and vice-president of the Ernst-Bloch-Gesselschaft, Ludwigshafen. Susanna Barrineau, Project coordinator for the Swedish International Centre for Education for Sustainable Development. Laila Mandy, Climate Change Leadership Project Leader.

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THEME: Feeling the future

Prototyping futures:
How a mindful co-writing method for short videos support ideation

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Abstract
This case study is about linking a collective writing method to a process video approach that blends screen grammar with 2-D and 3-D prototyping. The study explores how to bring out the immediately felt subjective and qualitative aspects of the short videos, and gives a creative and interpretive role to the viewer. This pedagogically framed study was integrated into an on-going course for industrial designers to support an anticipatory practice for creating future scenarios and objects. By co-creating scenarios and videos, we aimed to enrichen the course with an aesthetically driven co-writing method for short videos. This method emerged in a Nordic interdisciplinary design research project called Haptica. Students were introduced to basic screen grammar in order to use video as a creative-, process- and presentation tool. The results and discussion deal with how immediate aesthetic explorations combined with mindful co-writing method bring focus to the fuzzy phase at the start of an ideation process. The main contribution of this study is in how the process video about fictional scenarios and the co-writing method unfold into a collaborative anticipatory system that bringing desires for the future into the present situation.

Keywords
Collective method, aesthetic, haptic, future & fictional scenarios, performative, education, anticipation.

Introduction
We describe a case study about how a co-writing method for short videos can contribute to a creative, iterative process in the development of industrial design projects. During the last decade the Oslo School of Architecture and Design (AHO) has integrated future prototyping methods in an industrial design studio course called “ProtoHype”. This course, headed by Professor Håkan Edeholt, introduces radical change, sustainability, future studies, and foresight. What characterizes this ongoing course is the lectures and tutorials on video-based sketching techniques by Even Stormyhr, integrated with early phase physical prototyping methods developed by Nina Bjørnstad. By jumping between writing fictional scenarios and making 2-D and 3-D collages, the students find forms of interest that are featured in their videos. In 2018 we introduced a revised version of the “Aesthetic driven co-creative writing method for short videos” (Akner Koler et al, 2018). It is a mindful co-writing method that complements the established foresight and video-based sketching techniques, that has been part of the course from the beginning. As stated by Roberto Poli (2017), an anticipatory system is not only

predicting a phenomenon or possible future, but suggests that by taking action as a consequence, is accordingly an anticipatory behavior.

Background

The original co-writing method for short videos (Akner Koler et al, 2018) was developed and applied amongst professionals during an interdisciplinary aesthetic seminar. The seminar was supported by the research project HAPTICA (www.haptica.se), that engaged members and guests with diverse backgrounds from sculpture, design education, culinary arts and hospitality. After the seminar, the co-writing method was documented outlined in the following five stages 1. Video filming, 2. Viewing, 3. Interviewing, 4. Reflection and expressive writing, 5. Showing video and vocal performance (Akner-Koler et al, 2018).The method was later presented in an interdisciplinary workshop at the Design School Kolding in Denmark during the Design Micro Conference, "Addressing designed form - demarcating design" 2018, hosted by Richard Herriott (2018). Here we learned the importance of nudging the viewers' emotional response as they viewed the video and carried out the interview, before retiring for a mindful writing session.

"ProtoHype" course structure

A group of approximately ten students, take a course in screen grammar as a creative design tool for developing scenarios for fictional videos (Rabiger 1996). The scenarios are made collectively in a group of 2-3 students, who aim to support a sharing culture and a common "universe" for their individual stories that unfold over time. The students learn video filming and editing methods that discern the actors and the "acted upon."
The combined video methods have three stages:
1) *Process video* emphasizes the haptic and visual aspects of an activity/phenomenon. At this early creative and explorative stage, each student group present touchpoints for their future scenarios.
2) *Communication video* presents the design process.
3) *Presentation video* shows a future fictional scenario.

This extended abstract focus mostly on the *process video*.

The *process video* is meant to untangle how designers conceptually and emotionally relate to their scenario. It is about exploring some haptic /embodied aspects of the scenario by making mockups for the scenes. Each process video can be seen as an anticipatory action, since it highlights behavior within a tangible life situation in the present (Poli 2017). The *communication-* and *presentation video*s are designed in a more pedagogic way, that describes the design process focusing on the results.

Meaning makers

The student's point of view and chosen actions are of particular interest as; meaning makers, designers, video makers, and actors. The perspectives are discussed regarding technology, professional ethics and screen grammar, guided by the designers' intentions showing a way of foreseeing future changes. Co-creators are also the advisors and other students that may play a significant role in ideation. Involved actors' opinions are often immediate and intuitive; we see

that written feedback adds a mindful and creative aspect to the design process. Co-creation requires “interpersonal intelligence” (Gardener 2011) in order to consider other opinions. Moreover, Gardeners “spatial-visual intelligence” explains the students’ capacity to visualize by creating physical prototypes, serving as “actors” that carry the leading role in the videos. These prototypes inspire students to explore their “bodily-kinaesthetic intelligence” through direct interaction.

Ideation

The imaginative co-creative process and the unpredictable outcome of explorations show a mindset and actions from which a future scenario could emerge. The process videos that capture the scenarios support the fuzzy phase at the start of an ideation process. Through embodied exploration with physical phenomena combined with metaphoric reasoning, the students develop their first process video. According to Murphy, Peters, and Marginson (2010), things come into being through metaphors and material application. They claim we experience imagination as imagery, and ideas as metaphors. Different metaphors and different styles frame our thinking. Different epochs express different metaphors for thought. Further, they state, “the imagination is a mix of feeling, sensing, and thinking” and “the imagination involves a process of object creation”. These ideas link to the first step in the creation of the process video, that start with a prototyping lab about what ‘ought to be’.

The process video shows making aspects, which are typical for designers way of focusing on “close to body” actions. New artifacts in future contexts are prototyped; soon story and style are of vital importance. Studying a model called “Design and radically different futures” from Håkan Edeholt (2004) brought our attention to tools designers use to create radical future designs.

We found by creating short videos combined with prototyping future scenarios to be both a creative way of working as well as persuasive, multimodal communication. The student voices came through in both dramaturgy and editing, where style is of particular interest. To explore iconic styles the students studied radical visualizations in the early 20th century futuristic films.

Contributions to the field of anticipation

The co-writing method supports a way for students to tap into their immediate emotional responses and develop empathy for other students’ work. It is a sensitizing method for learning to reflect on how a short explorative video can express afuture scenario and awake feelings that bring you in touch with embodied memories. The method unfolds an anticipatory system by bringing the future scenario into the present situation (Louie 2010). The video maker is usually not aware of the different emotional layers embedded in a short video. By inviting one student group to respond to another group's short video, they can cultivate a felt experience for the video and support the emotional and narrative qualities of the scenario as it unfolds.

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Designerly Ways of Futuring: Virtual Reality as a foresight tool for Long Term Sustainability

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Abstract:
With the early onset of cataclysmic climate breakdown (Xu et al., 2018) and "biological annihilation" culminating in the 'sixth mass extinction' (Ceballos et al., 2017), organized human life is presented with a bleak future. Even in our collective imagination we are forced to comprehend the self-reinforcing loops of dystopian thinking where it has become far easier to imagine the end of the world (O'Brien 2018; Slaughter 1998). Given the pressing and immediate need for climate action there seems to be a crisis of imagination in seeing futures beyond the dystopian visions of 'Business as Usual' (BaU) (Slaughter 1998). Given these *defutured* (Fry 1999) frames, it becomes *essential* to imagine and design for radically different, long-term sustainable futures—futures that don't yet exist. But to avoid the cognitively loaded processes of *predicting* these futures, forms of *playful* anticipation with conceptions of the future have been put forth that suggest opening up possibilities for more robust futures, engaging in a more "brain-body-spirit" learning through "other ways of knowing" (Inayatullah 2017).

These "designerly ways of knowing" (Cross 1999) the future, frame how designers engage as 'futures archaeologists'(Candy 2013) within a futuristic design. These "designerly ways of futuring" happen within discursive design where specifically Speculative and Critical Design (SCD) has been creating these moves towards designing for such alternative future contexts by gathering foresight into strange and "provocative" future worlds (Dunne and Raby 2013). SCD as a practice claims to envision alternative future scenarios with artefacts for not 'how things are' but 'how they could be'. However, in its rejection of "design-solutionism" and "problem solving" (Bardzell and Bardzell 2013), it ends up either further entrenching market-based alternatives or overtly focusing on dystopian warnings of BaU futures that are neither desirable nor feasible (Tonkinwise 2014). In this paper, SCD is applied as a strategic enquiry for the 'design doing' by 'probing' and 'sensing' and resolving alternative futures to *discover* new possibilities in the case of solar technologies of the future. Within this "solution-finding" approach to SCD, Virtual Reality (VR) explores the future of renewable solar energy through an alternative technological frame of renewable solar energy by *anticipating*, *projecting* and *provoking* technology in a speculative future. Here, VR is employed as a tool to break from 'reality' of the present, suspending disbelief and enable design practitioners to *discover* these speculative technologies—an immersive form of "brain-body-spirit" learning. In such an SCD framework, speculative futures are pursued not to predict the impact of climate change on futures, but to *reveal* the diegetic prototypes (Kirby 2010) *for* preferable futures as a 'point of departure' for these technological frames to be pursued today.

Artefacts from this speculative future explore fictional technologies through a design fiction (Lindley and Coulton 2016; Bleecker 2009), titled "Blockchain Radioactive", which is then "built" in VR for gaining foresight into forms of possible solar cell technologies that might *emerge* from this future. The VR fiction explores an egalitarian, technologically advanced, nomadic community in Chernobyl in the year 2075. This community 'harvests' solar energy with "solar energy staffs" which convert solar, wind and radioactivity into safe renewable energy. These "solar staffs" are speculations of technological research in solar energy that already exists today, speculating and *apologizing* them to fit this alternative future. The foresight from this 'speculative' future fiction is then 'back-casted' towards a pragmatic solution today—as a 3D printed, optical solar cell—drawing and combining upon existing material and technological frames. These are proposed as an alternative for solar cells today in which fiber optic structures are 3D printed and etched with graphene to harvest renewable solar energy today. This manifestation of a speculative future artefact realized back into the present —fragments of technology from an imaginary future, might be considered a form of "time travel". Here the designers that construct it become the "futures archaeologists". These artefacts are not intended to "prove" these technologies but articulate a

broad scope for "solution-finding" towards long-term sustainability in some parts by critically reimagining the normative traits of solar cells.

The paper will discuss how these speculative, 'radical imaginings' in VR of more resilient and preferable futures might *discover* other such technological artefacts by *embedding* these the future foresights into the artefacts themselves. In so far as it enables for visualizing and 'bodily sense-making' of the abstract future scenario, the HTC Vive VR headset functions as a portal to a "speculative time" which helps investigate the texture and potentiality of future artefacts. In conjunction with 'traditional' industrial design tools and artefacts, a concept film, shot in this "virtual future" explores the complexity of the diegetic prototype from the design fiction (Arnall and Martinussen 2010). Introducing VR helps bridge the uncertainties of space and time whereby an imagined, *artefact* can be transposed into a virtual future "world" through simultaneous narrative and fictional 'world building' (Wille 2015). VR shows potential as an open collaboration tool for industrial designers and other stakeholders, those otherwise interspersed globally, to engage with these future visions and build desirable futures. The paper reflects on the ways in which such a 'futures oriented', 'solution-finding', SCD practice, might facilitate both critical futures discourse *and* designed solutions for climate action towards long-term sustainability.

Keywords: Future, foresight, virtual reality, climate change, sustainability, prototyping, industrial design

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Unbuilt: An Incomplete Compendium of Anticipatory Architectural Fictions

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"Architecture cannot create a revolution. However, architecture possesses the ability to position technological and social change into situations people can understand, thus either accelerating or slowing such transformations."
–Bernard Tschumi

Architecture has a long history of unbuilt projects. Failed financing, a competition loss, a client with cold feet, or an economic collapse can render a project unbuildable. But there is also a world of purposefully unbuilt architecture – critical, speculative architectural fictions – that merge spatial and temporal working methods to apprehend the complex world around us in new ways and to anticipate our collective future.

This paper examines seminal works of speculative architecture from 1900-2000 through comparative case studies and draws alignments between these works and the anticipatory frameworks that enabled them. Speculative architects combine temporal and spatial modes in their work by embedding architectural concepts within a critical narrative. These speculative architectures combine temporal methods from other disciplines – media, politics and literature – with spatial architectural methods to unite spatial thinking with temporal storytelling.[1] Speculative architecture that utilized media transformations (such as 1960s magazine culture, the 1990s website boom, and the early 21st century social media revolution) to influence public discourse through anticipatory architectural fictions has arguably had greater impact in future making than any single built architectural project ever could.[2]

This paper relates to existing research and practice in architecture and anticipation studies by examining architecture's ability to leverage critique through designs that address plural perspectives.[3] Architects, through years of rigorous training, are uniquely capable of synthesizing and envisioning complex information in accessible ways. Most architects design buildings, and certainly all architects design narratives and stories to communicate their work to multiple stakeholders. This skillset has clear application for strategic anticipation of technology transitions, policy transformations and cultural shifts, but is seemingly undervalued by the architecture profession itself.

Professional architecture organizations tend not to legitimize speculative architecture because of its unbuilt status. There is a deeply engrained notion within the profession that

[1] "What Is Speculative Architecture? FAQ by Liam Young," Strelka Mag, accessed February 10, 2019, https://strelkamag.com/en/article/what-is-speculative-architecture.
[2] Geoff Manaugh, *A Burglar's Guide to the City* (New York: Farrar, Straus & Giroux Inc., 2016).
[3] Robert Campbell, "Critique.," *Architectural Record* 189, no. 8 (August 2001): 57.

real architectural practice is rooted in making buildings. Yet, architectural practice comes in many forms, with intellectual application across many industries and disciplines. Furthermore, architecture as an academic discipline has long been image based. Before founding the Graduate School of Architecture Planning and Preservation (GSAPP) at Columbia University, William Ware traveled the architectural ateliers of Europe documenting the work of master architects with a revolutionary new imaging technology of the time: the slide. He returned and founded the first ever School of Architecture at MIT, and then GSAPP at Columbia University. The slide was profoundly democratizing as it enabled architecture to transition from an aristocratic pursuit to an academic discipline. Buildings cannot come to a classroom, but images of them can, thus allowing architecture into the university.

Today, digital imaging technologies are radically changing the ways we envision and record architecture. This paper argues that in the evolving media sphere, speculative architecture, rather than built architecture, has an increasingly greater capacity to mold the future by shaping public discourse through its ability to critically engage with the forces at play behind the built environment such as interconnected systems of finance, computation, global-scale flows of standardized building materials, and risk management protocols. All of these interconnected and multi-scalar systems influence the built environment, but operate at faster timescales than buildings do. Moreover, speculative architecture is able to make use of evolving media technologies to embed visionary critique within streams of readily circulating images. While various editors and curators contribute in substantial ways by collecting and organizing speculative work, there are a number of speculative architects who have directly capitalized on specific transformative media technologies. Their speculations were united with emerging instruments of media and became embedded in the public imaginary, thus having considerably more impact on the future than a single building might have.

Based upon the long-established scholarship and practice of speculative architecture and the emerging scholarship of anticipation studies, this paper builds upon work that distinguishes anticipation as an empirical phenomenon from the conditions that make anticipation possible.[4] Specifically, in the works of speculative architecture presented through comparative case studies, the relationship between the anticipatory design and the present-rooted conditions that made the act of anticipation possible are interrogated within the context of architectural design processes and media distribution networks to lift expertise and knowledge from architecture into anticipation studies.

[4] Roberto Poli, "The Many Aspects of Anticipation," *Foresight* 12, no. 3 (2010): 7–17.

Anticipating a Better City: Redesigning Post-Quakes Christchurch

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The Canterbury earthquakes of 2010 and 2011 led to the destruction or removal of 1000 buildings from Christchurch's city centre. Eighty per cent of the central city was damaged or demolished. Some 68 000 residential homes required repairs, and a further 7000 "red-zoned" residences were compulsorily purchased by the Crown (Earthquake Commission, 2017). Half the city's roads were damaged and a third of the city's sewer network. This was primarily a tragedy: 185 people were killed and over 7000 injured. It was also an opportunity for wholesale urban renewal, providing the prospect to "build back better". Christchurch became 'the theatre of the greatest single urban design project in our nation's history' (Falconer, 2015). "It's like someone picked the central city out of Christchurch," said the proponent of the Sensing City project that promised to turn Christchurch into the planet's first genuinely smart city. "No one in the world is rebuilding the heart of a living city from scratch" (Dennis, 2014).

Initial signs were promising. Arguably, no city of comparable size has had such high levels of investment. *Foreign Policy* touted it as a global city to watch: the 'massive rebuilding effort … is a unique opportunity to rethink urban form'. The Council was feted for its Share an Idea process of public "conversations" which anticipated the central city's future. International accolades were garnered for the city's temporary urbanism programmes. KPMG declared it a magnet city, which attracts people and money and provides synergies for exciting, creative and lucrative endeavours.

Alas, the first city of the twenty-first century was not to be. The people's plan (Share an Idea) was replaced by the government's blueprint (Christchurch Central Recovery Plan), the smart city died a swift death, and KPMG quickly curbed its enthusiasm, lamenting an opportunity lost. Cynics suggest that despite the initial burst of optimism the city centre has moved from red zone to dead zone. It is all too easy to find media headlines like 'Can Christchurch be saved?' (Stylianou, 2014) and 'The future isn't going anywhere, so why did Christchurch rebuild the city of yesterday?' (McCrone, 2017).

Yet there is much still to be anticipated. The city's preeminent symbol, ChristChurch cathedral, remains a ruin. The city's centre, Cathedral Square, awaits development. Proposed anchor projects like the sports stadium have not been built. The official plan for 602 hectares of residential red zoned land has not been announced. Five thousand household insurance claims are outstanding (Canlas, 2018). The Earthquake Commission has received over 10 000 complaints regarding shoddy rebuilds, with one lawyer suggesting that there may be thousands more that have not been properly checked or repaired (Woods, 2018). Council has urged its citizenry that "normality" is at least another decade away, while proper roading will take twice as long (Mackenzie, 2018).

The future designs for the city's social and physical infrastructure need to anticipate the fallout from two "time bombs" (Grimshaw, 2018): traumatic and economic. Four out of five Christchurch primary schoolers have symptoms of Post-traumatic Stress Disorder and are "neurologically different" (Liberty and Allen, 2017). Referrals to school counsellors are at an all-time high. Demand for adult mental health services continues to grow. And this was all prior to the terrorist attacks of March 15. Meanwhile, the insurance pay-outs that propelled the rebuild have plateaued. Canterbury's unemployment levels exceed the national average, and this year its regional economic growth predictions were the lowest in New Zealand (McCrone, 2019).

Using Ahvenharju et al's (2018) notion of futures research as the attempt to unpick the nexus of the 'possible, probable and preferable', this presentation examines the reasons for Christchurch's perceived failure to build back better. It draws from our three-year research project on the Canterbury earthquakes, funded by the Royal Society of New Zealand. Its focus is on how to design sustainability into the city. Putting a city back together is always going to be a protracted, difficult and contentious process. We highlight competing visions of what "better" might look like, and offer reasons for the perceived slowness of the recovery. Despite widespread belief that disasters offer the perfect opportunity to do things differently, actors still find themselves constrained in all sorts of ways. For while buildings crumble, institutions and vested interests endure.

Contestations between multiple stakeholders have been clearly discernible: national versus local government, authorities versus the people, corporations versus community organisations, the wealthy versus the poor (geographically framed as the west of the city versus the east), and the European (Pākehā) majority versus the Māori minority. The Canterbury earthquakes marked the first major disaster in which an Indigenous group (Ngāi Tahu) became an official party to a rebuild. While the top-down governance structures were labelled worst practice by international recovery experts (Ahlers, 2016), the "flax roots" Māori recovery efforts were hailed as best practice (Kenney and Phibbs, 2015). Some of the contestations have been over space – classic "right to the city" arguments (Lefebvre, 1968) that advocate for a city with co-created space for all. Other contestations are over time – what is the city's future, what should Christchurch become? Perhaps the most consciously English city in the colonial settler project, could it become a genuinely postcolonial place? As Katie Pickles (2016: 9) has written:

> The earthquakes have exposed major components in the history of Christchurch, such as the dominant Anglican tradition and Englishness, the denial of Māori past, and the environmental pitfalls of building a city on a swamp… it is unhelpful and inaccurate to cling to an imagined city, or attempt to rebuild, restore and regenerate aspects of the past that were long gone before the earth moved. Rather, mindful of the past, it is important to consolidate in the present and embrace the future. It is here that Christchurch's recovery story will be useful globally as well as locally and nationally.

Drawing on the notion of Futures Literacy (UNESCO, 2014) we read Christchurch as a laboratory for an urban, unequal and environmentally threatened world.

Eulogy of a non-predictive anticipatory medicine

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Creating a distance between anticipation and prediction

Nowadays we are confronted with a frequent semantic confusion between anticipatory medicine and predictive medicine. This might be seen as a symptom of the more general difficulty to pluralise our conceptions of anticipation. The notion of anticipatory medicine seems to be similarly used for concepts like algorithmic predictions, pre-symptomatic diagnoses, numeric decision support or massive prevention databases. A deeper reflection, however, about the real meaning of anticipation in the context of health and care is missing (Nadin, 2018). This requires detachment from our current conception of anticipation and the predominance of its predictive vision. Only then will it be possible to identify and analyse the limits (conceptual, technical and political) of the ambition of a predictive medicine that is a medicine seeking to anticipate a future state of health using probability calculation on the basis of data collection. A better understanding of the philosophical presuppositions of prediction is needed as well as an understanding of ways in which these presuppositions are concretely translated into the practices by actors of the health care system. However, the scope of a non-predictive anticipatory medicine that would rely primarily on the deconstruction of predictive devices would be quite limited, even counterproductive. To measure its strengths we need to observe other discourse and anticipatory practices.

Constructing a critical culture of anticipation

Beyond a simple critique of prediction, we propose the construction of a critical culture of anticipation that can compose between the probable, the possible and the imaginable (Coutellec, Jolivet, Moser & Weil-Dubuc, 2019). Taking medicine as an experimental field, we offer a eulogy of non-predictive anticipatory medicine. This opens up a gap to such an extent that the dominant thinking of prediction will be significantly weakened. The ambition is to recognise anticipation as a "taking-care-of-the-future" (Coutellec & Weil-Dubuc 2016) that is more than risk calculation or repetition of the same. To reinforce this critical culture of anticipation, we will explore two dissident figures of anticipation in medicine, that is adaptive anticipation and projective anticipation (Moser 2018).

Possibilities of an adaptive anticipatory medicine

«It is not important to predict the future, but to make it possible » (Antoine Saint-Exupéry): this could be the leitmotiv of an adaptive conception of anticipation. At this moment we are maximizing the power of technical anticipation devices such as computers and thus determining certain probable trajectories within a set of possibilities. But rather than over-valuing what we know about what we do not know (Firestein, 2012), adaptive anticipation seeks to create the conditions in which the future can be envisioned but remains simultaneously open. Unpredictability of what can happen is then erected as a principle of action for the present. Indeterminacy of the future makes it necessary to take care of the evolutive potential of the situation. This allows to give importance to the adaptative and resilient capacities of individuals and systems. From very concrete situations in the field of

care taking and health, we will present different practical strategies that identify the adaptive potential of anticipation in health care.

Possibilities of a projective anticipatory medicine

The main characteristic of projective anticipation is the temporal break in chronology, relying, in the manner of utopia, on fiction. The anticipated future is a projection, desirable or alarming, but in all cases radically new. The strength of this conception is a detachment from both the weight of the past and the determinations of the present, breaking with the arrow of time (Bensaude-Vincent, 2016). It is not a question of taking into account the possibilities but of imagining the unimaginable, of thinking the unthinkable, to debate the impossible. Conceptual and practical invention are thus at the heart of this idea of anticipation. To illustrate this conception of anticipation, we will explore the potentialities of what some groups of concerned people call the "ecology of diagnosis" (Solhdju, 2015). In what sense can a diagnosis open our imaginations rather than darken our future existences?

Medicine and anticipatory praxeology

Accordingly, we plead for radical dissociation between "anticipatory medicine" and "predictive devices". Within the outlined critical culture of anticipation, anticipatory medicine requires to problematize the different conceptions of the future and the divergent relationships between them. Moreover, such a culture invites us to think about the plurality of practices that allow us to take care of the future and, ultimately, to build a form of *anticipatory praxeology* in medicine. Mapping, comparing and characterising anticipatory practices in the context of medical care – which means a paradigm shift from diagnosis to support – are the essential challenges that will be outlined especially within the exemplary context of neuro-evolutionary diseases.

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Institutional Innovations for Perpetual Obligations

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Abstract / Introduction

Who should advocate for the perpetual interests of future generations? Researchers have evolved several sets of perpetual obligations that current generations have to future generations. However, few national structures contain formal constitutional or institutional provisions to support current generations in meeting obligations, much less to evaluate which outcomes are addressed, with which consequences, over what period of time. This presentation addresses these institutional deficiencies by identifying innovative approaches to ensuring anticipatory care through amendment to national constitutions.

The presentation begins with a review of obligations to future generations. This is followed by a brief review of institutions that exist or have been proposed to advocate for future generations whose existence are not tied to constitutional provisions. The third part of the presentation sets out the criteria used to assess opportunities to amend national constitutions and five general types of amendments proposed. The fourth part presents some examples of specific recommendations to amend constitutions and also presents some descriptive statistics for how often these opportunities seem to avail themselves in a review of more than forty national constitutions. The presentation concludes with observations about the practical implications for meeting perpetual obligations to future generations with institutional innovations. This contributes to anticipation studies not only by using the future in the governance and policy processes, but by leveraging the anticipatory system itself to seed perpetual obligations into national institutions.

Relationship to Existing Research and Practice

Perpetual Obligations to Future Generations

Eminent futurists, Bell[1] and Slaughter[2], have each developed extensive statements on perpetual obligations to future generations with proposed obligations relating to, *inter alia*: natural resources of the earth; care for public goods entrusted to us by past generations for future generations as well; care as a cultural force that is

[1] Bell, W. (1993). Why Should We Care about Future Generations? In *The years ahead: Perils, problems, and promises*.
[2] Slaughter, R. A. (1994). Why We Should Care for Future Generations Now. *Futures*, 26, 1077–1085.

valuable now and for the foreseeable future; and no regrets. Several other authors also argue for perpetual obligations to future generations. MacLean, Bodde, and Cochran[3] and Schrader-Frechette[4] argue for a fairness obligation: current generations ought not to impose involuntary environmentally-based risks of death upon future generations that they would not themselves accept. Weiss[5], Tonn[6], Golding[7] and others argue for a ''maintaining options'' obligation in which decisions made by current generations should not restrict the various possible futures that could be pursued by future generations. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) developed a Declaration on the Responsibilities of the Present Generations Towards Future Generations that presents eleven obligations, including the maintenance and perpetuation of humankind.[8] Tonn presents a new set of obligations that builds upon these efforts and is up-dated to recognize new challenges to meeting obligations to future generations.[9] In short, futurists have characterized a perpetual commitment; what has not yet been characterized are the anticipatory mechanisms by which current and future generations can keep those perpetual commitments.

Institutional Innovations for Perpetual Obligations

While this presentation argues for institutional innovations via any mechanism as long as it is codified in constitutions, some argue for the specific mechanisms of legislative checks and balances. Gödel and Arhelger[10] propose a European Guardian for Future Generations that would attend to the rights of future generations while keeping current generations informed about the progress in support of future generations. The Institute for European Environmental Policy[11] identifies several boundary-type organizations that have been founded around the world to provide this type of representation for future generations. These include the Welsh Commissioner for Future Generations.

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[8] http://portal.unesco.org/en/ev.php-URL_ID=13178&URL_DO=DO_TOPIC&URL_SECTION=201.html

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Criteria and Approaches in Practice for Seeding Institutional Innovations Through Constitutional Amendments

We used the following criteria to guide the development of opportunities to amend national constitutions to assess whether current generations are meeting obligations to future generations:

- Create an acknowledgement that future generations also are citizens.
- Speak for future generations to engender second thoughts in the current generations' discussions.
- Create a highly visible forum for these issues.
- Serve a vital role as one of the main 'checks and balances' within the government.
- Incorporate core principles of independence, transparency, legitimacy, accessibility, open information.
- Be politically neutral.

The process of reviewing constitutions entailed these steps:

1. Search for mention of any institution established by the constitution that takes up the cause of future generations.
2. Search for any words that indicate that the framers of the constitution took up the cause of future generations, specifically, and anticipation, in general.
3. Search for any commissions or councils that could be tasked with advocating for future generations.
4. Search for imminent individuals or unique institutions that could be tasked with advocating for future generations.
5. Peruse the constitution to identify other opportunities that are consistent with flow and dominant language and terminology used.

The constitutions reviewed so far represent every continent and include the constitutions of the fourteen largest countries by population as well as constitutions for mid-size and island countries. We searched for the following words: future, generation, posterity, foresight, and anticipation. Eighteen constitutions completely lacked any of these words; fourteen had only one mention, usually future generations or posterity. No constitutions used the words foresight or anticipation. The most exemplary constitution is Hungary's, which actually formally establishes The Commissioner for Fundamental Rights that has the responsibility for protecting future generations. Egypt's constitution is inspiring with respect to commitments to future generations, although it falls short in establishing a formal institution to take up the cause of future generations.

Categories of Opportunities

Five categories of opportunities to amend constitutions have been identified and applied to the 40 constitutions reviewed so far. Each category is defined and examples are provided below. The percentages within the parentheses represent the fraction of constitutional opportunities identified that fit into each category.

Commission or Council on Human Rights (20%)
One approach is to amend constitutions to explicitly assign to human rights commissions the responsibilities of advocating for future generations and assessing whether obligations to future generations are being met. As mentioned above, the Hungarian constitution uniquely establishes The Commissioner for Fundamental Rights, which has the responsibility for protecting future generations. Countries that have such commissions whose remit could be expanded include: Kenya (The Kenya National Human Rights and Equality Commission[12]) and South Africa (South African Human Rights Commission).

Ombudsman (12.5%)
Ombudsmen are officials appointed to investigate complaints against public authorities and other major organizations. These officials' remit could be expanded to represent the interests of future generations. Countries whose constitutions establish offices of ombudsman include: Argentina (The Ombudsman), and Morocco (The Mediator).

At-Large Representatives for Future Generations (5%)
The notion that specific people ought to advocate for is a common theme in the anticipation and futures studies literatures. Direct advocacy opportunities through elected representatives, however, are difficult to find within constitutional and typical electoral frameworks. However, there are some constitutions that have provisions for legislative representatives that are not tied to constituencies, which include Norway and Singapore.

Assign Responsibilities to Existing Prominent Person or Institution (32.5%)
In the absence of a commission on human rights or an ombudsman, the constitution may offer an opportunity to assign this responsibility to a prominent person or institution. For example, the constitution of Japan could be to simply revise Article 7 to include amongst the responsibilities of the Emperor—which already include Promulgation of amendments of the constitution, laws, cabinet orders and Treaties and Attestation of general and special amnesty, commutation of punishment, reprieve, and restoration of rights—attestation of whether current generations are meeting their perpetual obligations to future generations. Here are ideas for two additional countries: United Kingdom -- give this responsibility to the House of Lords[13,14]; and India -- give this responsibility to its Supreme Court.

Create Brand New Institution (32.5%)
In many cases, there may be no obvious hook upon which to hang responsibilities for advocating for future generations. In these instances, the approach is to develop ideas for new institutions to be enshrined within constitutions that are tied to the

[12] https://www.knchr.org/About-Us/Establishment
[13] This idea was first presented in this article: Tonn, B. and Hogan, M. 2006. The House of Lords: Guardians of Future Generations. *Futures* 38, 115-119.

language and spirit of the constitutions. An idea that has previously published is to establish the Court of Generations in the United States[14]. Another idea is to create an institutional framework in Germany to allow a 'representative of future generations' who could veto decisions or at least challenge them [15, 16].

Observations

The research and ideas presented above strongly suggest that there are several straightforward ways to amend national constitutions so that the anticipatory interests of future generations are formally represented and that ideas can be developed that fit a wide variety of constitutional contexts. The various opportunities probably differ in their influence. For example, a few at-large representatives for future generations in a legislature may not have the same influence as pronouncements made by the House of Lords. However, first steps are important and any nation can adopt more influential institutional arrangements at time goes on.

The recommendations are also first steps in other ways, too. With respect to Figure 1, the constitutional amendments sit amongst other important processes needed to render good policy. For example, any process needs to have the participation of a broad representation of society and involve people with a broad range of education and perspectives. How to meet perpetual obligations needs part of day-to-day meetings, problem-solving, and decision-making that is at the heart of public policy making.[17] Lastly, the institutional solutions need to allow for constant evaluation of how well current generations are meeting obligations to future generations.

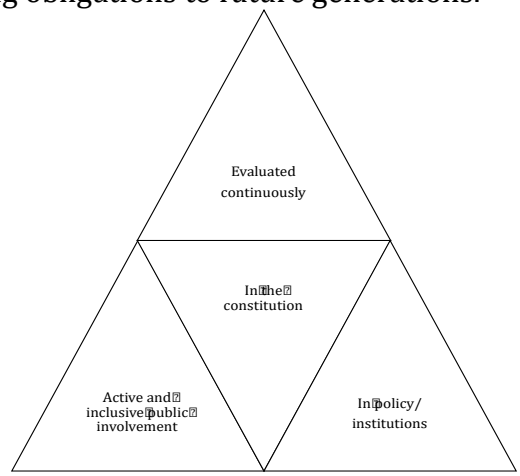

Figure. Building Blocks for Futures-Oriented Governance

[14] B. Tonn, The Court of Generations: A Proposed Amendment to the U.S. Constitution. *Futures*, 23 (5) (1991) 482–498.
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Finally, adopting any amendments targeted to future generations cannot by themselves ensure that society will change in the needed manner. For example, giving responsibilities in this area to India's Supreme Court is only as effective as the Court is able to give this issue its attention. Corrupt leaders and rampant corruption within governments and society can most certainly derail the best of intentions.

Conclusion

This presentation addresses a persistent problem in anticipatory care: Any generation, in any nation, can consider perpetual obligations to future generations. Yet, mostly they do not. And, if they do not do it now, then why would they start doing it? The leaders who can comprehend these criteria for responsible governance and policy also can implement the proposed structures that make it inevitable that perpetual obligations to all generations will be addressed in the regular course of governance and policy.

It is shown that it is the rare constitution that directly addresses meeting obligations to future generations through formal institutional arrangements. Few constitutions even mention future generations in passing and none directly address anticipation or foresight. On the other hand, opportunities were found in every constitution for amendments to formally assign responsibilities for advocating for future generations.

Anticipation of low-carbon energy future 2050 in north-west European countries

Abstract

This study proposes an approach to comparing and assessing the policy settings in the European low-carbon energy scenarios. First, it will present the methodology for such analysis, including ten characteristics for scenario assessment: modelling framework (diversity), ambitiousness of the targets 2050, relations with other (European) countries, stakeholder involvement, technology options, non-technological aspects, economic component, usage of scenarios in policy design, intermediate indicators of targets' achievement and revision of scenarios. Second, based on the combination of qualitative and quantitative methods, it will evaluate energy scenarios developed in six north-west European countries (the Netherlands, Germany, France, Denmark, the UK, Belgium) as the examples. Third, these scenarios will be evaluated by contrasting them with societal trends, which may support the transition towards a low carbon economy (e.g. "shared society") or may counteract it (e.g. a trend towards single households). Finally, the conclusions and recommendations will be made concerning the possible ways of the scenario design improvement.

Theoretical background

Different practical studies in relation to low-carbon energy scenarios have been conducted at the national and regional level, and some attempts were made in academic research to compare these approaches (f.e. Van Sluisveld et al., 2017; Sartor et al., 2017; Spencer et al., 2017; Knopf et al., 2013; Notenboom et al., 2012). Nevertheless, in the scientific literature there have been no works devoted to the systemic analysis of the differences in policy settings of the low-carbon energy scenarios in the European countries. Existing studies mainly deal with fragmented aspects and are not comparable. Therefore, the main goal of this paper is to propose such a structured approach, taking six north-west European countries (the Netherlands, Germany, France, Denmark, the UK, Belgium) as the examples.

Therefore, the ***main goal*** of this research project is to propose a structured framework with the system of characteristics (indicators) for comparison and assessment of low-carbon energy scenarios 2050 of six north-west European countries (The Netherlands, Germany, France, Denmark, the UK and Belgium), taking into account societal trends, in order to develop recommendations on moving towards more harmonised approach to achieve the EU 2050 targets.

The ***research question*** of this study is:

How can we compare and evaluate the policy settings of the low-carbon energy scenarios 2050 in European countries, which they have put in place to achieve the EU 2050 targets, taking into account societal trends?

The methodology of this study includes the stages of preparing, analysis and integration of data (radar diagrams). For this, *qualitative* (literature review, expert interviews) and *quantitative methods* (statistical analysis, trend monitoring) are used. The following

information sources form the basis for research: scientific publications, international and national (governmental) reports and strategic programs, international statistics (e.g. of European Commission etc.), materials of energy conferences and workshops, consultations with the experts from energy area.

Based on the literature review and interviews with national experts, the ***methodological framework*** of this research proposes ten characteristics for the assessment of policy settings in energy scenarios:

1. *Modelling framework (diversity)*
   The diversity of policy scenarios
2. *Ambitiousness of the targets 2050*
   Maximum modelled GHG emissions reduction compared to 1990
3. *Relations with other (European) countries*
   Inclusion of trans-border regional developments (TRD)
4. *Stakeholder involvement*
   The degree of stakeholder involvement (particularly, public engagement)
5. *Technology options*
   Transparency of technology selection
6. *Non-technological aspects*
   Inclusion of non-technological aspects (social acceptance, etc.)
7. *Economic component*
   Description of economic component (cost-benefit analysis, etc.)
8. *The usage of scenarios in policy design*
   The degree of scenarios' usage in policy development
9. *Intermediate indicators of targets' (2050) achievement*
   Current consistency of scenarios with the EU 2050 targets
10. *Revision of scenarios*
    Frequency of scenario revising

Results

The analysis has shown that all selected countries have the potential for modifying their energy scenarios in order to achieve the joint European targets 2050. Therefore, since these countries are socially and economically interrelated, a more harmonised approach to scenario development is needed to be designed and introduced on the European level, which should take into account societal trends and include the common requirements for scenario development. Ten characteristics proposed in this study may serve as an initial input for such harmonisation. The approach developed in this paper may be of a specific interest for policy makers discussing the priorities in the specific energy sectors and monitoring the success in sustainable development on international, regional and national level. In addition, the results may be used by business representatives intending to understand the risks, uncertainties and possible disruptions in the energy markets to develop effective corporate strategies. The proposed framework may also invite academic researchers involved in energy-related activities to contribute to a general methodology of scenario design assessment.

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Anticipation 2019 – Paper proposal

Exploring 'University Rhythms' as Anticipatory Practices.

Dr. Fadia Dakka

From exceptional moments to ordinary events; from nostalgia for the past to sudden leaps to near or distant futures: we are immersed in perceptual relations. Our everyday life is shaped by and partake of an incessant series of rhythmical fluctuations as we experience the mutuality of entanglement and negotiate time-space in the various ways in which we consume, produce and reproduce feelings, desires and objects.

For Lefebvre (2004), past and future converge in the 'dialectical presentness' of our every day, *via* recurring and omnipresent rhythmic constellations. The latter, characterised as they are by repetition and difference, discovery and creation, continuities and disruptions, mechanical and organic processes, linear and cyclical occurrences, can offer significant philosophical and methodological insight into a variety of disciplines within the realm of social sciences and humanities. In fact, Rhythmanalysis has been recently foregrounded as an alternative method for cultural-historical (and archival) research (Chen, 2017; Merrifield, 2006).

Yet, this paper maintains that a lot more can be achieved, methodologically and theoretically, by revealing and exploring the anticipatory potential inherent to rhythm. It argues that teaching and learning in higher education are not only quintessentially rhythmic activities, but fundamentally and increasingly future-facing and future-oriented. In this respect, the contemporary university could be used as a laboratory to explore and test ideas related to rhythm and anticipation, and to promote alternative temporalities *in* and *for* education (Wozniak, 2017; Neary & Amsler, 2014; Bennett & Burke, 2017): here, education becomes a form of suspension from the dominant time-economies and an incubator for possible, rather than probable futures (Poli, 2014).

Now more than ever the existential crisis of the university must be turned into an opportunity for imagination: political, cultural and educational shifts are crucial to bring out the anticipatory potential intrinsic to higher education as a rhythmic, future-oriented system. Facer (2011), for instance, urges a 'recalibration' of educational curricula to draw-out anticipatory elements and update disciplinary knowledge through stewardship, modelling, reflexivity, experimentation, and through the fostering of emotional intelligence.

Working towards a 'future perfect' for the university allows – in other words – a conceptual and practical synergy between rhythm and anticipation.

The paper will be then structured as follows: the first part will demonstrate a theoretical compatibility between rhythm and anticipation by revealing significant parallels between Lefebvre's 'theory and temporality of moments' and psychological/anthropological/sociological understandings of anticipation.

The Lefebvrian moment happens in a certain space, at a certain time, 'disrupting linear duration, detonating it, dragging time off in a different, contingent direction, toward an unknown staging post' (Merrifield 2006). Against Bergsonian notions of 'duree', Lefebvre's understanding of time is non-linear: 'the duration, far from defining itself solely as linear and

punctuated by discontinuities, re-orientates itself like a curl of smoke or a spiral, a current in a whirpool or a backwash' (Lefebvre, 1959). This view is consistent with the idea that all the modes of time are mutually interconnected, so that changes occurring in any one of them (for instance, future) reverberate on the others.

The second part will review Appadurai's characterisation of the future as a 'cultural horizon' replacing the past as 'cultural reservoir' (Piot, 2010). It will then proceed to expose how and why the contemporary university subscribes to aspiration, imagination and anticipation yet fails to acknowledge the fact that futures are socially differentiated and aspirations unequally distributed.

Finally, the paper will make a strong case for the use of Rhythmanalysis as a philosophical orientation, heuristic method and radical pedagogy to transform the university into an agent and enabler of anticipation. Interrogating the rhythms of teaching and learning by examining their arrhythmic and eurythmic dispositions, will be a first step towards expanding the field of imagination and promoting true aspiration. Two essential conditions for the development of a future inclusive, creative and critical citizenship. The paper will present the preliminary findings of an experimental research project, designed to capture the rhythms of teaching and learning of three campuses belonging to a post-92 higher education institution. It will 'measure' its results against the conceptual and theoretical tenets of Anticipation and Rhythmanalysis: will the rhythms of emancipatory education be able to harness the potential of uncertainty to develop open-ended futures and embrace 'future present', as opposed to ideas of future as a mere calculative projection of the past?

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Hindsight and foresight combined:
History as a component in scenario building

Edward Cornish, the founder of the World Future Society, once claimed that it is absolutely essential to revisit historical visions of the future in order to comprehend the concept and be able to carry out qualified forecasting. This is exactly what I will be doing in this paper, which explores the potential of historical knowledge as a platform for scenario building in urbanism. I do this in two parts. First, a dissection of previous scholarly work on the subject matter, such as *A History of the Future* (2008) by Donna Goodman and *Archaeologies of the Future* (2005) by Fredric Jameson, aiming to pin-point a theoretical basis for the forecasting ambitions of the past. Secondly, a critical reflection on some of my own endeavours in the field, which involves me in the capacity of conducting preservation assessments and historical analysis within the context of Norwegian urban planning practice. More specifically, I target the value of historical perspectives as an integrated part of scenario building as well as the methodological execution – what you can do and what glimpses of the future you can see from an historical point of view, to put it in simpler terms. While I will refer to several projects, I focus my attention on a recently concluded collaboration between myself, Rodeo Architects and Dietz Foresight: "Perspective 2050 – Scenarios for Jæren". This took form as a scenario building process in close alignment with the new regional plan for Jæren, an economically wealthy region in the southwest part of Norway. Although roles and responsibilities within the project were split between the parties involved, leading to three separate documents, the whole working period happened in close collaboration, yielding a scenario synthesis report where hindsight and foresight merge. This version of the project is particularly aimed at reaching audiences beyond the world of politicians and planning professionals. It is shorter and more concise, yet also more diverse and cross-fertilizing when it comes to key perspectives. From the outset, the idea is that we can learn something from history in terms of projecting the future – a pedagogic reminder of past predictions, failures and successes – and that history carries with it the potential to anchor the future. Memories – accurate or imaginary - of the past often create a "nostalgia for the future", according to cultural heritage scholars Laurajane Smith and Gary Campbell, which can enable people to get more involved and engaged in their own local community. There is a basic need in human beings to dream back in order to think forwards, or so it seems – at least that is one of the things I will be exploring more closely in this paper, shifting back and forth between theories and practices of anticipation.

HISTORY, TIME AND FUTURES STUDIES
TENSIONS FROM GEOSTRATEGY ANTICIPATORY PRACTICES

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Abstract:

Since seminal futures publications, geostrategy anticipatory practices have infused the futures field, as well as questioned the place of time and history in futures thinking. Exploring the temporal tensions of futures thinking, this paper discusses lessons from two geostrategy futures cases. Bridging history and futures studies, section 1 stresses the wicked nature of future history and discusses research directions to introduce time in futures thinking. Section 2 exhibits the context, the design and the methodological backgrounds of the two cases. Section 3 discusses the temporal tensions between factors, actors and events on the one hand and within action processes on the other hand and suggests developing a streaming approach of anticipation.

1. Bridging history and futures studies: tensions and directions

1.1. The wicked nature of future history

While history is viewed to supplement futures methods such as scenarios (Bradfield, Derbyshire and Wright, 2016), it first served as a cornerstone to shape anticipation practices either to stress the difference between futures thinking and history or to point out that futures thinking deals with a wicked future history. In seminal futures thinking, the sense of history differs from the purpose of futures practices designed as a support to decision-making that cannot be scientific, science being timeless (Berger 1957). Although "related to history", Flechtheim's futurology cannot elicit a "chronological sequence of detailed facts" but "avail itself of interpretation, generalization, and speculation to a considerably higher degree" (Flechtheim, 1966). However, Kahn's scenarios are about "future history" and "attempt to describe in more and less detail some hypothetical sequence of events" (Kahn, 1962). But the design of hypothetical "future history" is based on a gap with history, as the very nature of historical facts (*facta*) are not to be confused with future events (*futura*) that are nothing but subjective (Jouvenel, 1967).

1.2. Timing futures thinking

If futures studies are "futureless" (Sardar, 2010), futures practices are not timeless, and history remains a reference to futures studies. Within macro-history, "timing the future" is one of the pillars of futures thinking (Inayatullah, 2008). Developmental scenarios (van Notten, Rotmans, van Asselt and Rothman, 2003) and backcasting studies (Vergragt and Quist, 2011) introduce time-scales in scenario design while the concept of end-state (Burt, 2007) offers a time frame for scenarios. Stakeholder behavior (Cairns, Goodwin and Wright, 2016) and empowerment (Bourgeois, Penunia, Bisht, and Boruk, 2017), as well as leadership shifts (Marchais-Roubelat and Roubelat, 2016) question the timing of action in futures thinking, while governance issues point out the role of actors and stakeholders in change over time (Wangel, 2012). Whereas Kahn's scenarios explore decision processes like escalation (Kahn 1965) and examine "the branching points dependent of critical choices" (Kahn, 1962), "branching scenarios" (Cairns, Wright, Fairbrother and Philips, 2017) break lock-ins to incorporate new decision issues. Scenarios add the "what next" question to the "what if"

one (Saritas and Nugroho, 2012), as well as the one of emergence (Fuller, 2018). Addressing ever-changing changes and the related temporal gaps (Berger, 1957), futures thinking also stresses the tension between long-range slow transformations over time (Botta, 2016) and ephemeral futures (Roubelat, Brassett, MacAllum, Hoffmann and Kera, 2015).

2. Research context and methodological background

Within the context of futures studies applied to defense issues (Saritas and Burmaoglu, 2016, Nemeth, Dew and Augier, 2018), we discuss two geostrategy anticipatory practices from two cases commissioned by the French ministry of Defense.
The first case is based on the seminal archive report on security global governance frameworks to 2030 and on the book *2030, the end of globalization?* issued from the report (Coutau-Bégarie, 2008). The case is supplemented by the results of a research meeting organized with Paris war college research institute (Irsem) (Roubelat and de Lespinois, 2017).
The second case is based on full outcomes of an action research on strategic action scenarios to 2030 designed by the authors, which supplement the action-based scenarios methodology (Marchais-Roubelat and Roubelat, 2008, 2016).

3. From framing to streaming. Timing the tensions of geostrategy futures

3.1. Timing the tensions between factors, actors and events

2030, the end of globalization? offers an opportunity to discuss the tensions between factors, actors and events, within the two perspectives of Coutau-Bégarie works on "new history" and on strategy (Coutau-Bégarie, 1989, 2011). In Coutau-Bégarie's perspective, futures thinking may uncover only a part of the causal clues at work in history, as the interweaving of factors, actors and events reveals moving horizons as well as different temporalities. While the long-range evolution of factors may be discussed, actors and events can hardly be anticipated and future governance results from moving combinations of scenario archetypes that question the resilience of governance over time and the horizons of future global transformations. The role of individuals, which may be of importance in history, as well as the one of communities and of emerging actors, also appear as a tricky issue for the timing of futures thinking.

3.2. Timing the tensions from action processes

Strategic action scenarios offer a methodological framework to play factors, stakeholders and events in action processes from action rules. In such scenarios, stakeholders' acts and organizing processes move and change over time to challenge the action rules, or not. Through an iterative process, paradigm shifts, stalemates, oscillations and phase lags are explored to design new branching rules for scenarios moving over time. Such scenarios stress three tensions for stakeholders: the sustainability of their acts with the question of their reversibility over time, the transgressions from their acts with the issue of the conflicts between stakeholders, their capacity or incapacity to act with the problem of the transformations of stakeholders over time. These three issues suggest designing streaming futures, to be challenged over time from emerging moves from stakeholders.

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Enacting Anticipatory Heuristics: Socio-epistemic Robustness as Relational Quality

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Abstract

Anticipation is a valuable heuristic practice for the governance of socio-technical systems. The heuristic potential of this activity does not lie, though, in *its products* (i.e., the representations about the future), but rather in *the processes* by which future scenarios are co-created and negotiated (Selin 2011). In that vein, we characterize anticipation as a *socio-epistemic practice* (Ferrari & Lösch 2017), holding the following characteristics:

- *It assumes an 'open future' ontology*: "the future is conceptualized as a negotiable political resource and discourse area that can be written on" (Bauer 2018: 38).
- *It is epistemic and methodologically pluralistic*: Anticipation embraces "a distributed collection of social and epistemological capacities, including collective self-criticism, imagination, etc." (Barben *et al*. 2008: 992).
- *It is exploratory or conjectural*: Anticipation does not aim to accurately describe what will happen (i.e., to predict), but to explore possibilities for action in the present (Sardar 2010: 178).
- *It is a pragmatic, reflexive* and *interventive practice*: The objective of collectively imagining and opening up the "space of possibilities" is to enhance the capacity to detect "unknown opportunities and threats, and how to prepare for discontinuities" (Son 2015: 130). This could be achieved by (i) (re)thinking our knowledge, assumptions, and values about what might happen (e.g., identifying futures-in-the-making and present-futures), and (ii) increasing awareness about the contingent character of the future and the heterogeneity of the currently available possible lines of action.
- *It is contingent and situated:* Anticipatory knowledge emerges from the *in situ* interactions of concrete societal actors that are embedded in particular contexts and socio-epistemic domains (Hulme & Dessai 2008: 56).

Although embracing these characteristics, this paper claims that the "anticipativeness" (i.e., the degree of its heuristic force) of anticipatory practices depend on the quality of the relations underlying the production of alternative futures. In other words, assuming that the anticipatory heuristic is based on contingent and situated socio-epistemic practices, its socio-epistemic quality will be the result of the specific relationships and conditions by which it is co-constituted. Certain kind of interactions, such as those tending to inclusiveness (Jasanoff 2003), responsiveness (Nielsen 2016) or epistemic justice (Fricker 2003), could catalyze the constitution of alternative plausible scenarios by virtue of their potential to produce new socio-epistemic arrangements. Understood in this way, anticipation aligns with—and may

be a useful tool for supporting—the most radically constructive version of Responsible Research and Innovation (EC 2013: 4).

Discussion

Anticipation is commonly understood as an activity highly related to "the future." Anticipation implies considering plausible future scenarios in order to promote a more robust decision-making in the present (Konrad *et al*. 2018). Thus, future scenarios could be understood as the performative and heuristic core of anticipations.

However, the focus on scenarios *as products* has promoted the emergence of some problems and misunderstandings. For example, it is not clear whether the mere presentation of future narratives can develop anticipatory capacities. Furthermore, the fixation on the scenario has led too much emphasis on assessing its robustness in terms of its relationship to the future (e.g., Nordmann 2014).

Understanding anticipation as a situated socio-epistemic practice from a relational point of view (i) overcomes some of the theoretical difficulties posed by substantivist approaches, and (ii) places us in a different—and perhaps richer—methodological and operational dimension. First (i), the relational approach explains why the anticipatory heuristic force depends on the quality of the co-production processes and not on their products (e.g., the mere presentation of science-fiction scenarios does not function as a heuristic source, but performing collective science-fiction prototyping *under certain conditions* and *promoting certain kind of relations* may do so). Second (ii), the relational approach shifts the theoretical and methodological focus from assessing the robustness of the scenarios to assessing the robustness of the socio-epistemic dynamics by which scenarios and their plausibility are fixed. Thus, the relevant issue here is not the representational robustness of future scenarios, but rather the kind of socio-epistemic interactions and arrangements through which scenarios are constituted and their plausibility negotiated.

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Emerging Collectives and the Everyday Exercise of Future-Making

Abstract
Sociotechnical imaginaries of the future bring with them how the world ought to be ordered. Primarily dominated by elite white male perspectives from the Global North, they often reinforce dominant power relations without challenging their socio-political effects. By building on feminist theory, this paper aims to address how shaping futures might be done differently, with different people, and in different forms. It introduces *emerging collectives*, the ecologies of participation that self-assemble for future-making as an everyday practice. Empirical exploration consists of two parts. It starts with a review of three design events in which participants were invited to create speculate imaginaries about the future of emerging technologies. Based on the lessons learned in the design events and also by incorporating feminist conceptualization of temporality, the second part introduces and tests a new approach in opening up the process of shaping futures. With a particular focus on economic futures, emerging collectives are put in the position of the knower to reflect on their everyday practices to generate inherently imaginative, social, and dialogical alternatives. By aspiring what might be, they challenge the imagination of people who are incapable of imagining possibilities beyond the confines of dominant economy. In other words, emerging collectives are instances of the Pluriverse, a world in which many worlds fit, to aspire action and guide change.

Keywords: *speculative design, feminist futures, community-based participation*

In speculative futures, the key capacity of design is to give material quality to *images about the future*, creating tangible possibilities to be discussed and reflected upon. For this purpose, designers create immersive experiences, embodied interactions, and affective engagements to engage the audience in a journey to an alternative to the present. The aim of these endeavors is to prepare the society to anticipate certain emerging socio-technical transformations. As feminist technoscience teaches us, the ways in which we represent things can have worldmaking effects. The nature of worldmaking in design is fundamentally political since different social groups have unequal possibilities, different levels of access to resources, and unequal proximities to sources of power to realize their aspirations and visions. Yet, little effort has been paid in questioning underlying assumptions in futures scenarios, ignoring the responsibility that comes with engaging in future-making. Speculative futures often imply a superior designer position with elitist views on a *better world* that society should aspire towards. By preferring particular realities over others, designers are enacting certain values. It raises political concerns such as what does preferable futures mean, for whom, and who decides. As Adam and Groves describe, the task for contemporary experts on the future is "not about knowing that future, but rather aiding individual and social endeavors to choose wisely from a spectrum of options and preferences with their associated potential effects" (Adam & Groves,

2007, p. 34). This includes suggesting ideas for future artifacts and practices, and exploring the consequences of the suggested changes. At the same time, they give people a voice to express their hopes and fears while the future is in the making. Here, "the future is not a blank space for the inscription of technocratic enlightenment, [...] but a space for democratic design" (Appadurai, 2013, p. 299). Thus, the question is how to use collaborative methods in ways in which participants are meaningfully involved in the creation of those options.

This paper offers an overview of three design events in which participants co-create speculative futures for emerging technologies. The goal was to encourage thinking more imaginatively about the future, envisioning, inventing, and pursuing more diverse possibilities. These events include: unpacking driverless technology using a classic scenario building methodology; exploring microgrids as the foundation to build smart communities using design fiction; and envisioning the future of local making and manufacturing using utopia as the method of inquiry. These cases foreground the capacity of design to engage people in future-making. It also provides insights for understanding the process through which participants, in a collaborative approach, envision alternative possibilities for the future.

Based on the lessons learned throughout design events and by incorporating feminist conceptualization of temporality, this paper opens up the process of future-making to engage *other* modes of knowing. Thus, I introduce emerging economic collectives: *local ecologies* exercising a new kind of economic reality. They challenge established mode of doing economy by *living* an alternative possibility, in the present space and time. I argue that this is a future-making practice, in particular, because of the impact it has on challenging the conceptual inevitability of dominant ways of being. Here, the future is not a distant destination with fixed ideals, instead, it is already being performed in an ongoing process of civic activism, incorporating diverse voices, and exploring the possibilities. In other words, these collectives open up the process of future-making to all, incorporating *other ways of knowing* in the process. Fundamental to their approach is staging it as collectively shaped futures. They have choreographed supportive practices for experimenting with futurity; it includes reviewing the history, encouraging intuition, embodied interaction, and more. Their motivation is to challenge taken for granted framings that are mischaracterizing their communities; they do so by

constructing *other* economies that reveal the plurality of the economy in which their voices are accurately and effectively captured.

In Design for Pluriverse, Escobar refers to *designing for life* as an open exploration of the future possibilities; "design in this sense does not transform the world, it is rather part of the world transforming itself" (Escobar, 2018, p. 215). Similarly, the emerging collectives introduced in this chapter are not promising a revolutionary transformation, rather their existence is a manifestation of an alternative future that is unfolding. This paper aims to address who gets to engage in future-making; what it takes to create settings that are explicitly plural; and what are the ways of mobilizing ecologies of participation to self-assemble for future-making.

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Effectual Anticipation: Analytical, Dialectical and Crealectical Moments

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Anticipation plays a causal role in the actualization of our models and futures. I summarize nascent research initiated at Örebro University in 2018 (CREA, Cross-disciplinary Research in Effectual Anticipation). I propose an understanding of performative anticipation that distinguishes between "analytical", "dialectical" and "crealectical" moments, particularly in the context of "anthrobotic" relationships, i.e. sociotechnical assemblages of human life and algorithms (de Miranda et al., 2016).

The project of analytical intelligence — reactivated today in so-called *big data* and *predictive analytics* — was epitomized by Laplace (1902 [1812]): "We may regard the present state of the universe as the effect of its past and the cause of its future. An intellect which at a certain moment would know all forces that set nature in motion, and all positions of all items of which nature is composed, if this intellect were also vast enough to submit these data to analysis, it would embrace in a single formula the movements of the greatest bodies of the universe and those of the tiniest atom; for such an intellect nothing would be uncertain and the future just like the past would be present before its eyes." Such a view, if made dominant, would dangerously ignore the pluridimensionality and pluridirectionality of living processes.

The universe cannot be said to be merely reading its own program as it unfolds mechanically, such as in a universal simulation hypothesis (Bostrom 2003). As intuited by Rosen (1985), anticipatory behavior becomes an effect among others in the agential factors that influence the future. The performative — hereafter "effectual" — stance claims that anticipation by members, designers or users of a given system cannot be ignored in the analysis and conception of a situation and its outcomes. Effectual designates the action of the anticipator on the protocol she conceives or follows in the sense of Aristotle's efficient causation.

What is the future when anticipated? Massumi (2007) calls it an "indeterminate potentiality". In line with the spirit of process philosophies (Bergson, 1911; Whitehead, 1929), we accept that the Real is a process of actualizations, which means that everything real is historical, temporal and that a process itself is more real and encompassing than its actualizations. Moreover, actualizations are not linear nor unidirectional or unidimensional.

A projective idea of futurity, when extended to infinity, suggests that all potentialities could be actualized *ad infinitum*. In other words, given an infinite time, anything could happen. This idea is sometimes called the Infinite Monkey Theorem (Goodman & Elgin, 1986). Infinity is not only a relative, incremental or additional extension of time; it is also, as absolute infinity, an asymptotic negation of any temporal linearity (cf. Zeno's paradox or contemporary models of emergence). As such, infinity pertains as much to the future as to the present or the past. Because of the ambivalence of infinity, inscribed in the Real, as suggested by Lacan (de Miranda, 2009), absolute possibility is a transcendental horizon with immanent consequences, the "eternal object" *par excellence* which Whitehead called Creativity (1929). By "Creal" (de Miranda, 2017), we mean that the Real is not only a process of infinite possibility, but that this process is pluridimensional and pluridirectional.

In humans, as noted by primatologist Robert Sapolsky (2011), the psychological difference between before and after is so important that entire groups, for example religious ones, are capable of sacrificing their life and secular well-being in anticipation of a worthwhile future. This is an aberration from an analytic point of view, but it is an extreme illustration of how the absolute infinite is effectual in human systems. The paradoxical capacity to pursue a knowledge about something we ignore but we feel or desire suggest the agency of what Einstein after van't Hoff (1878) called creative imagination (Holton, 1978). Unfortunately, imagination is often seen as a non-causal tool in noosystems (Barrett, 2001), id est ecosystems or technosystems in which emotion, cognition and metacognition have an internal differential influence, constantly interacting with formal material protocols of repetition. The necessity of considering effectual anticipation in the conception and study of noosystems goes against the way theorization tends to exclude the imaginative subject — the observer, the practitioner, the designer, the interpreter — in the description of the system. The intentional and cognitive focus, the affective ideation of what is to come, which might or might not be a form of optimization, should not be left out of the explanation if we are to develop a healthy technology and science.

When accounts of the future are seen as performative, they are usually understood as enacting a particular future while also marginalizing alternative futures in order to realize the projected future (Michael, 2017). Can we distinguish different modes that this enacting might take? If we agree that the ultimate teleonomy of an anthrobotic system is to be a healthy one, then any intelligence of it is, I propose, a process that can be divided into at least three moments: anagnosis (reading), diagnosis (interpretation), and prognosis (anticipation). This corresponds to three aspects of understanding: a) an analytical stage, based on a reading of the given as data or syntax; b) a dialectical stage based on discursive interpretation or diagnosis of semantic

oppositions (Hegel, 1807; Clément, 1994); c) a crealectical stage, which integrates but supersedes the analytical and dialectical modes into a practice of prognosis, a meta-anticipation of what is likely to be actualized.

A crealectical intelligence integrates the pluridimensionality and pluridirectionality of processes. It corresponds perhaps to what Spinoza called the third kind of knowledge. It has not yet been clearly realized by humans. Within this framework, artificial intelligence, rather than imposing reductive analytics or enforcing agonistic dialectics, could help us achieve a better understanding of a holistic and healthy crealectics.

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Building to think – using LEGO® SERIOUS PLAY® for Causal Layered Analysis

Complexity requires us to examine futures-related issues from many perspectives and at multiple levels. This workshop will demonstrate how LEGO® SERIOUS PLAY® can be used with Causal Layered Analysis to communicate visually and more deeply using a storytelling approach.

Causal Layered Analysis (CLA) is a theory of knowledge and a methodology for creating more-effective, futures-focused policies and strategies created by Sohail Inayatullah. Inayatullah identifies four specific causal layers: 1) the litany, which provides 'everyday' accounts of problems without deep critique; 2) the social layer in which people seek explanations for the issue or problem within the systems of social organisation that created them; 3) the layer of discourse, which provides an opportunity to challenge the world view that supports and legitimises these systems of social organisation; and 4) the layer of metaphor and myth, which focuses upon deep stories, where people find meaning in life.

CLA is situated in critical futures research, usually as a poststructural critical approach that is not assumed to foster prediction or comparison. CLA is less concerned with prediction of one particular future and is more directed to opening up the present and past to create alternative futures. CLA is not limited to the horizontal spatiality of futures - in contrast to techniques such as emerging issues analysis, scenarios and backcasting - and offers a way to explore the vertical dimension of futures studies, and the possibilities of layers of analysis.

LEGO® SERIOUS PLAY® is a facilitated experiential process designed to enhance engagement, business performance and strategic innovation. The method helps participants communicate complex ideas more easily using Lego models, created both individually and in teams. The structured process draws on constructionism and constructivism to elicit deep thinking, metaphors and narratives, authentic collaboration, and problem solving of complex challenges. The method draws on play and storytelling to build deep learning and collaboration, which can more easily be provoked when people build ideas with their hands rather than just talk discussion and/or traditional meeting formats.

The session integrates the LEGO® SERIOUS PLAY® (LSP) method to complement thinking and storytelling. The method can help participants build a solid understanding of a problem, issue or questions in order to reach emergent responses. In addition, it fosters emergent problem-solving by combining logical thinking and creative imagination. In a LSP process, the materials and methodology enable participants to identify and create the relationships and connections between people and their world, observe internal and external dynamics, explore various hypothetical scenarios, and gain awareness of the possibilities.

As it starting point, CLA holds that there are different levels of reality, expressed as visual and verbal narratives. Individuals and organisations see the world from different vantage points, both horizontal and vertical. LSP enables personal and collective expression through visualisation via Lego models that emerge through thinking to build, rather than building to think. The models are physical externalisations of our internal reality, thoughts and ideas, providing an alternative way for sharing with others. The Lego models themselves are not necessarily the most compelling part of the process; like CLA, it is storytelling and the uncovering (or recovering) of metaphors and meaning we apply to them that is significant. The stories we create to explain the model matter most and the stories applied to simple models create powerful metaphors to share in a group.

This techniques workshop will enable participants to experience CLA using Lego pieces, allowing for freeform modelling of ideas and responses to the questions and provocations in the CLA process of inquiry. The process includes several rounds of building, storytelling and reflection that serves as a catalyst to capture thoughts and feelings. Participants are engaged in a process whereby they construct models using a specific set of bricks to inspire the use of metaphoric story-making representative of realisations, struggles, complex systems and potential resolutions. The LSP core method includes a four-step process, a set of several application techniques that increase in complexity dependent on context and goals, and a number of process principles, all of which have been developed to integrate the CLA methodology.

By combining visual, auditory and kinesthetic skills, participants are engaged to learn and listen, and every participant has a voice regardless of language, culture or position – the Lego becomes a shared vocabulary and narrative tool.

Please note that this workshop requires only one facilitator due to the formal structure of the LEGO® SERIOUS PLAY® method. Typically one facilitator is required for sessions comprising up to 20 people. An additional facilitator may be sourced to meet the requirements of the conference committee.

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Presenter/Facilitator

Bridgette Engeler is a pracademic working across strategic design, innovation and foresight. A lecturer at Swinburne University in Melbourne, she regularly collaborates with industry and organisations on futures-oriented projects and programs. Her work spans strategic and transformative design, speculative design, experiential and critical futures, and transition design. Bridgette holds a BA, MA and Master of Management in Strategic Foresight. A PhD Candidate at Swinburne, her research interest is the nexus created between design and anticipation, and emergent opportunities intersecting design, ecosystems, people and technology. This includes connections and interventions between design and foresight, how futures thinking and design intersect and influence (especially NGOs and the third sector), design as politics, and the opportunities emerging between civil society, foresight and strategic design.

Virtual Reality Architecture Exhibitions: Means for Experimenting with Future Objects in Anticipation Studies

Palmyre Pierroux, Department of Education, University of Oslo (Organizer)
Rolf Steier, Department of Education, University of Oslo
Birgitte Sauge, National Museum of Art, Architecture and Design
Anne Qvale, National Museum of Art, Architecture and Design
Jøran Rudi, Notam
Thomas Liu, Atelier Oslo
Ole Petter Larsen, Atelier Oslo

Background

Virtual reality may be viewed as a socio-material infrastructure that facilitates 'future objects,' providing experimental settings for political work by creating "a future that is yet unthinkable or that exists only as potential" (Esguerra, 2019, p. 6). Architects and urban planners, for example, use virtual and augmented reality to simulate *in situ* future impacts of climate change in an urban landscape (Liestøl, Morrison, & Stenarson, 2014), to model environmentally friendly neighborhoods (Esguerra, 2019), and to make new connections between body, nature and architecture (Pierroux, Steier, & Sauge, 2019). Also, *virtual immersive environments* provide opportunities to 'feel the future' by drawing on architectural expertise and representations that persuade through affect, aesthetics and sensory engagement.

In this symposium, we present a co-design research project involving multiple stakeholders with expertise and knowledge in architecture, soundscapes and acoustics, virtual reality, exhibition design, and the learning sciences, and we consider how such design collaborations may be lifted into Anticipation Studies (Miller, Poli, & Rossel, 2018). The co-design process culminated in an architecture museum installation titled *The Forest in the House.* The installation combined virtual and physical elements with a soundscape to inspire museum visitors to 'feel' and 'hear' how spaces formed in nature may be similarly experienced in architecture. Soundscapes first emerged as a concept for understanding man-made and natural landscapes in a holistic manner (Schafer, 1977), and is broadly used in studies of noise pollution (Licitra, Cobianchi, & Brusci, 2010).

Methods

The installation was experienced by visitors in pairs or alone (Figure 1a, b), and museum facilitators were on hand to assist with donning equipment (headset, earphones and sensors on hands, waist, and feet). Visitor data was collected over a 3-week period, using semi-structured interviews, questionnaires, observations, and video recordings. 287 responses to questionnaires were collected, and 82 visitors also consented to exit interviews regarding the soundscape experience. In addition, 19 pairs of visitors of different ages, gender, and architectural expertise were recruited to visit the exhibition while their interactions were video recorded and to participate in pre-post interviews. Visitors' movements and embodied sensory experiences of fundamental architectural qualities were studied, with a particular focus on 'co-presence.' The symposium presentation will be based on findings from analyses of the data corpus.

Figures 1a, b. Equipment and installation for 'Forest in the House' exhibition experiment

Thematic Lens

In keeping with the interdisciplinary organization of the project, findings from three distinct but nested thematic lens will be presented and discussed.

Digital media in architecture exhibitions

Birgitte Sauge, National Museum

Thomas Liu, Atelier Oslo

VR technology is used in architectural practice during design processes to communicate within the design team and with clients. In this project, the use of VR technology in *museum practice* was foregrounded, inviting visitors to the unique physical experience of a born digital building and its site (Lynn, 2013). This lens focuses on the aesthetic, persuasive and practical aspects of the installation design, and on the collaboration between architects and museum curators to provide new understandings and time-space experiences of architecture/nature in an exhibition setting.

Multisensory designs for virtual architectural space

Ole Petter Larsen, Atelier Oslo

Jøran Rudi, Notam

This lens focuses on designing architecture experiences in virtual environments with sound, sensors, representations and tangible objects. To enhance a sense of immersion, two distinct soundscapes were created for the architectural space and its natural biotope, respectively. Structured investigations of modeling techniques and methods for delivering sound and images yielded useful knowledge about both technological execution and aesthetics in the design of complexity in sound and representational material. Drawing on psychoacoustics, the study also allowed us to learn more about what people pay attention to and do not pay attention to in a virtual soundscape environment.

Embodiment and meaning making

Rolf Steier, University of Oslo

Anne Qvale, National Museum

This lens brings ideas of anticipatory learning into focus, and explores visitors embodied experiences in blended virtual/physical architectural environments. By analyzing video of visitors' movements, conversations, and social interactions in the installation, we identified processes through which visitors feel, interpret, and communicate complex architectural experiences that transcend the virtual and the real. We also discuss how pairs of visitors constructed co-presence while having different experiences inside and outside of virtual reality.

Lifting design into Anticipation Studies

Investigating and analyzing visitors' interactions and experiences yielded information on virtual environments that are relevant for topics in Anticipation Studies. The session will conclude with a discussion facilitated by the organizer, focusing on the role of future objects and on working with multiple stakeholders in research-practice partnerships.

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FOSSIL / The Museum of Carbon Ruins (an ongoing experiment in the anticipation of decarbonisation)

Curator:

- Stripple, Johannes [1] [johannes.stripple@svet.lu.se]

Speakers/conveners/performers:

- MacDonald, Graeme [2]
- Nikoleris, Alexandra [1]
- Versteeg, Wytske [3]
- Raven, Paul Graham [1, 4]

[1] – Lunds Universitet, Sweden
[2] – Warwick University, UK
[3] – Urban Futures Studio, University of Utrecht
[4] – Institute for Atemporal Studies

#

“FOSSIL is delighted to announce a combined exhibition and public accessions event in Oslo, Norway – the first stop outside Sweden on the Museum’s inaugural touring year.

Formally opened in April 2053 by Greta Thunberg, pioneering activist and former Swedish Minister for Decarbonisation, FOSSIL is a museum dedicated to the collection and display of relics and ruins from the closing years of the Age of Carbon. Our curatorial team have been hard at work acquiring, restoring and preserving these sometimes troubling reminders of what may turn out to have been humanity’s greatest and most desperate struggle – a social, technological and political upheaval whose deeper meanings we can only now begin to make sense of.

For us, the didactic museum is another relic of a bygone age, and as such the curatorial team of FOSSIL are pleased to invite the people of Norway (and visitors from further afield) to join us in this great interpretive project – and to bring us artefacts of the Carbon Age for potential accession to the core collection. Our curators and researchers will assist you in the recording of the objects and stories offered, and convene with you the latest instalment in a conversation which, with planetary warming finally capped at 1.5°C, we hope will continue for many more generations to come.”

#

This session, much like the project which it simultaneously describes and enacts, is something of an experimental hybrid, involving elements of experiential futures, roleplaying, narrative workshopping, and traditional research dissemination. We see it as touching upon (at least) three of the major participation themes for Anticipation2019: it is an experiment and intervention in the field of performative anticipations; it is concerned with the potentials (and the limits, both practical and ethical) of affective techniques of anticipation and futures production; and it is a demonstration, experiment and autocritique of cutting edge anticipatory methods drawn from the arts, the humanities, and the social and physical sciences.

The Carbon Ruins initiative is part of the Climaginaries project, an initiative funded by the Swedish research council FORMAS [https://www.climaginaries.org/]. As its name implies,

Climaginaries draws upon the growing literature on sociotechnical imaginaries, in particular the work of Jasanoff & Kim (2015) and Levy & Spicer (2013), but also upon the nascent tradition of social futures (as exemplified by the work of the late John Urry, 2016), utopia-as-method (e.g. Levitas, 2013), critical speculative design and "design fiction" (Dunne & Raby, 2013), the ever-broadening intersection of political science and science fiction studies, and many more disciplinary fragments churned up by the academy's ongoing anticipatory turn, as well as innovative narrative practices such as Nordic LARP and the immersive theatre of Punchdrunk.

Drawing first upon physical science modelling of the global climate and close analysis of a number of industrial sectors and supply chains, the project aims not only to propose technical decarbonisation interventions which might lead to achieving the 1.5°C warming limit, but to also produce plausible and affective narratives of the sociopolitical transitions that will necessarily accompany any such reconfiguration of the global infrastructural system. More plainly, we're trying to tell the story of decarbonisation as if it had already happened, and telling it from the perspective not of policy-makers and CEOs, but of ordinary citizens.

This session will be dominated by a participatory performance/workshop, during which we will for the most part remain "in character" as the curatorial team of FOSSIL, showing and talking to some of the exhibits we have collected, and inviting audience members to to submit artefacts of the Carbon Age (which is to say the present moment in which Anticipation2019 is taking place) for accession into the first museum of Carbon Ruins in the 2050s (which is to say the future in which our performance, and the decarbonisation it anticipates, is ostensibly taking place). Conference delegates are invited to bring examples of Carbon Age relics that they would like the curatorial team to consider for inclusion in the collection; a formal invitation, with some criteria for what we consider a valid artefact and format, will be circulated among delegates nearer to the time.

Toward the end of the session, we will break out of the performance paradigm in order to open up discussion "out of character" around the issues and approaches that the session has highlighted. We are also planning for a "permanent exhibition" in the shared social spaces of the conference venue, where we might leave some of the FOSSIL exhibits on display throughout the event, and thus engage with fellow delegates throughout the conference.

ENDS

Presenters (in alphabetical order):
Nicolas Balcom Raleigh, Finland Futures Research Centre, University of Turku
Sofi Kurki, Finland Futures Research Centre, University of Turku
Amos Taylor, Finland Futures Research Centre, University of Turku
Markku Wilenius, Finland Futures Research Centre, University of Turku

Techniques Workshop
Introducing the Futures Clinique approach: examining decision-making for long-range futures of the Bioeconomy

The next 50 years are anticipated to be a crucial time period for the sustainability of our planet. Bioeconomy is one concept that has been proposed as a potential solution for a number of sustainability related challenges, ranging from combating climate change to helping with the resource scarcity issue. However, the concept itself is complex, filled with uncertainties and risks. Therefore, it can be framed both as a solution and a threat. Despite this uncertainty, there is urgency to reach important decisions soon to implement the structures and infrastructure in order for the expected results to take effect in time. These features of the Bioeconomy context make it an excellent platform for examining the process of anticipation, directed at making sense of this complex phenomenon. What are the right questions to ask? What kinds of potential bifurcation points - often in the form of decisions - can be identified? Who are the key agents providing futures leadership?

We propose arranging a workshop with the purpose of introducing a novel approach called the Futures Clinique to the participants of the Anticipation conference. The Futures Clinique approach is designed specifically to address wicked problems with implications reaching far into the future, through a co-creative workshop process. The Futures Clinique approach was originally developed at the Finland Futures Research Centre, University of Turku by professor Sirkka Heinonen (2013), and it has been since utilised in a number of key research projects for holistic anticipation and scanning of long-range futures. The approach brings together different anticipation methods, both old and novel. In the proposed workshop the following five methods and concepts are combined: 1) raw seed scenarios as input for the workshop, 2) an audio-visual weak signal method called ‘futures window’ (Hiltunen 2010), 3) futures wheel technique (Glenn 2009) and 4) futures table (Seppälä 1984). 5) Futures images (e.g. Rubin 2005) based on the outcomes of all the phases, will be presented at the end of the workshop. The Futures Clinique approach is designed to be able to address multifaceted futures oriented issues that require a systematic approach, taking into account differing approaches, views, opinions, and interests. The method encourages development of ideas that diverge radically from present notions on what is possible and probable.The Futures Clinique approach is thus especially well suited for anticipation on very long time spans.

In the proposed session, the Futures Clinique approach is applied to scenarios produced in a bioeconomy themed Delphi process, providing scenarios on bioeconomy futures up to 2075, focusing especially on the societal effects of biotechnologies in the next ~ 50 years. This is done by questioning the assumptions about the possibilities and threats facing our societies in the time period examined, and the ethical tensions inherent in the different scenarios.

Before the workshop session, there will be a pre-task of familiarising oneself with the topic by

reading through the material sent by the workshop presenters. There will be two reflection questions that the participants are encouraged to answer prior to entering the workshop (ideally via email before the conference).

Using different prompts and methods that make up the Futures Clinique approach, participants are lead to think about the effects that biotechnology may have on social systems, and the kinds of decisions the adoption of different technologies and solutions will entail. The hypotheses presented in the form of raw scenarios are subjected to a facilitated debate, where workshop participants are able to present their own, potentially conflicting views and arguments.

The Futures Clinique approach allows for a presentation of competing views as different possibilities for the future. The end result will be futures images with suggestions for steps leading towards the futures, taking the form of decision points. The workshop will conclude with a discussion and reflection among the participants about their experiences participating.

By being a part of this workshop, the participants gain knowledge of this dynamic tool, are able to engage with the future oriented background materials, and can gain insight into futures decisionmaking and the processes making up futures leadership.

For the purposes of the conference, the Clinique is fitted to the 90 minute slot (ideally the minimum duration of the Clinique is half-day). It will be structured as follows:

Part I
Opening words + futures provocation (15 min.)
Futures window (5 mins.)

Part II
Instructions for the futures wheel and futures table (5 mins.)
Futures wheel+ Futures table (20 mins.)

Part III
Moderators instruct the decision points / steps phase during the process
Deciding on the images of the future and designing the steps towards it (25 mins.)
Presentation of the outcomes (20 mins.)

The session will be presented by four experts versed in the Futures Clinique approach. Prof. Wilenius (Futures Studies, University of Turku) is the leader of the research group with extensive experience in workshop processes. Ms. Kurki is a finishing stage PhD candidate in Futures Studies (University of Turku), and researchers Mr. Taylor and Mr. Balcom Raleigh both have completed the master's degree programme in Futures Studies at the University of Turku. Kurki has been developing the Futures Clinique process together with professor Sirkka Heinonen, and Balcom Raleigh has developed game based methodology that can be used in conjunction with the Futures Clinique approach. Taylor's expertise is on creative workshop methods. Kurki, Taylor and Balcom Raleigh all have participated in numerous Futures Clinique processes as presenters.

The presenters will provide basic materials used in the Clinique (posters, pens, post-its). Other technical equipment that will be needed are a projector, a screen, and loudspeakers. The

workshop will require a space where up to 20 participants are able to sit comfortably around tables in groups of 4-5 people.

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FORESIGHT AS A SOCIO-PSYCHOLOGICAL PHENOMENON: AN EMPIRICAL STUDY

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Foresight is commonly used as group activities that support ability to detect, interpret and respond to discontinuous change in mid-term and long-term future (Slaughter, 2004; Tsoukas, Shepherd, 2004; Rohrbeck, 2011). Cognitive mechanisms of foresight studies in the technology and innovation sphere command the growing interest of researchers (MacKay, McKiernan, 2004; Meissner, Wulf, 2012; Boe-Lillegravena, Monterdeb, 2015; Warnke, Schirrmeister, 2016). However, no systemic reviews of cognitive and socio-psychological factors affecting foresight studies' productivity have yet been conducted, those that take into account the various effects emerging over the course of experts' joint work in developing possible future scenarios. This paper fills this gap on the basis of Russian and international socio-psychological studies.

Group reflection is the key foresight mechanism, i.e., team members' open discussions about their common goals and ways to accomplish them by changing internal and external environments (West, 1996; Zhuravlev, Nestik, 2012). Without using the term, numerous researchers call “reflection” a basic foresight mechanism. One of group reflection's strengths is its potential to support “strategic dialogue” as a precondition of productive scenario planning (Schwartz, 1996; van der Heijden, 2005; Mack, 2013). Another major principle of the Foresight methodology is discussing competing visions of the future (Berkhout, 2006; Durand, 2009), comparing alternative interpretations of the present (Ogilvy, 2002), and forging a common basic vision of tomorrow (Blackman, Henderson, 2004).

Our previous empirical studies of Russian companies and their managers' behavior allowed us to identify three main socio-psychological mechanisms which affect community's attitudes towards the future: 1) group reflection of a common future; 2) group identification, based upon a positive vision of the common future forged by the leaders (leadership vision); and 3) collective anxiety and protective mechanisms launched by a perceived threat to the group's continued existence (Nestik, 2013; Nestik, 2014b). If group reflection increases the team's ability to adapt to changing conditions (strategic flexibility), group identification based on a positive vision of the future performs a quite different function: it increases loyalty to common goals despite changing conditions for joint activities. The vision of the future forged by the leaders motivates the community and brings it closer together, while at the same time “blinding” individual group members and strengthening peer pressure and risk proneness effects. On the contrary, group reflection promotes greater openness to information which contradicts basic group convictions. Despite their different directions, these processes are closely linked to each other: group reflection of the long-term future can only be possible if a positive group identity and trust are in place. Looking ahead, foresight participants face a paradox: the delusions of being able to control the future and excessive optimism negatively affect the quality of strategic decisions, however, they are necessary to support the team's focus on long-term goals (Rosenzweig, 2014). The foresight methodology is expected to deal with this psychological controversy through a strategic dialogue about the future based upon reliable information.

The results of an expert panel (N=42) revealed several organizational and psychological barriers than hinder corporate foresight effectiveness in Russia. Answering an open question about the problems encountered while trying to foresee the future in Russia, along with the above barriers, the experts also noted managers' insufficient focus on the future and the public administration

system being primarily interested in accomplishing short-term objectives (22 and 14% of the experts, respectively); an insufficiently transparent market for Foresight studies (19%); weak connections between the public authorities and society (16%); the low level of social trust and the lack of a cooperation culture (14%), etc. The above barriers predominantly have institutional and psychological characteristics. The more common mistakes associated with group attempts to foresee the future have turned out to be of a psychological nature because: 1) events in the distant future were perceived by participants as less important than the current or forthcoming ones; 2) participants described the future on the basis of information that has caught their attention in the media and on social networks; and 3) experts tend to underestimate the probability of events with which they have no personal experience (or similar ones). The study shows that there are several psychological effects encountered by moderators and participants in Foresight sessions: effects of overconfidence, desirability, framing, future anxiety, defense of group positive identity, risk scope neglect, availability effect, visualization effect, hindsight bias, future discounting, cognitive dissonance, planning fallacy, common knowledge and polarization effects, technophile's bias, self-fulfilling prophecies.

The 2nd study examined the influence of prospective reflection during foresight sessions on the socio-psychological characteristics of the personality and attitudes to the future (N = 298). The data were gathered in Russia during an annual event called the "Foresight fleet", organized by the Russian Agency for Strategic Initiatives: for 6 days, participants – technology entrepreneurs, venture investors, scientists, representatives of scientific environment and development institutes, business and social associations, leaders of enterprises in the real sector economy, federal executive bodies – have been designing the prospective markets and developing the "roadmaps" by 2035. In the all sessions the same techniques were used ("Rapid Foresight"). The regression analysis revealed that ingroup and outgroup trust, civil and global identity are predictors of positive evaluations of nearest, mid-term and long-term future (in 1, 5 and 20 years). The structural modeling shows (X2=30,432; df=26; CMIN/DF=1,170; p=,250; CFI=,997; GFI=,980; RMSEA=,024; Hi 90=,054; Pclose=,916) that after foresight sessions the perceived predictability of future is negatively affected by its positive evaluation, that could be explained by growth of the tolerance to uncertainty. The comparison of experimental (N = 146) and control group (N = 77) showed that after foresight brainstorms the perceived predictability of long-term future remain unaffected, but significantly higher levels of time perspective extension, importance of long-distant collective future, social trust, and global identity were found. The study showed that discussing common future at the brainstorming sessions don't affect individual time perspective and future predictability, but it increases the extension of the individual perspective, the relevance of the distant common future, the social trust, and the readiness to identify with humanity. The higher the social trust, the higher the perceived ability to influence the future, but the lower its predictability. These data indicate that prospective group reflection at the foresight workshops, under the condition of high group trust, increases optimism and tolerance for the uncertainty of the future. We can conclude, that the key psychological effect of foresight sessions is less about extending time perspective and much more about coping with uncertainty by building social trust and shared cognitions.

What kind of technology competence do we actually need?

Hanne-Cecilie Geirbo, George Anthony Giannoumis, Laurence Habib, Tulpesh Patel

Developments in technology are constantly and rapidly driving the evolution of the way we work. Advanced digital technologies increasingly produce the basis for meaning-making, decision-making, and intervention in professional practice. In this way, technology is not merely mediating existing professional practice, but is also actively changing the range of possibilities and default assumptions in professional practice. In the healthcare industry, for example, sensors attached to or embedded in the body can change how patients are cared for and treated; nurses need to be as equally au fait with data flow as they are with blood flow. In construction engineering, advances in robotics make it possible to do repair work in areas that cannot be accessed by humans.

These digital transformations relate to the broader research literature on innovation and organizational change (Asheim & Gertler, 2005; Campbell, 2004; Carlsson, 2006; Conran & Thelen, 2016; Cooke, 2001; Cooke, Uranga, & Etxebarria, 1997; Hekkert, Suurs, Negro, Kuhlmann, & Smits, 2007; Mahoney & Thelen, 2010a, 2010b; Moulaert, Mehmood, MacCallum, & Leubolt, 2017). This paper draws inspiration from the growing demand for digital knowledge, skills, and competencies that has emerged as part of the economic and social trends such as industrialization 4.0 and the global knowledge economy. One particular aspect of these trends is the extent to which technology and society interact as an integrated reflexive system of invention, innovation, systems change, and value expression. This interactivity prompts a reconsideration of the role of higher education from its formal role as knowledge arbiter to more active role in institutionalizing a new set of culturally bound norms and values.

This paper describes how Oslo Metropolitan University (OsloMet) has attempted to address this challenge through the course Technology and Society. Acknowledging that technological competence is as fundamental to early childhood education, nursing or journalism as it is to engineering, the course is offered to all students, independently of their study programme and background. Developing a course of this nature presents a number of didactic, pedagogical, logistical, and, to some extent, philosophical challenges.

The aim of Technology and Society is to provide students with fundamental knowledge of contemporary technological tools and methodologies, and the skills with which to navigate this complex and constantly evolving landscape. The course seeks to foster a level of technological competence that goes beyond technical know-how to encompass the application of broader social norms, values and processes in interdisciplinary and interprofessional work innovation, and critical reflection.

In its current form, Technology and Society is designed so that interdisciplinarity is balanced with technological specificity and depth. However, early feedback on the course indicates a desire from faculty members from various disciplines for the course to explicitly refer to the professional fields they represent. If taken too far, relevance to a particular field or profession could undermine the interprofessional and interdisciplinary aspect of the course.

The focus on cutting-edge and emerging technologies requires that the content of the course will change and evolve dynamically and often radically, each time the course is offered. This is a significant challenge in a higher education institution where the quality assurance systems for the development of study programs rely on fixed and often protracted processes. This illustrate the paradox that Norwegian education is currently embodying: on the one hand, education is meant to prepare for a fast-changing world and needs to adapt its curriculum at a fast pace; on the other hand, tremendous efforts need to be made to get courses to comply to a rigid set of rules and norms defined as the safeguards of educational quality.

A course that aims to both increase knowledge about the fundamentals of technology and stimulate epistemological and ontological reflection is clearly challenging to an educational system whereby the acquisition of technical knowledge and the development of critical skills are generally kept separate in the curriculum and are also often taught by faculty from different departments. The course's aim to bridge the two knowledge areas, and thereby create a new type of knowledge that is not easily classified as either technical proficiency or critical competency can be seen as unorthodox and controversial. This course aims to challenge the dichotomy between acquiring technical technological skills and developing a rich, nuanced and critical understanding of technology. By adding an interdisciplinary component, it also takes the focus away from the dichotomy and adds a new perspective that can help fostering an understanding of education as both the bearer of new knowledge and as a self-developing experience.

This paper will go through the main epistemological and philosophical reflections that went into the design of this particular course and will discuss findings and reflections from having actually conducting the course (including the student perspectives).

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Learning to Anticipate Worlds through Participatory Speculative Design

Hannah Korsmeyer and Ann Light

Critiques of the deeply-embedded concept of "human-centred design" suggest that simply engaging users in designing a successful product may exacerbate the problems we face today (Pasanen 2019): 'Since design is subordinate to business, the power asymmetry is such that a 'human centred' choice has virtually always less weight that a 'profit centred' one' (ibid). Not least, human-centred may be read as *self-centred* in contrast to work on multi-species and more-than-human design (e.g. Forlano 2018). Challenging this short-sightedness, speculative design has grown up as an antidote to work that allows short-term business values free rein. But, while speculative design aims to promote more future-oriented critical thinking through better anticipation of these issues (e.g. Malpass 2013), this form of design also faces criticism. In speculative design practice, interaction with the public is often limited to the presentation of provocative pieces in galleries and the impact of engagement with these works is largely unknown. It has been cast as elitist and self-serving (Prado de O. Martins and Oliveira 2014), despite its potential for opening up other worlds and ways of being.

Research from the field of education has shown that collaborative learning techniques and learning through making can enhance critical thinking (e.g. Gokhale 1995; Härkki et al 2016; Lahti et al 2016; Seitamaa-Hakkarainen et al 2016). Therefore, involving publics in crafting these design speculations becomes an important strategy in democratizing this process and deepening engagement. Going beyond responding to designer scenarios of future challenges, craft methods linked with collaborative reflection offer a transformative tool (e.g. Light et al 2019). Learning theorist Holt describes the process of learning as traversing and navigating four worlds: the interior psychological world of emotions and mindsets, the world of personal experience which shapes values and beliefs, the world of possibility (everything we know of, but have not experienced) and the potential world of things we do not even know we do not know (Holt 1972). These collaborative speculative design engagements provide a unique social learning space for participants to engage with their personal lived experiences while anticipating how the future may be different and becoming aware of possibilities and potential.

Light's goal is to reveal the 'designed, therefore designable' nature of the world (2011). This paper argues that speculative design could be (and is being) made more impactful through harnessing learning theory to create collaborative making and hacking opportunities with diverse groups, especially with 'non-expert' designers (Edwards and Korsmeyer 2018). Learning with/from each other could become the primary outcome of speculative design. So, we bring together methodologies discussed in education, cognitive science, speculative design, design futures, and transition design.

As examples from our practice, we introduce our co-design workshops with young women about designing safer cities and the making of a participatory workshop series for generating alternative worlds. In the latter case, a consistent process has developed over several iterations, with each stage designed to meet a particular challenge of speculating. Small groups are given a globe in which there is a description of a world that is not ours (i.e. one substantive aspect happened differently). Each group is invited to work together to:

1. **World**: discuss this world, how it works and what the present would be like if this world were ours. (This allows imagination to reign and people to extrapolate to alternative conditions through storytelling.)

2. **Chronicle**: record and share the story of the world to other groups. (This pins down characteristics, providing important scaffolding for more detailed speculation.)
3. **Create**: make a thing/system/service that reflects this world. (This encourages articulation of the alternative value system by collectively thinking-through-making and committing to concrete choices about this imagined world.)
4. **Analyze**: reflect on the world and its outcomes to consider:
    - how the values affect the design;
    - how this relates to our world(s);
    - what the process of imagining another world has revealed. (This works to make the connections that support thinking beyond the artifact/world.)

The workshop ends with contrasting of outcomes and a whole-group discussion of learning across cultural and socio-material dimensions.

Participants themselves craft the speculations in our work, supported by the workshop structures. Involving people in a design process is an important tactic for getting people to care and consider more deeply what they are discussing. This works in contrast to a typical speculative design project, where designers present speculations to the public as a passive audience. We instead seek to involve everyone in the process, while working to find culturally relevant means to bring alternatives to light and mobilize care through creative labour.

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Cultural-Historical Anticipation Perspectives

Peter Jones, OCAD University, Strategic Foresight & Innovation

Introduction

Foresight practices that have evolved from Western models of futurism and future studies have promoted methodologies for creation of desirable future prospectives, often described as *preferred futures*. Yet if we apply the epistemic and social critiques that animate discourse in other fields, we might ask whether futures practices address the questions of the sociocultural power of people to define a future in which they have a stake. Arguably, without holding a stake for performing action toward a preferred future scenario, foresight exercises risk becoming resources for passively advising future prospects, without the intentional interest and agendas of committed individuals situated within a motivated cultural-historical context.

When we convene foresight studies with policy, corporate, or issue-based stakeholders, a net future power unfolds in asking the very question "whose preferred future." The emerging critique argued by the decolonization movement holds the "power to decide" as a central ethical question, of current issue in design studies and social change discourses. A further analysis reveals the ontological approach of ensuring an appropriate method and orientation to futures for those whose future is, as it were, at choice. An ontological perspective may not resolve power imbalances or social inequities between futures stakeholders, but rather it embraces the valid imperative for self-determined cultures (or communities) to define preferred futures through culturally appropriate foresight.

Conventional foresight studies, as with contracted research, typically follow the epistemology and represent or embed the values of the sponsor stakeholders. This is entirely appropriate, as foresight-led advising provides a service to a requesting organization that serves their strategy and learning needs. A service relationship is inevitable in practice, as the user of foresight will require concepts that match their capacity to apply the models. The practical demand to channel futures products to match a client epistemic framework, even if they are unaware of their biases, is a well-known phenomenon in design and innovation research. In mixed-methods research informing applied problems, findings must be presented and defended in terms commensurate with an organization's collective orientation to knowledge and the validity of claims. If not, disputed observations are easily dismissed because of methodological or validity concerns, which obviates any argument regarding content and findings.

Western-oriented foresight methods will appear as epistemologically valid and meaningful to Western (and by extension, global) corporate and public sector organizations. The increased demand for futures studies during the period of intensified globalization (1998 – 2018) may lend an undeserved universalism to foresight methods that have been used extensively to argue for globalized futures. By default, non-proprietary futures studies of sectors or social problems titled "the future of" embed the claims of an increasingly globalized and technologically-driven world. Examples contrary to these embedded values systems are difficult to locate in open sources. For these reasons, but among others, our foresight methods provide high flexibility for adaptation, but might be insensitive to significant cultural variations unless these are explicitly demarcated.

Anticipation for Cultures, with Histories

We can define several normative aims relevant to matching foresight methods and advising to culture:

a) Futuring methods are historically developed in and from Western traditions and must be critiqued to ensure their cultural relevance to communities of concern.
b) The literature often develops methods without considering the fit to culture. Researchers and practitioners have little guidance to select or reinvent appropriate methods in culturally complex settings.
c) How do we respect democratization (everybody deserves to envision their future)? Futuring methods ought to be readily available and culturally relevant to non-traditional and marginalized communities.
d) Stakeholders ought to be able to update trends and assumptions delivered in foresight. Opaque or poorly-matched methods can inhibit the owners of received work from continuous learning.

Even as futuring methods have evolved (we might observe) from expert/advisory to stakeholder/ participatory, foresight studies will involve a mix of stakeholders selected for their association with a project, not typically sampled from known cultural contexts to reflect representative social variety. While we might not require so much a general theory of the stakeholder for futures context, we might at least acknowledge the questions of stakeholder selection for representative perspectives and their temporal preferences. Otherwise, we have no way of discriminating whether futures stakeholders reflect temporal cognitive biases driven by individualism, societal concerns, or cultural affiliation. An early theory is articulated in hopes of adapting methods ethically sensitive to cultural views of temporality, knowledge, and desirable futures.

We can propose a social system model that specifies several nested (inclusive) levels of stakeholder function in futures thinking, to which we could conceivably orient and fit method selection. Levels of system associated with *epistemology* might include activity, organization, profession, society, and culture. Levels of social system defined by *ontology* include the individual (psychic system), their commitments to belonging, religion or belief system, and culture (as civilization). A relevant perspective (here, meaning an intersection of theory and epistemology) can be developed from activity theory (Engeström, 2009), a distributed cognition theory of action, based on constructivism and cultural-historical relationships to work and culture. While activity theory has been applied to human-computer interaction and collaborative work (Kaptelinin & Nardi, 2006), the framework was developed from Vygotsky's (1980) learning theory applied in cultural histories, known as Cultural-Historical Activity Theory.

Recent developments of activity theory have found productive settings in education, sociotechnical systems, and cultural studies (Sannino, et al., 2009). However, its application to anticipation has been relatively non-existent. This might be due to some extent that its framing of the concept of *activity* is that of an ongoing, temporally persistent, culturally situated act of mediated action. This model has relevance in sociotechnical studies as, for example, when a significant technology is integrated into a work practice, such as MRI imaging in cancer diagnosis, it become a mediating instrument within a continuing medical activity, not necessarily a "new activity." In every case that the MRI is used in imaging, it creates new actions, and for some roles, new activities, but for the oncologist, a new mediated action within an activity system. Such a view stands counter to the common narratives in technology-driven futurism and the theories of disruptive innovation. Instead there are significant implications of the extension of cultural histories that challenge the ways in which social futures are both imagined by stakeholder and unfold in reality in actual human cultures.

This early stage study argues for what we might call Cultural-Historical Anticipation Perspectives, extending the framework of activity theory to the multiple temporality perspectives implicit in the unit stages of action (activity, action, and operation) and addressing the anticipatory demand of the aim of an activity, the "object" or result of motivated actions. Activity is always culturally situated, which is not only grounded in historical formative contexts, but to expected future outcomes of activity to a culture. The unit of analysis of activity extends to culture (through learning and participation). But it also extends (within the same scale) the function of what Daly-Buajitti (2015) refers to as "future objects" as the desired objects of a culture. This analysis is not as simple as the process suggests, however, in that the extension to culture requires the extension of histories influencing the culture. In this expansion of histories to futures, we can locate activity as an evolving, yet culturally consistent and persistent human endeavor. The possibility of such a "CHAP" perspective is to offer a theoretically grounded methodology for identifying core cultural behaviors as activity systems that anticipate social futures in one, or many cultural systems touched by futures studies.

This perspective on activity through cultural histories yields trajectories of the "short now," or futures encapsulated in current culturally significant events. By this, we might locate activities of cultural self-organization through ethnographic observation that might well extend, conserve or even "regress" its futures consistently with cultural values. For example, I argue that the Gilets Jaunes, the French anti-globalization movement, is demanding such a conserving future in its specified grievances against a so-called progressive government. If we merely accept political arguments for these events and fail to interpret them as "history making," then we also fail to imbue these creative social actions with the social relevance they demand as coherent visions of the future that diverge from a normative progressive view. By re-imagining these events as consistent with cultural-historical activities, the symbolic meanings can be interpreted consistently, and cultural futures consistent with a collective will (the essence of democracy) become visible and clarified.

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Notes from the sea: Promoting critical cultures of anticipation using posthuman scenarios and participatory design methods

Even as we anticipate the future, we are bound by our current beliefs about the world. We risk ignorance of these constraints because our beliefs are often deeply held. The need to examine these beliefs grows ever more urgent as we increase our knowledge of the interconnectedness of nature. As we strive to "consider and evaluate the present in light of the way [we] imagine the future,"[1] we can bring these constraints to the surface through critical cultures of anticipation. These cultures extend anticipatory work beyond our own, limited perspective into an expansive worldview that takes the complex adaptive systems of the future into account.

"Notes from the sea, 2218" is a speculative and participatory design project created to engage designers with these questions and to identify the anticipatory narratives that they usually take for granted. Participants took on specific perspectives that shifted their thinking from a dominant, human-centered paradigm to a posthuman counter-narrative that raised questions about humans' place in the natural world and the morality of anticipatory exercises.

A dominant narrative goes like this: Humans showed up, screwed up, and now must clean up their mess by inventing new technology and drastically altering their behavior... or suffer the consequences. The popular view holds up a static and "pure" vision of nature, untouched by human intervention, as a state to which we ought to try to return.[2] Nature "waits" for a solution to human harm, and if we cannot deliver, it withers and dies. But this mainstream discussion is entirely human-centric. Humans have long accepted that it is wrong to destroy the environment, but is it wrong "simply because a sustainable environment is essential to (present and future) human well-being?"[3]

Potential counternarratives focus on the natural world as a complex adaptive system that responds to change by changing in turn[4] or center non-human entities rather than human ones. "The challenges of environmental and socio-technical

change" present us with both the opportunity and the necessity to reexamine the dominant narratives that shape our thinking about the world.[5] But how can we step outside our own limited perspective? We created an opportunity for critical conversation about the way we view the future, by building a fictional—but not impossible—world, employing creativity and logic, and reasoning together through dialogue.

To make this space for critical conversation, we employed both an artifact and a game. First, a fictional future marine biologist's field journal introduced the audience to the idea that some species will adapt and even thrive in an altered environment. Then, a card game invited the audience to participate as "future biologists" by imagining adapted species and adding them to the field journal.

Marine biology served as an entry point for our audience of designers, to ensure that our thinking would be speculative but not fantastic: imaginative and future-thinking, but grounded in reality. The journal allowed the audience see through the eyes of a biologist.[6] As a speculative object, it aimed to be "inspirational, infectious, and catalytic, zooming out and stepping back to address values and ethics."[7] In the card game, participants used prompts to imagine and sketch the way that a species might adapt to an altered environment. The game helped participants' own values to emerge through the process;[8] the cards themselves were a tangible and familiar way to engage the audience.[9] After the participants had interacted with the notebook and cards, we joined them in conversation about their thinking.

Through the activity and discussion, the presenters and the audience together drew awareness to our preconceptions about a "natural" state, challenged a human-centered approach to anticipation, and discussed the moral implications of provoking conversations that question humans' role in potential futures. Participants examined the point of view from which we assign moral value to human actions: whether, from the perspective of certain species (as they currently exist or as they might evolve in the future), an altered environment might be "good." This created some tension for the audience; the positive view felt dangerous and

irresponsible. However, we feel that this tension is evidence of success. A challenge to one's core beliefs is inherently uncomfortable. On the whole, the group responded positively to the experience and credited the participatory and speculative nature of the activity with enabling them to expand their thinking.

When we challenge mainstream narratives, we find ourselves free to consider problems in a different light. We are seeing signals of a willingness to adopt a posthuman view of the world in the private and public sector: Perdue Foods, the US-based food and agriculture company, has begun to consider what its chickens want from their living conditions.[10] A Māori tribe sought and won legal recognition for the Whanganui river, ensuring that the river has "all the rights, duties, and liabilities of a legal person," instead of being seen as a resource to be owned and managed.[11] We hope that by introducing posthuman futures with participatory design methods, we can build critical cultures of anticipation that lead to new perspectives on the problems of the present.

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Introduction

Foresight practices that have evolved from Western models of futurism and future studies have promoted methodologies for creation of desirable future prospectives, often described as *preferred futures*. Yet if we apply the epistemic and social critiques that animate discourse in other fields, we might ask whether futures practices address the questions of the sociocultural power of people to define a future in which they have a stake. Arguably, without holding a stake for performing action toward a preferred future scenario, foresight exercises risk becoming resources for passively advising future prospects, without the intentional interest and agendas of committed individuals situated within a motivated cultural-historical context.

When we convene foresight studies with policy, corporate, or issue-based stakeholders, a net future power unfolds in asking the very question "whose preferred future." The emerging critique argued by the decolonization movement holds the "power to decide" as a central ethical question, of current issue in design studies and social change discourses. A further analysis reveals the ontological approach of ensuring an appropriate method and orientation to futures for those whose future is, as it were, at choice. An ontological perspective may not resolve power imbalances or social inequities between futures stakeholders, but rather it embraces the valid imperative for self-determined cultures (or communities) to define preferred futures through culturally appropriate foresight.

Conventional foresight studies, as with contracted research, typically follow the epistemology and represent or embed the values of the sponsor stakeholders. This is entirely appropriate, as foresight-led advising provides a service to a requesting organization that serves their strategy and learning needs. A service relationship is inevitable in practice, as the user of foresight will require concepts that match their capacity to apply the models. The practical demand to channel futures products to match a client epistemic framework, even if they are unaware of their biases, is a well-known phenomenon in design and innovation research. In mixed-methods research informing applied problems, findings must be presented and defended in terms commensurate with an organization's collective orientation to knowledge and the validity of claims. If not, disputed observations are easily dismissed because of methodological or validity concerns, which obviates any argument regarding content and findings.

Western-oriented foresight methods will appear as epistemologically valid and meaningful to Western (and by extension, global) corporate and public sector organizations. The increased demand for futures studies during the period of intensified globalization (1998 – 2018) may lend an undeserved universalism to foresight methods that have been used extensively to argue for globalized futures. By default, non-proprietary futures studies of sectors or social problems titled "the future of" embed the claims of an increasingly globalized and technologically-driven world. Examples contrary to these embedded values systems are difficult to locate in open sources. For these reasons, but among others, our foresight methods provide high flexibility for adaptation, but might be insensitive to significant cultural variations unless these are explicitly demarcated.

Anticipation for Cultures, with Histories

We can define several normative aims relevant to matching foresight methods and advising to culture:

a) Futuring methods are historically developed in and from Western traditions and must be critiqued to ensure their cultural relevance to communities of concern.
b) The literature often develops methods without considering the fit to culture. Researchers and practitioners have little guidance to select or reinvent appropriate methods in culturally complex settings.
c) How do we respect democratization (everybody deserves to envision their future)? Futuring methods ought to be readily available and culturally relevant to non-traditional and marginalized communities.
d) Stakeholders ought to be able to update trends and assumptions delivered in foresight. Opaque or poorly-matched methods can inhibit the owners of received work from continuous learning.

Even as futuring methods have evolved (we might observe) from expert/advisory to stakeholder/ participatory, foresight studies will involve a mix of stakeholders selected for their association with a project, not typically sampled from known cultural contexts to reflect representative social variety. While we might not require so much a general theory of the stakeholder for futures context, we might at least acknowledge the questions of stakeholder selection for representative perspectives and their temporal preferences. Otherwise, we have no way of discriminating whether futures stakeholders reflect temporal cognitive biases driven by individualism, societal concerns, or cultural affiliation. An early theory is articulated in hopes of adapting methods ethically sensitive to cultural views of temporality, knowledge, and desirable futures.

We can propose a social system model that specifies several nested (inclusive) levels of stakeholder function in futures thinking, to which we could conceivably orient and fit method selection. Levels of system associated with *epistemology* might include activity, organization, profession, society, and culture. Levels of social system defined by *ontology* include the individual (psychic system), their commitments to belonging, religion or belief system, and culture (as civilization). A relevant perspective (here, meaning an intersection of theory and epistemology) can be developed from activity theory (Engeström, 2009), a distributed cognition theory of action, based on constructivism and cultural-historical relationships to work and culture. While activity theory has been applied to human-computer interaction and collaborative work (Kaptelinin & Nardi, 2006), the framework was developed from Vygotsky's (1980) learning theory applied in cultural histories, known as Cultural-Historical Activity Theory.

Recent developments of activity theory have found productive settings in education, sociotechnical systems, and cultural studies (Sannino, et al., 2009). However, its application to anticipation has been relatively non-existent. This might be due to some extent that its framing of the concept of *activity* is that of an ongoing, temporally persistent, culturally situated act of mediated action. This model has relevance in sociotechnical studies as, for example, when a significant technology is integrated into a work practice, such as MRI imaging in cancer diagnosis, it become a mediating instrument within a continuing medical activity, not necessarily a "new activity." In every case that the MRI is used in imaging, it creates new actions, and for some roles, new activities, but for the oncologist, a new mediated action within an activity system. Such a view stands counter to the common narratives in technology-driven futurism and the theories of disruptive innovation. Instead there are significant implications of the extension of cultural histories that challenge the ways in which social futures are both imagined by stakeholder and unfold in reality in actual human cultures.

This early stage study argues for what we might call Cultural-Historical Anticipation Perspectives, extending the framework of activity theory to the multiple temporality perspectives implicit in the unit stages of action (activity, action, and operation) and addressing the anticipatory demand of the aim of an activity, the "object" or result of motivated actions. Activity is always culturally situated, which is not only grounded in historical formative contexts, but to expected future outcomes of activity to a culture. The unit of analysis of activity extends to culture (through learning and participation). But it also extends (within the same scale) the function of what Daly-Buajitti (2015) refers to as "future objects" as the desired objects of a culture. This analysis is not as simple as the process suggests, however, in that the extension to culture requires the extension of histories influencing the culture. In this expansion of histories to futures, we can locate activity as an evolving, yet culturally consistent and persistent human endeavor. The possibility of such a "CHAP" perspective is to offer a theoretically grounded methodology for identifying core cultural behaviors as activity systems that anticipate social futures in one, or many cultural systems touched by futures studies.

This perspective on activity through cultural histories yields trajectories of the "short now," or futures encapsulated in current culturally significant events. By this, we might locate activities of cultural self-organization through ethnographic observation that might well extend, conserve or even "regress" its futures consistently with cultural values. For example, I argue that the Gilets Jaunes, the French anti-globalization movement, is demanding such a conserving future in its specified grievances against a so-called progressive government. If we merely accept political arguments for these events and fail to interpret them as "history making," then we also fail to imbue these creative social actions with the social relevance they demand as coherent visions of the future that diverge from a normative progressive view. By re-imagining these events as consistent with cultural-historical activities, the symbolic meanings can be interpreted consistently, and cultural futures consistent with a collective will (the essence of democracy) become visible and clarified.

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Key Thematic Question- Means and methods for making the future accessible?

Reopening futures of remote, depopulating Alpine areas – the pilot project ALPJOBS

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Strong imbalances in terms of job opportunities and supplied services are common issues across the EUSALP regions; where in the Alpine more remote areas such issues are amplified by the decline of population. A relevant part of the systemic problem are the young people (15-34 years) which generally go out of their villages for higher education or job and do not come back to ("brain drain").

The pilot project ALPJOBS (2018-2020, funded by the Alpine Region Preparatory Action Fund, ARPAF) aims to contribute to initiatives against depopulation in remote alpine areas focusing on future job opportunities and on social processes that can support (or hamper) them. The five project partners, from Italy, Slovenia, Austria and Switzerland, by using the selected methods derived from Futures Studies, try to answer to following open questions:

- how to involve young, entrepreneurs, labor agencies, local policy makers and interest groups in developing sustainable innovations of the local social economic system;
- how formal and/or non-formal and/or informal education system and vocational training centres could foster competences fitting to possible future conditions (2030) in regional enterprises and job seekers;
- how to promote the anticipatory governance in establishing and maintaining attractive job opportunities, as well as enhance the resilience of local communities.

The pilot project is intended as a learning and testing experience for stakeholders without prior knowledge of future studies, with expected results at different levels in terms of:

- spread of competences in stakeholders and agents of change in Alpine remote areas on adaptation to the coming changes or orientation of local opportunities for the labor market and innovation;
- collection of insights and strategic indications for possible future-proof projects of local development in collaboration with the local communities;
- fostering the awareness of entrepreneurial and social actors on the importance of involving young people and building strategies for local development, looking at the medium-long term and the related uncertainties.

ALPJOBS project consists of training modules for partners on methods from future studies, and applications of these by the same partners in their territory. The chosen methods aimed at providing to learners an overview of methods of different difficulty, as well as at allowing them to collect a series of strategic information and insights useful for subsequent more operational developments.

In the first phase, the partners collected a series of socio-economic statistics to understand the territorial dynamics (local trends) and to recognize the coming changes (megatrends). Subsequently, they conducted several "strategic interviews" to identify the fears and hopes of relevant local actors concerning the futures of their community. These expectations, associated with their motivations, influence their ability to visualize their desirable futures and converge their efforts towards long-term strategies. At the end of the first phase, the partners developed a quadrant of strategic scenarios, inspired to the "Shell method" (based on two axes of uncertainty).

In the second phase, the partners identified the local territorial sub-systems and the processes most capable to sustain (or hamper) innovation and job opportunities, using a tailored procedure of participatory modelling within the systems thinking paradigm. In the same, they listed the "local treasures", or local capitals, including both the tangible and intangibles ones. These processes and local capitals will form the basis for any local development strategy.

In a third phase, the partners were introduced to backcasting and road mapping methods and applied these with local stakeholders, resulting in a set of strategic points to further develop. The roadmapping was

performed using an original tailored template, considering different sub-systems, such as: Education, Community, Job market, Technology (locally available), Resources, along five time-horizons (past, present, 1 - 3 – 10 years).

In the last phase, the partners composed a fictitious CV of a promising young job-seeking candidate (in 2030), describing the skills deemed most suitable for local contexts in future, considering the virtuous processes, the uncertainty scenarios, the local treasures, the most favorable conditions, emerged from all previous exercises and analyzes.

The results are interesting at two levels: process and content. The development of future exercises has encouraged the project partners to embrace a way of thinking about broader time horizons, “thinking in systems” the local development and looking at long term objectives. The concepts of futures studies (such as strategic scenarios, relevant uncertainties, megatrends, feedback loops) have entered their vocabulary and that of local stakeholders involved in the applications. The partners have translated the methodological indications into the language of their stakeholders for local applications.

The contents of these applications have some limitations due to structural factors (limited time and personnel resources) as well as contingent factors (inexperience about futures studies, relatively small agency and commitment). The depth and detail of analyzes and of the “futures exercises” have a considerable room for improvement.

Nevertheless, overall, the project has allowed us to collect significant samples from different contexts of the Alpine region, including 61 strategic interviews, 10 local strategic scenarios, 7 workshops of “systems mapping”, 5 workshops of backcasting, 5 workshops of roadmapping, involving locally groups of stakeholders.

Interesting information emerged from information gathered on expectations, fears, promising processes and obstacles to innovation. All these can be useful to visualize and plan favorable local conditions for the development of job opportunities for young people in the coming years.

Interprofessional future workshops as a method towards anticipating a future flexible energy system

Abstract

Within the field of environmental communication, it is common to distinguish between top-down and bottom-up processes. Whereas top-down processes are seen as driven by powerful governmental or institutional bodies, bottom-up processes are associated with citizen driven efforts. This paper, however, departs from that dichotomy by focusing on *professionals* as drivers of change towards green transition, thereby taking what has been termed a *middle out approach* (Janda & Parag, 2013). The professionals of relevance for green transition are employed in both the public and private sector, for instance as energy consultants, communication managers, or craftsmen with expertise on energy saving. They often interact with other professionals, citizens and political players, and can be viewed as *intermediaries* between citizens and governments (Kivimaa & Martiskainen, 2018). The professionals have no legislative power and work within the framework of political decisions made by others. However, instead of viewing them as simply carrying out or implementing political decisions, they should be seen as having a more substantial influence on green energy transition process. This calls for development of new methods which can facilitate future innovative ideas based on current professional expertise as well as dialogical exchange across professional backgrounds.

This paper presents a method to make central professional actors within the district heating sector discuss future ideas on how to use residential buildings as flexibility generators in the system. The method is inspired by the *Future Workshop* approach suggested by Junk and Müllert (1987) and Lauttamäki (2014), but has been adjusted to address specific technical questions and participation from professionals rather than citizens. The method seeks to facilitate inter-professional sharing of experiences and perspectives, including discussions on potentials, challenges and visions for a future intermittent energy system. Key professional actors involved in the testing of the method were representatives from municipalities, utilities, housing associations, private companies, technology developers etc. While anticipation is nothing new to many of these actors in the form of technical modelling and simulation, the current use of future workshops offers a more holistic approach which allows the participants to co-articulate a diversity of anticipatory forms such as societal visions, business models, and technological arrangements. The key output is not primarily future scenarios for action, but rather an insight into the complexity of problem understandings related to these future scenarios.

This paper reports on three future workshops conducted at three different places in Denmark and include both method discussion and presentation of preliminary findings. The future workshops were structured in three different phases. In the first phase, the professionals were asked to individually brainstorm on key actors needed to realize an integration of buildings into a future intermittent energy system. The identified actors were then mapped out on concentric circles, to prioritize their im-

portance between high and low. The professionals were asked to attach small post-it' notes to each of the actors about what they see as a central challenge for the specific actor in relation to the theme discussed. Phase two followed the same steps as phase one, but focused on the needs for technologies and infrastructures. Based on the mappings in phase one and two, the actors were asked in phase three to identify the most important challenges, as well as to create drawings of future ideal solutions to these challenges.

Choosing Future Workshops as a research method, we are interested in surfacing, identifying and visualizing the professionals' many different interests and perceptions of the challenge, and combine these into collective visions. To assist such work, we have made use of mapping techniques and visualization techniques inspired from practices of participatory innovation (Buur & Matthews, 2008; Buur & Larsen, 2010) and participatory design (Sanders & Stappers, 2008; Simonsen & Robertsen, 2013). Those fields have a long tradition for using artefacts as means to engage many different actors in future innovations. The concentric circles and actor cards serve as mediating artefacts between the professionals' different knowledge and perception, and are thus important for both representation of prior knowledge and learnings, as well as negotiation and construction of new meaning (Vygotsky, 1986; Cole & Engeström, 1993). In particular, mapping techniques prove valuable as a way to help participants simplify complex and abstract knowledge by putting it into spatial terms (Roos, 2006). In the workshops, the mapping allows the participants to see a broader representation of actors at the same time, as well as to move these around as a way to negotiate both their relations and importance. The insights gained from this does not just lie in the finalized mapping, but the collective mapping itself encourage participants to argue and justify different perspectives and priorities when an actor is placed. As such, the tangible materials are used to scaffold social interaction in the Future Workshops, as well as to provide common ground for communication between the professionals.

Based on findings from the three workshops, the paper will reflect on strengths, weaknesses and potentials of using the Future Workshop approach as a way to engage professionals in anticipating a future flexible energy system. Focus will be on the ways in which the specific Future Workshop as a communication format mediates the participants' identification and common prioritization of key actors and their agency in an intermittent energy systems. This includes the mediational role of the material design of the workshops and the interactional staging in successive phases.

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Game Design Fiction:
Bridging mediation through games and design fiction to facilitate anticipation-oriented thinking.

This paper will introduce the notion of Game Design Fiction, the hybridisation of design fiction and game design to imagine experiences facilitating future-oriented thinking and anticipation-related reflexes for non-expert publics.

CROSSING TWO FORMS OF DESIGN FOR REFLECTION

This paper will explore the bridges between two fields: "mediation through games" building on the theory of persuasive games (Ian Bogost, Persuasive Games: The Expressive Power of Videogames, 2010) and "design fiction", a future-oriented design discipline (Julian Bleecker, 2008).

The first field, persuasive game design, is advocating for provocative and reflexive video games representing how systems work and invite players to formulate judgements about them. The second one, design fiction, argues for the use of diegetic prototypes to materialise possible futures. Design fiction has gained traction in anticipation-oriented practices as the approach illustrates upcoming socio-technological stakes by embodying questions or critics into speculative and mundane artefacts coming from near futures.

This paper will reflect on the ongoing collaboration between two French design studios, Casus Ludi - specialised in mediation through games - and Design Friction - specialised in applied design fiction; a collaboration currently experimenting with Game Design Fiction.

A DEFINITION FOR GAME DESIGN FICTION

Game design fiction is building on the idea of merging codes and postures from persuasive game design and design fiction.

Facing the challenge of telling complex and systemic future narratives to an audience reaching beyond foresight experts, design fiction could use game design mechanisms to build interactive artefacts prompting debates about preferable futures. Game Design Fiction envisages how video games might be extrapolating and transforming weak signals highlighted by design fictions into provocative-but-ludic experiences happening in a near future. Game design fiction could become a new form of anticipation-oriented tool seeking to engage the stakeholders in reflecting on current status quo and alternative scenarios for tomorrow.

Indeed, games, as a popular medium, could contribute in making anticipation and foresight more attractive, while offering experiences able to challenge our

expectations for futures and our myths about innovations and disruptions. Video games would then become a vector to share and democratise future scenarios created by a design fiction driven approach. In this sense, Game Design Fiction can be defined as the act of producing video games highlighting the stakes related to situations that haven't happened yet.

EXPLORING THREE MODES OF INTERSECTION BETWEEN MEDIATION THROUGH GAMES AND DESIGN FICTION

Building on the continuing experiments co-produced by Casus Ludi and Design Friction, this paper will share first insights and learning to clarify three perspectives of articulation between mediation through games and design fiction. Each case will reflect on different stages and contexts of development as well as implementation to clarify insights and learning.

1. Using game-based codes to build design fictions and future scenarios:
This first approach ambitions to make design fictions and future scenarios building more accessible for non-designers, with a special interest in fostering collaboration between different publics. Based on world-building principles inherited from video games, this hybridisation is about providing playful tools to imagine shared prospective scenarios and worlds.

To highlight the potential of this perspective, we will share learning from our playful kit "Flaws of the Smart City" (released in 2014), a card game to explore the dark faces of connected urban space during workshops with urbanism students, citizens, urban planners and local governments.

2. Turning a design fiction into a game:
In this case, the future diegetic artefact, also known as the design fiction, is a video game. It embodies the codes of future video games to tell an interactive design fiction exploring different layers of a speculative world. This unique playful and interactive sandbox allows the audience to experience the consequences of a set of actions.
As the video game then becomes a diegetic prototype to convey speculative and anticipatory perspectives, it encompasses some unique interactive assets proper to a simulation apparatus: it allows to collect data about players' choices to map decision journeys, to extract data from players' interactions to inform or clarify options for decision-making.

To illustrate this case, the paper will present feedback and observations from the "A month facing antimicrobial resistance" (temporary name, as the project is in a development phase and scheduled to be released in late August 2019). This game portrays a future "newsgame" (a video game-based experience released by a newspaper-related stakeholder) which highlight the daily consequences of a widespread antimicrobial resistance.

3. Building a game to connect and browse between a series of design fictions:
This third perspective investigates the potential of linking different design fictions articulating a same future scenario by providing a polyphony of visions; meaning confronting different points of view about a specific speculation or extrapolation. During a single experience, the game-based interactions help the

navigation within a prospective scenario and between different future situations.

Regarding this mode of intersection, we will present the knowledge learned from "IA Game" (temporary name, as the project is in current beta testing and planned to be released in April 2019) during which the player is taking part into a future trial based on the idea of restorative justice. The player is then invited to connect evidence - which are materialised into design fictions - to judge the guilty of an artificial intelligence system involved in a road accident.

FIELDS OF APPLICATION AND FUTURE PERSPECTIVES

Game Design Fiction opens a range of perspective to support anticipation-oriented thinking and actions. As game mechanisms allow to explore the prospective worlds underlined by design fictions, this medium facilitates projection to then decide how we could reach or avoid a specific speculative situation.
In this sense, Game Design Fiction reveals to be an actionable approach as it emphasises a shift from fiction to decision and action. This hybridisation allows at the same time to collect qualitative insights to inform decisions, evaluate responses and postures when rehearsing upcoming situations and develop a form of organisational improvisation as stakeholders are trained to face uncertainty. Among the fields of application, some having been already successfully tested during previous experiments, we might mention using Game Design Fiction in participatory initiatives to design or test future public policies, or helping technology innovators to question and assess the socio-political acceptability and impacts of their new products.
The paper will review approach these future perspectives and applications with a critical perspective, discussing the limits of Game Design Fiction.

Imagining collaborative future-making

In this curated session we invite to a conversation around practices of *collaborative future-making* and how it might connect to the theme of anticipation. More specifically we will address the role and interplay between 'critical imagination' and 'collaborative engagements' in future-making processes. This interplay has bearing on several of the conference questions such as: What role can design have in future making? How can we critique through making? How can collaborative work for the future be realized in anticipatory actions in the present?

We are a group of researchers exploring the theme of collaborative future-making that draws upon critical perspectives from the humanities and social sciences combined with the constructive and collaborative aspects of making in design research. This proposal should be understood as a shift from engaging with the future through forecasting, to a concern with (1) How we through critical imagination can challenge basic assumptions, norms and structures to widen the perspectives on what can constitute socially, culturally, ecologically and economically sustainable futures; and, (2) How we can set up more inclusive collaborations to prototype and discuss alternative futures, engaging not only professionals and policy makers, but also citizens and civil society. Seen together these two strands might offer some possibilities that are argued for within the emerging discipline of anticipation, namely to prepare for the unknown and to be able to make sense of novelty (Poli 2010, Miller et al 2013)

Critical Imagination

In recent decades it has been argued within a number of disciplines that our ability to imagine historical change has come to an end (Unger 1987; Harvey 2000; Kiersy 2013). Anthropologist David Graeber (2011, 393–394) even speaks of a collapse of imagination, while literary/cultural critic Fredric Jameson (2003, 76) argues that today it is easier to imagine the end of the world than the end of capitalism. Parallel to this there are also calls for the need to reinvigorate our imaginative capacities, both in order to challenge hegemonic political ideals, and petrified academic positions (Srnicek & Williams 2015; Harvey 2000). Political scientists have begun to turn to literary and media studies as a way to rethink the present and openly use imagination as a tool amongst their more traditional approaches (e.g. Kirsey 2013). Using critical imagination to break out of (imagined) political and scholarly deadlocks is an important theme within collaborative future making. Imagination should not be confused, however, with an abstract practice. Instead, critical imagination links directly to forms of participation and engagement, as described next.

Collaborative Engagements

Design research has always been concerned with the future and the active construction of the not yet existing; often more focused on the near future, although areas such as design fiction (Bleeker, 2009) and speculative design (Dunne and Raby 2013) have expanded the temporal scope. However what we see as especially relevant within this frame is the area of participatory design (Schuler and Namioka 1993, Simonsen and Robertson 2012). This field explores opportunities and challenges in collaborations, basically how we can work together. At the center is an ethos to democratize processes of change, that is, to

acknowledge people's skills and rights to influence their everyday environments independently if it regards workplace changes or community development (ibid.). With inspiration from science and technology studies and feminist technoscience the field also pays close attention to how both material and social aspects influence agency and processes of change. This brings forward questions such as: What is possible to change or not and why? Who can change what and how? How can socio- material networks be opened up and be more inclusive?

Curator:
Per-Anders Hillgren is a scholar in the research field of participatory design and is passionate about exploring opportunities for how to democratize processes of change. At present he is an associate professor at the School of Art and Communication and coordinates the research platform Collaborative Future Making at Malmö University.

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Format:
The session is divided into four phases:

1. The curator introduces the theme of collaborative future-making. (10 minutes)

2. The interdisciplinary panel of contributors will share a series of statements or speculations (images, objects and quotes) that engage with the role and interplay between 'critical imagination' and 'collaborative engagements' in future-making processes. (30 minutes)

3. Gatherings in smaller groups, where the audience is invited to add or rearticulate statements and speculations, and discuss the interplay between them. The conversation invites to collectively imagine what collaborative future-making can become as well as how it relates to the theme of anticipation (30 minutes)

4. A plenary discussion to share reflections. (20 minutes)

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ANTICIPATION 2019

Oslo, 9–11 November 2019

Curated Session Proposal

Thinking between making and analysing in Anticipation Studies.

Introduction

One of the most valuable characteristics of anticipation studies, is that it orients itself to the future in order to create the present. This session seeks to highlight the ontological in this approach. The session will explore: how the possibilities of future being impacts what and how we become; how this is affected by, and affects, creative practices. This will require engagement with a number of things: first, that the future exerts a creative pressure on the present that can be uncovered through anticipation. Second, that in so doing, anticipation works as a creative practice, alongside others that may be more familiar: art, design, and so on. Finally, that philosophy as another creative practice can offer an angle on these relations between the future and the present, and an anticipation that works between them. Participants in this session develop some or all of these issues in a range of ways that highlight the impacts of philosophy, creative practice and anticipation upon each other.

The positions of 'thinking', 'making', 'analysing' (and others) are by no means stable or oppositional but are creatively and ontologically dynamic. This allows us to think through practice and create by thinking in ways that continually redefine present positions (as beings, perspectives, attitudes and so on) as a consequence of impacts from the future.

In the end, we will find that we have always been in-between, never quite belonging to a stable and identifiable position, with beginnings receding and possible ends multiplying and approaching quickly. Our anticipatory stance makes us disjunctive as well as modal: 'or . . . or . . .'; and, 'what if?' This leads us to the places where – like Nietzsche's 'untimely' and Agamben's 'contemporary' – we are not aligned with a present we regard as archaic and that seeing its darkness gives us the courage to act; (Brassett & O'Reilly, 2018).

Philosophy, design and art practices are used by the participants in this session to explore these anticipatory attitudes to notions of necessity (Barron), strategy and love (Brassett) and policy and wallpaper (Kimbell). The moment around which these presentations revolve is creative ontology; this concept will provide the drive for an interrogation of anticipation along the different lines each approach takes.

2. Presentations:

(1) John O'Reilly
Introductory Comments

(2) Nathaniel Barron
Ernst Bloch: on the Necessity of (Conceptual) Creativity
This presentation will consider the nexus which obtains between necessity and creativity as these perennial ideas appear in the work of the 20th century German thinker, Ernst Bloch (1885–1977). By outlining Bloch's innovative approach to teleology, that is, to the traditional idea that process is guided by a pre-determined goal, I show how, for Bloch, any process is born of an anticipation of necessity, the latter of which requires creativity for its existence.

(2) Jamie Brassett
An Ode to Venus. Love, Anticipation and Design
Michel Serres (1977) highlights the value of love when considering creativity via a reading of Roman poet, philosopher and scientist Lucretius's poem *De Rerum Natura*. This poem opens with a dedication to Venus, goddess of love, and Serres makes much of Lucretius's declaration of the importance of love as a driver for the creative production of all things. What might happen, Serres wonders, if we were to value love over war, as Lucretius does when recounting the mythological defeat of Mars by Venus? With strategy being a word of Mars, of war, what might happen to our creative attitude to the future, I wonder, if we were to eschew strategy and embrace love instead?

(3) Lucy Kimbell
Inventive devices and data publics
This presentation uses the lens of inventive research to examine the anticipatory practices associated with contemporary art. It draws on growing interest in sociology in rethinking the relations between research and action (or intervention) using Alfred North Whitehead's concept of invention.

Researchers (such as Estelella, Criado and Marres) have developed accounts of inventive social research that re-articulate the relations between research, representation and intervention including using methods from design and the arts. The concept of inventiveness foregrounds the processual and unfolding nature of research that opens up new possibilities, whose value cannot be assessed by its antecedent frames and purposes. This is used to discuss the *Air Pollution Toile* (Kimbell 2018), a wallpaper that changes over time in response to air pollution. Rather than simply gathering and visualising data, this wallpaper can be seen as an inventive device which exceeds current ways of thinking about air pollution and its impacts. Through its emerging visual language caused by interior air pollution where it is installed, this toile wallpaper anticipates new ways of knowing and understanding air pollution and produces new publics for data about air quality.

3. Participant Affiliations:

Convenor & Session Chair

Dr John O'Reilly
Course Leader, MA Innovation Management
Central Saint Martins, University of the Arts London
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Speakers

Dr Nathaniel Barron
Tutor
Bedford College, UK

Dr Jamie Brassett
Reader in Philosophy, Design & Innovation &
Programme Research Director
Central Saint Martins, University of the Arts London

Professor Lucy Kimbell
Professor, Director of Innovation Insights Hub &
Director of Social Design Institute, University of the Arts London, UK

4. Session Format:

In this session, the chair gives an introductory overview of the key concepts in relation to the conference themes & then participants each giving a 10-minute positioning statement. These will be followed by up to 5 minutes for comments to each other, before opening up to the audience.

5. References:

Agamben, G. (2009) 'What is the Contemporary?' In *What is an Apparatus? and other Essays*. Trans. D. Kishik & S. Pedatella. Stanford, CA: Stanford University Press, pp. 39–54.

Brassett, J. & O'Reilly, J. (2018) 'Retour à 2078: Réflexions sur l'anticipation et le contemporain', *Revue de Prospective et Stratégie* 1, Édition Spéciale 'Voir Loin', (December), pp. 11–22.

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Anticipation 2019, 9-11 October 2019, Oslo

Technique Workshop

Special session on Futures Consciousness

by Sanna Ahvenharju & Matti Minkkinen, Finland Futures Research Centre

Advocating for the benefits of widespread human awareness and thinking of the future has been a generally shared commitment among futures researchers. Future consciousness is one of the terms used for this phenomenon, a concept, which refers to a capability of a person – or an organization – to comprehend possible future developments and their impact to our present situation as well as the impacts of our present choices to the future.

The researchers Ahvenharju, Minkkinen and Lalot have developed over the past few years a five-dimensional model of Futures Consciousness. This Technique Workshop aims to share their experiences in developing the model, applying it in different contexts and developing and using a psychometric measurement test scale to study the phenomena empirically.

The five-dimensional Futures Consciousness model integrates theoretical thinking from futures studies with related psychological literature and relevant research-based psychological constructs. The model consists of the following psychological dimensions, namely, a) Time Perspective, b) Agency Beliefs, c) Openness to Alternatives, d) Systems Perception, and e) Concern for Others. The workshop presentations provide the theoretical underpinnings behind each of the dimensions based on futures research literature, and describe the psychological constructs that can be used to depict these dimensions in human behavior. Also, the presentations describe the development and current experiences of using a psychometric test scale to measure Futures Consciousness. The scale has been developed for empirical research to measure and assess the presence and impacts of Future Consciousness, however, until now there is still little research on the practical applicability of the scale. The participants of the session will be able to test themselves with the Futures Consciousness Scale.

The workshop presentations will include the following topics (altogether max. 60 min.):

- The five-dimensional model of Futures Consciousness – theoretical background and potential applications
- The psychometric scale of Futures Consciousness – development and experiences of its use so far
- The use of the five-dimensional model of Futures Consciousness in policy evaluation
- Using Futures Consciousness to study Finnish elite

In addition to the presentations, the workshop will have ca. 30 min. facilitated discussion on the Futures Consciousness model and scale. The discussion will include the following topics:

1. Does the presented model meet your idea of futures consciousness?
2. Are all the necessary aspects of futures consciousness included or should something be added or left out?
3. Strengths and weaknesses of the scale?
4. What could the model and the scale be used for?

The session will be facilitated and the presentations made by Sanna Ahvenharju and Matti Minkkinen from the Finland Futures Research Centre (FFRC).
There are no specific requirements for the workshop facilities, overhead projector and flipcharts should suffice.

Ahvenharju, Minkkinen and Lalot have held a similar workshop in the Futures Conference in Turku in 2017, at an earlier stage of development of the model of Futures Consciousness. Sanna Ahvenharju is an experienced workshop facilitator, who has facilitated dozens of workshops during her career as a practitioner and as an academic.

The model and scale have been / are being published in the following articles:

- Ahvenharju, S., Lalot, F., Minkkinen, M., & Quiamzade, A. (under review). Bringing psychological perspective to the five dimensions of Futures Consciousness.
- Lalot, F., Ahvenharju, S., Minkkinen, M., & Wensing, E. (under review). Aware of the future? Development and validation of the Futures Consciousness Scale.
- Ahvenharju, S., Minkkinen, M., & Lalot, F. (2018). The five dimensions of futures consciousness, Futures. Https://doi.org/10.1016/j.futures.2018.06.010.

Presentations at conferences

- Ahvenharju, Minkkinen & Lalot (2018) The five dimensions of Futures Consciousness. Poster at the Energizing Futures – Sustainable Development and Energy in Transition conference, Tampere, Finland, 13-14 June 2018.
- Ahvenharju, Minkkinen & Lalot (2018) The five dimensions of Futures Consciousness and how to measure it. Poster at the Future-oriented Technology Analysis (FTA 2018) conference, Brussels, Belgium, 4-5 June 2018.
- Ahvenharju, Sanna (2018) Futures consciousness and its impacts on the individual's readiness to make radical policy choices – study on Finnish regime members. Paper in the Future-oriented Technology Analysis (FTA 2018) conference, Brussels, Belgium, 4-5 June 2018.
- Ahvenharju, Minkkinen & Lalot (2017) The five dimensions of futures consciousness and how to measure them. Special session at the 18th International Futures Conference 'Futures of a Complex World', Turku, Finland, 12-13 June 2017.

Care and hope in lived futures: locating futures through heritage

Empty, instrumental futures (Adam & Groves, 2007; Michael, 2000) are a feature of societies around the world. Hoardings surround new housing developments promising leisure and contentment. Banks and insurers advertise security and protection for those we love. Firms offer shareholders efficiencies and future growth; educational institutions promise economic returns to potential students; computer science start-ups hold out hope of preventative diagnoses and cures for intractable illnesses.

These kinds of offered futures have a number of distinctive characteristics. They are general and mobile, found across the world in societies with different features and histories, unconnected to the particular relations that constitute the context in which they are encountered. They project the existing ends of the present forward, in ways that leave other possible desirable ends unexamined. They are contingent on the economic value attached to them by those groups whose interests they support, and can be replaced by other futures should these be valued more highly. They offer hope and care, but depend on underlying ideas about the future that make this offer impossible to fulfil.

This presentation describes a way of locating (Sandford, 2013) alternative futures in particular contexts, in ways that place what matters and what is cared for at their heart, and which frame times yet to come as 'future presents' rather than 'present futures' (Adam & Groves, 2007). It examines the place of the past in constructing futures, and suggests that the attitudes towards to time and subjectivity underpinning ideas of the past and the future are the root of these instrumental futures. Consequently, it suggests that, for researchers concerned with recognising and constructing futures of hope and care, working with heritage rather than history is more appropriate. But it raises, also, some difficult questions for anticipation researchers working with heritage: whose heritage is being noticed (Hall, 1999)? What future contribution is made by contested, difficult, or unrecognised heritages? And what different kinds of past futures are revealed through working with heritage?

To make this case, the paper draws on a number of related areas of research. First, I recognise some of the ways in which the academic study of history and the future share perspectives, noting their common capacity to work with counter-factuals, to draw on different forms of evidence, to challenge projective and deterministic thinking, and to see causation as produced through complex networks of interacting structures (Briggs, 1978; Bradfield *et al.*, 2016;

Green, 2012; Staley, 2007). Second, I describe the use of history within futures studies and foresight (Bussey *et al*., 2012; Patomäki & Steger, 2010; Wagar, 1993) and the appeal, for futurists attempting to account for all possible causal influences, of working with universalising grand narratives. Third, I describe key aspects of the way history works in society, noting the secular and analytic character of historicisation, and its roots in modern conceptions of knowledge (Hodges, 2010; Nandy, 1995; Nora, 1989; Ranjan, 2017; Rogers, 2015). Fourth, I recognise the common ground between critiques of historicised accounts of the past and instrumental accounts of the future, principally the attempt to excise the subject from the construction of knowledge, and a particular temporality, 'clock time' or Benjamin's "homogeneous, empty time" (Hamacher, 2005; Jennings & Eiland, 2006). Fifth, I draw on work from history, philosophy, and the sociology of time to offer descriptions of "ahistorical thinking" (Jennings & Eiland, 2006; Nandy, 1995; Nora, 1989), "thick presents" and "latent futures" (Adam & Groves, 2007; Poli, 2017) and "lived futures" (Adam & Groves, 2007), alternative ways of imagining time and subjectivity which characterise the relationship between past, present and future not as linear but as "fractal" (Groves, 2017), and which attend to the particular relations between people, times and places through which care emerges as a fundamental constituent of the future. Finally, I review recent work in heritage studies (DeSilvey, 2017; Harrison, 2015, 2016; Harrison *et al.*, 2016; Harvey, 2001; Hobsbawm & Ranger, 1983; Holtorf & Kristensen, 2015; Lowenthal, 1998) to illustrate the ways in which this stance towards time and care is embodied within heritage and heritage practices.

Taken together, these various strands support a central argument that researchers concerned with anticipation ought to be concerned with identifying and elaborating lived, rather than empty futures, and that this will be made possible not by ignoring the past, nor by engaging with the past solely through historical perspectives, but through using heritage as a means of understanding what is cared for by, and what matters to, particular communities and societies. Lived futures depend on an understanding of the world as a continually unfolding set of processes, as does recent work within heritage studies concerned with change and transformation (DeSilvey, 2017; Harrison, 2016; Holtorf & Fairclough, 2013): in such a world of generative structures and processes, the future is never over, being followed by future futures, all likewise embedded within complex and changing causal networks. The future is never finished, in other words, and from this arises the utopian (Levitas, 2013; Siebers, 2012) aspect of hope (Ojala, 2017), which keeps the future open, not in an abstract, instrumental sense, in which the future is uninhabited, separate from our being, and open for conquest, but in the Heideggerean sense (Heidegger, 2010) of a necessary and prior condition for dwelling in

the world. Working through heritage offers researchers the opportunity to recognise past hopes, latent futures, alongside those that sustain us in the present.

Thinking about anticipation through heritage allows researchers to connect with the reflexive, axiological, subjective nature of 'ahistorical' thinking, ensuring that a place is reserved for the authors of lived futures, in contrast to the abstract, empty, unauthored futures of global capital. And it offers researchers concerned with anticipation a practical way of identifying places and communities with which to work, providing a disciplinary frame through which to make visible the priorities and objects of concern that are embedded in such places and communities: thinking with heritage can provide something for researchers to work with, obliging the conversation to face and grapple with circumstances unfolding in real life by engaging with particular futures, rather than the general, off-the-shelf future imaginaries that might otherwise be the focus of discussion. Above all, it offers the possibility of drawing on both anticipation and heritage studies to develop an anticipatory practice concerned less with pasts and futures, and more with meaningful presents.

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Ethics and Choice in Anticipatory Systems

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Extended abstract

When predicted futures influence current action, a system becomes an anticipatory system. The nature of such systems have been studied in great detail in anticipatory system theory. In this paper, we extend anticipatory system theory by asking how such systems could become ethical. Different ethical theories lead to different models of anticipatory systems and make different assumptions concerning the nature of system environment. We show that utilitarian and capability-based models of ethics assume mechanistic and non-complex environments. Dialogical ethics, in contrast, is potentially able to address complex environments and interactions among anticipatory systems. By formalizing key assumptions of ethical theories in the context of anticipatory systems, the present study clarifies assumptions that underpin research on social choice, economics, philosophy of ethics, and responsible design and innovation, opening new lines of research, for example, on ethics of artificial intelligence.

Intelligence requires capability to choose among several alternative actions, and ethics becomes possible only when an actor can choose what it does. Without undetermined choice there is no “free will” or responsibility for action. An intelligent and ethical system, therefore, has to be able to predict consequences of alternative possible actions and evaluate their outcomes. This implies that the system incorporates a subsystem that composes from the observables of its predictive model an indicator that values the alternatives. Furthermore, the resulting valuation has to impact system action. Although, in general, predictions of future states of the world can be entangled with values, in this paper we focus on characteristics of anticipatory systems that have a separate subsystem that values and orders possible futures.

Different types of evaluation subsystems can be associated with different theories of ethics. In this paper, we address three approaches to ethics—utilitarian, capability-based, and dialogical—and outline general characteristics of anticipatory systems that have the related ethical capabilities.

Mathematically the simplest such systems can be associated with classical utilitarian theories in philosophy and economics that argue that maximization of indicators such as happiness, well-being, or “utility” can provide a foundation for ethical theory. In general, these approaches assume that predicted outcomes can be ordered to find optimal values. More generally, modern social choice theories assume that individuals can order possible future states, and that these orderings can be used to develop aggregate measures of social well-being. A fundamental claim in these theories is that individual ethical agents can rank all possible states of the world, that ethical considerations are reflected in these individual rankings and in the functional structure that is used to aggregate individual rankings of social states into collective orderings that reflect desirable futures. This position has been taken, for example, by Dasgupta (2009).

Several leading ethical theorists have argued that individual agents cannot order future states of the world. Utilitarian and neoclassical economics is therefore inherently incapable to take into account ethical considerations. Among others, Sen (2002, 2009), Nussbaum (2000), and Putnam (2002)

have argued that there are no universally valid indicators of utility. According to Sen, the valuation of preferences, including ethical preferences, depends on idiosyncratic individual and cultural situations, and there can be multiple incompatible preferences and meta-preferences. Sen has argued, however, that it is often possible to make partial comparisons between possible choices and rank them.

Research on anticipatory systems suggests that both of these above mentioned highly influential approaches imply that the system environment is mechanistic and cannot contain anticipatory systems or living organisms. As Rosen has shown, anticipatory systems are complex in the sense that their dynamics cannot be captured by a single "most refined" model. An acting anticipatory agent exists in an environment that consists of other anticipatory agents, which are complex in this Rosennean sense. Predictive models of such environments are therefore models of complex systems, and value models of such systems are models of complex models.

We show that utilitarian theories can be realized in anticipatory systems when a function exists that maps the predicted future states of system observables to real numbers. Capability-based models, as promoted by Sen, in turn, require evaluation subsystems that value futures using mathematical structures known as non-total partial orders. When an ethical agent interacts with other anticipatory systems, dialogical models of ethical theories, however, become relevant. We suggests that dialogical ethics as outlined in the partially preserved early writings by Bakhtin, is of specific relevance in complex environments.

Large bodies of extant literature on ethics have focused on normative approaches, starting from virtues, duties, and institutional, economic, and contractual structures that could be labeled as "good," "moral," or "just." In this paper, we turn these traditional ethical debates around, asking what is required from a system that can realize such forms of ethical theory, and what types of environments the resulting anticipatory systems can model. A conceptual and formal study of ethical theories in the context of anticipatory system theory, therefore, has practical implications on how we model, study, design, and realize anticipatory systems.

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Considering the role of responsible anticipation in human flourishing and the capacity to aspire.

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Abstract

The purpose of this paper is explore some of the relationships between anticipation and ethics, especially in relation to responsible actions with regard to sustainable development. In doing so, there is an assumption that sustainability (as in SDGs etc.) depends upon the capacity of individuals and groups to act to protect and transform society.

How then can new knowledge about anticipation and the application of this, increase the capacity of institutions, communities and individuals to frame and act on sustainable futures, which they construct through images, visions, stories, scenarios, models and other representations.

The idea explored here is that anticipation (as well as aspiration and imagination if they are separate and different from anticipation) is a causal mechanism. That is, human's disposition to act on anticipation (aspiration, imagination) can be a cause of change.

Two research questions are raised with respect to education and research

> In what ways may awareness of anticipation and self-modified images of the future, enable more effective change processes for social transformations?
>
> Can the capacity to investigate relevant contexts in depth and to be able to articulate alternative possible futures, empower people to reframe futures in their own terms?

Answers to this may depend on the degree to which actions can be co—ordinated, rather than individualised and on the overall capacity of the collective to aspire to better futures.

The future as cultural fact

Appadurai observes that aspiration is a navigational capacity […] "that allows people to make their way from more proximate needs to more distant aspirational worlds. [This] capacity [is] less developed among poor communities (both rural and urban) because the archive of experiences and stories through which wealthier communities [are] able to build the sinews of the imagination that underlie the capacity to aspire is precisely what the poor lack, this experiential deficit being virtually the hallmark of poverty." (Appadurai 2013, 213)

If, as Appadurai suggest the future as cultural FACT resides in Aspiration, Imagination and Anticipation, what is the role of each and combined in enabling the futures to be shaped by less powerful groups such that their futures are improved?

Emergence approach to social structure and transformation

Theorizing social structure from an emergentist perspective provides an explanation of structural change – of changes in norms over time –as occurring through human agency.

Modal realism takes the realist position that entities have disposition, i.e. causal powers that are transcendental from the particular actual world context in which they are observed as being situated. Modal realism is epistemically consistent with alternative futures, a world of possibilities, where there are other possibilities than what exists now, and so this world could be different".

{Bhaskar, 2010 #1771, p66}. For Bhaskar, modal realism is indispensable for concrete utopianism and for human freedom.

Anticipation of social value

Seligman et al {Seligman, 2016 #1745} contribute to understanding relations between prospection, emergence and social norms. One of their propositions is this: 'what if morality is not evaluation of the present action, but the prediction of character and its thrust into the future?' (p. x). Morality and social norms, as with laws and technologies add structure to the future, making otherwise unavailable actions and outcomes possible {Railton, 2016 #1769, p22}. A causal force in this, they imply, is the idea of a future benefit or costs which regulates or motivates action. The drive towards action is thus anticipatory. Railton argues that the 'system biology' with the features necessary for making and acting on moral judgement is the affective system – human emotion. This is the system capable of representing and comparing the values at stake and allocating efforts, such that our values serve to 'orient and move us'. The affective system involves 'attention, perception, memory, inference and action-readiness in a coordinated way' {Railton, 2016 #1769, p25}.

We need to see this reasoning in the context of society, rather than individuals, as relational knowledge and action are more likely to bring about sustainable structural changes in society. Social institutions, suggests Elder-Vass, are not entities, but properties of social groups and that 'each member of the group that enacts normative practices holds a normative belief endorsing the practice' {Elder-Vass, 2008 #1460, p290}. Such beliefs of the future are, suggests Baumeister, a 'product of collective imagination and agreement.

Power arises from the assertion and maintenance of particular norms. Normativity and ethical choice are culturally political phenomena. We suggest that the anticipation of greater value arising from emergent practices or properties tends towards a destabilizing of the norm, and transforming to another stabilized state. The anticipation of reduced value, as threats or loss, leads to action that conserve stable practices. Anticipation has causal power in the politics of ethical choice because it is a mode of action that makes judgements.

The ethics of possibility

How might anticipatory work develop the capacity to aspire? Futures education stresses human agency as a form of power, and encourages the imagination of desired futures. It can be an example of what Appadurai calls the ethics of possibility, which are "ways of thinking, feeling and acting that increase the horizon of hope, that expand the field of imagination, that produce greater equity in […] the capacity to aspire". There is, he suggests, a tension between the ethics of possibility and the ethics of probability. The ethics of probability are ways of thinking, feeling and acting that flow out of "an avalanche of numbers" […] diagnosis, counting and accounting […] profiting from disaster, corruption, insecurity, "as a new branch of capitalist speculation" {Appadurai, 2013 #1514, p295}.

Perhaps our educational and research orientation in this respect should lead to the empowerment to exercise "voice", regularly and effectively so as to enhance the capacity to aspire draw on the habit of imagining *possibilities,* rather giving in to the *probabilities* of externally imposed change. Imagining possible futures, concrete in their immediacy as well as expansive in their long-term horizons, inevitably thrives on communicative practices that extend one's own cultural horizons. Appadurai (2013, 213)

Anticipation 2019

Design by Anticipation?

Collective Scenarios: rehearsing, predicting, and speculating on climate futures

Renata Tyszczuk

Abstract

The paper introduces the *Collective Scenarios* project, which places scenarios of climate change in their historical, institutional and cultural contexts. It will discuss research into the scenario mode at the root of the Anthropocene discourse and the potential of improvisational modes of constructing collective futures. It will thus question the possibilities for more collective modes of **design by anticipation**.

In the context of a future perceived to be in crisis, the paper will explore scenarios as a mode of storytelling for 'troubled times' (Haraway, 2016), that acknowledges the 'collective experiments' of climate change (Latour, 2003). It will bind together strands from anticipation studies (Anderson, 2010; Poli 2017), the relationship between speculative design thinking (eg. Dunne & Raby 2013) and participative modes of action on and engagement in urban futures (eg. Blundell-Jones, Petrescu, & Till, 2005). It will also acknowledge and respond to some of the particularities of the cultural politics of climate change – above all shifting and contested responsibilities and vulnerabilities across space and time (Hulme, 2017; Smith 2016).

Scenarios are proposed as a 'rehearsal space' for more collective modes of acting on and thinking about uncertain futures (Tyszczuk & Smith, 2018). The paper will describe a series of interdisciplinary workshops and design projects that engaged with the scenario mode, of **design by anticipation**. Collaborative scenario–making was explored as a way of opening up civic space in the face of the high levels of uncertainty, global risks and collective action problems associated with climate change, unknown urban futures and societal transformations. The paper suggests that thinking and practicing the future otherwise involves considering responses and responsibilities in the present day as well as reconfiguring modes of imagining the future. This also provokes a questioning of **anticipation by design.** Ultimately the paper considers the possibilities for *collective scenarios* that can support a more vibrant and imaginative sense of how societies can be prepared for uncertain futures.

Key words
Scenarios, climate futures, improvisation, speculative design fictions, collective design practices

Scenarios are a common method for getting a better grip on the future, particularly when the future is understood to be in crisis, malfunctioning or uncertain. Scenario thinking has long been a prominent strand in climate science and policy, where it draws on predictive scientific knowledge, based on computer models and simulations to present potential future climate risks. The UN's Intergovernmental Panel for Climate Change (IPCC) has worked through scenarios of up to 6 degrees of climate change by 2100: a world where most of the planetary surface is uninhabitable, the oceans have stratified and mass species extinctions have taken place. The paper thus asks, 'what are the prospects for imagining alternative futures in conditions of planetary unsettlement'? In other words, how can we anticipate, through design practices, ways of inhabiting the Anthropocene otherwise? (Tyszczuk, 2017)

The paper will engage with the history of scenarios, their current use in climate research, and the potential of collective and speculative practices of scenario-making for shaping uncertain futures. It will chart the use of the term 'scenarios' from its origins in the improvisational practices of *commedia del arte* theatre, through the screenplays of the film industry, Cold War strategies, environmental systems thinking, and business planning, in the 1940s to the 1980s. It will identify the continuity with scenario techniques in the present day, for example Shell Scenarios, the EU Energy 'Roadmap 2050', the work of the UNFCCC and IPCC, as well as speculative design practices and projects for urban futures. What emerges in this history is an account of diverse attempts to comprehend and deal with situations with-out precedent. As 'anticipatory practices', scenarios are enrolled in varying ways of calculating, imagining and performing uncertain futures, in often disputed modes of 'pre-emption, prefiguration, and preparedness' (Anderson, 2010). Scenario practices thus contribute to processes through which the present is transformed, intervened in and ultimately governed in the name of the future. Scenarios, cautionary tales included, understood as stories of change are imaginative responses to unknowable climate-changed futures.

The *Collective Scenarios* project is exploring more collective and improvisational responses to climate futures as a way of working through the 'tension between the assumed predictability of the climatic future and the necessary openness and malleability of the social future' (Hulme, 2010). Scenarios are proposed here as a mode of storytelling for the present, and in Haraway's terms, of 'staying with the trouble' (2016). The framing of the project as 'collective scenarios' draws on Bruno Latour's observation that in the context of climate change, 'we are all engaged in a set of collective experiments' in the 'confusing atmosphere of a whole culture' (2003).

A pilot case study for *Collective Scenarios* research was the Culture and Climate Change: Scenarios project. Participants in this interdisciplinary project engaged with a range of approaches to climate scenarios – including the models of research scientists, the projections of urban planners, the forecasts of policy makers and the speculative design fictions of artists

and designers. The experimental and co-productive elements of the project ranged from collaborative scenario making, prototyping, game-playing and ad-hoc performance in workshops with climate researchers, through urban design projects, academic seminars and creative writing, to interactive documentary, film and theatre work. It explored the possibilities for design practices to test imaginative tools for 'world making' (Le Guin), develop collective understandings of 'matters of care' (Puig de la BellaCasa, 2017), acknowledge indigenous modes of being with the Earth (Tsing, 2015) as well as imagine ways of inhabiting futures through 'speculative design fictions' (Dunne & Raby, 2013). The paper will describe the different ways the project engaged with the scenario mode, of **design by anticipation,** and will discuss the potential of scenarios of climate-changed futures as a shared and necessarily contested cultural endeavor.

The *Collective Scenarios* project is exploring the ways in which society's emphasis on uncertain climate-changed futures shapes and is shaped by specific orientations to and perceptions of the present. It thus involves a way of questioning **anticipation by design.** Moreover, it proposes scenarios as a cultural form that can provide space for collective, improvisational and reflexive modes of acting on, thinking about, designing for, and inhabiting uncertain futures.

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New standpoints for new visions
-a call for a comprehensive anticipatory design science-

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Abstract:
Resilient and long term sustainable systems are typically characterized by cooperation and diversity. However, for many centuries the western cultural sphere, with its initial European epicenter, has worked in the complete opposite direction (Hickel, 2018). The hallmarks of this direction have rather been expansion, exploitation, competition and domination; today facilitated by the global implementation of an economical monoculture with infinite exponential growth as its primary and required strategy for survival. In the last few decades it has become obvious that this 'road of development' has become increasingly 'bumpy' and unpredictable. In fact, it even seems like we are now accelerating on this espoused road towards an absolute, figuratively and literally, dead end (Bendell, 2018)

Increased uncertainties and a developmental acceleration of much – albeit not everything - have called for a more structured way to be prepared. Consequently, big multinational companies pioneered what we now know as Scenario Building and Futures Studies. Their focus was on *probabilities* for different possible outcomes along a 'road of development' that was never seriously questioned, per se. This single lane, one way 'road of development' became a strong metaphor that normalized concepts like developed vs. developing countries, and left the latter with strategies like catching up and leapfrogging. By that it also normalized inherently unsustainable mindsets and a role-model that has promoted a 'race to the bottom' that in the not too long time-frame might jeopardize our very existence and presently makes the divide between those who have and those who haven't larger each day (Ibid.).

Design professions have in no way been an innocent player in this 'race' (Fry, 2009). On the contrary, design has often been used as a hired 'driver', given the mission to find new opportunities within the frames of an assumed infinite affluence. A situation that for example called for creative ways to develop consumers wants—rather than designing for their needs—and by that secure the kind of economic growth the system rather than the consumer needs. However, inherent in design, there are also some potentially more noble and still quite untapped characteristics. They primarily include two things; firstly, *the ability to envision future alternatives to the seemingly most likely outcomes* and secondly, *taking a more holistic approach by consciously changing standpoints and exploring the issue at hand from many different stakeholders' views*. Unfortunately, in mainstream design today, the 'future' typically becomes the next product release and the most important stakeholders the present local users and shareholders. Arguably a too narrow view if one wants to secure

livelihood in either future time or for spatially distant 'users'. Nevertheless, at the same time – and of profound significance when talking about anticipation – are design's cores of inherent mind- and toolsets. Or in other words, the training to creatively look for alternative approaches from new standpoints and finally being able to convey them in a palpable manner, seems today more required than ever (Gaziulusoy & Ryan, 2017).

When asked what his profession was Buckminster Fuller (1970) answered that he been engaged in what he called "comprehensive anticipatory design science". This paper argues that it's now long overdue for design disciplines to follow suit and to realize that design's core competences probably are much more urgently needed today than we, and others, so far have recognized. By describing experiences from a global collaboration between different design institutions in both Norway and the so called 'Global South", this paper explores how this can be best accomplished in practice. Questions asked and tentatively answered typically includes design disciplines paired with the challenge of climate change joined with topics like: How can the present defining standpoint be decolonized? How can radical and substantial change be implemented? (O'Brien, 2012). How can alternatives to the present regime be made think- and debate-able? How can design develop its present competences and tools to be more fit for the urgent and radical changes required?

Finally, as much as this also is an intra-disciplinary reflection it's still primarily a position statement that calls out for the kind of inter-disciplinary cooperation huge systemic challenges like climate change, global warming and possible social collapses seems to require.

Keywords: Design, Foresight, Anticipation, Radical Change, Decolonization, Global Network and Climate Change

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The Value of Design Approaches in the Future of Memory. How digital artefacts can improve methodologies and tools for activating collective memories in urban environments

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Keywords: design cultures - collective memory - data - interaction design - places

Discussion

The topic of cultural memory and its relation to spaces, places and environments (Halbwachs, 1950; Nora, 1984; Gallagher & Greenblatt, 2000; Ricoeur, 2004) is undergoing a cultural transformation in connection with the use of new technologies. A vast body of publications has recently reflected upon the opportunities offered by "digital memories"; the intangible dimension of "memory"; the possible effects of the "computer bomb" (Flusser, 1990; Bisogno, 1995; Virilio, 1998; Rossi, 2001; Bagnara, 2006). In his essay *Memory and Knowledge*, Tomás Maldonado supports the need to open new directions in research on the relationship between memory and digital media, between neuroscience and technological avant-garde, starting from the assumption that "if it is true […] that the advent of *Homo scribens* contributed in many respects to change the memory of *Homo oralis*, it is more than legitimate to conjecture that, with the advent of *Homo digitalis*, the same can happen to the memory of *Homo scribens*" (Maldonado, 2005, p. 10).
The social function of collective memory is therefore more relevant than ever in design processes (Branzi, 2006; Bannon, 2006; Celaschi, 2016; Zannoni, 2018).

At the same time, a new understanding of the relationships between temporalities and people, in an age infused with memory and past, has been central to a number of studies (Kemp & Adam, 2019). As Arjun Appadurai has suggested "culture is a dialogue between aspirations and sedimented traditions"; a statement that implies an, often, difficult intertwinement between past, present and future or, in other words, between culture and development. "By bridging the future back in, by looking at aspirations as cultural capacities, we are surely in a better position to understand how people actually navigate their social spaces" (Appadurai, 2013, p. 195). It is thus evident that one of the key challenges of our time is understanding how to study and create futures we truly care about and which are more social (Adam & Groves, 2007; Urry, 2016).
Again, design processes can play an active role in this context. The anticipatory function of design, today, is represented by a prevalently ethical function, linked to the form of processes rather than to the form of products (Celi & Morrison, 2017). As Flaviano Celaschi writes, design "can contribute to problem-finding, taking action when people are no longer able to ask questions before seeking answers (Augé 2012). While science still tries to represent the world as it is, design can describe how the world could be

(Ratti and Claudel 2016), a sort of ‘what if?’ that is typical for anticipators” (Celaschi et al., 2017, p. 5).

Abstract and synthesis of the main contents of the paper

Starting from these assumptions, the article illustrates how digital data could generate cultural, social and economic values for territories and their inhabitants and give shape to possible forms of collective memories.

The growing trend of mobile devices equipped with GPS has triggered an immense proliferation of geo-referenced data, digitally connected to the places and spaces of our real lives. This multitude of geolocalized data shared by people is forming a new layer of digital information: it represents an invisible reality, but at the same time is strongly related to the places where we live. This data has progressively become a substrate of connections, a representation of recursive behaviours that can allow a predictive reading of people’s behaviour in urban spaces (Ashbrook & Starner, 2003; Manovich, 2009; Hochman & Schwartz, 2012). The first studies by Carlo Ratti on the analysis of GSM cells in urban spaces (2006) and the experiments of Lev Manovich in the 2013 “Phototrails” project, show how the territory can be observed and listened to in different ways. It is possible to argue that this abundance of information is progressively becoming part of our real world (Zannoni, 2018).

What is the space for design in this process? Can it play an anticipatory role in the development of our urban environments? Is “geo-media” (Hochman & Manovich, 2013) the new field of study for the future of memory?

In order to answer to this question, the paper synthetises three possible approaches (generative, aggregative, informative) as expressions of a growing sensibility towards design-driven forms, processes and tools, that can activate the collective memory of places. These approaches emerge from in-depth field research about cases of international experimentations based on new design scenarios that explore the possibilities offered by the digital dimension of spatial information. Independently of whether the results of these projects are physical or digital interfaces, the designers need to consider how people could really use this information and how this data can become of value to the growth and development of territories.

In their conclusions, the authors will reflect upon the possible impact of these approaches. The historical-critical, sociological, philosophical and anthropological studies on collective memory and thus on the future of our past, can benefit, on the one hand, from the value of computer data to build new relationships, and, on the other hand, from understanding a series of design experiments which can demonstrate the potential of design to generate new cultural values. By aggregating knowledge, mediating between material and immaterial aspects, interfacing with users, designers will be asked to anticipate digital artefacts that allow the stratification of collective memory as a fundamental component of our collective future.

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The “Graphic Coding of Intentions” Method

According to McLuhan, the era of digital media has given start to a world where space and time are overcome. In a simultaneous world, everything resonates with everything else, enabling thinking about everything at once (McLuhan, 1964). Digital media transforms time, dividing it into temporalities that present their own version of the present (Metahaven, 2018, p.10). Different times overlap, and one perceives them as simultaneous rather than a flow. Consequently, the future is no longer something that is going to happen, it’s already here; we live in it, although it remains hidden. We experience the future as a deep involvement with the present moment. How can this perception be translated into a language that we and others understand? It’s a very important question for designers, because they are able to capture and coat the cultural and technological changes that remain invisible to most people. Designer is an artist who, according to McLuhan, can capture the hidden meaning of her or his actions and of new knowledge as they happen and coat and present these intuitions in the models and “navigation maps” of the future (McLuhan, 1964, p. 65).

Creation of a product (whether an idea, a technology, an event, an object, etc.) that anticipates the future requires a certain conceptual framework. A product design is usually based on a concept that becomes a starting point and a criterion for evaluating creative solutions. Finding a concept requires some analysis of the background data, and then the concept leads designer to a foreseeable and expected outcome. However, this linear logic of moving from a past experience to a new product won’t work if the creator’s task is to register and coat her or his own perception of the “future that’s happening now”. In such a situation, the product must at be to a certain degree unexpected for its creator. Paradoxically, designer should give a form to something that she or he doesn’t yet understand and then clarify the new meaning within the conceptual framework of the future.

In this case, the conceptual framework must be a space of variants similar to Deleuze and Guattari’s “plane of immanence”, where the concept creates itself and emerges as the “clots of meaning” (Deleuze and Guattari, 1996). The conceptual framework set as a “plane of immanence” is an intuitive understanding where meanings emerge partly deliberately, partly spontaneously.

The conceptual framework understood in this way must meet the following requirements:

1. It must be an open system without a fixed starting point or a predetermined outcome.

2. It must create a range of variants (“a garden of forking paths”) and thus activate non-linear thinking.

3. It must set the direction of thinking and the points of verification in the way that confuses thoughts rather than arranging and calls for imagination and improvisation.

A starting point in this case would be intention, and not concept. Intention is a specific mode of meanings that are not linked to each other but flow from one to another, constantly changing and creating new overtones. Any attempt to analyze and explain intention results is an irretrievable

loss of meaning. To keep its semantic substance intact, intention should be put into a specially constructed form. Designing such a form can be called translation.

Translation of intentions into form (visual, verbal, etc.) is particularly difficult because intentions don't have clear meaning, they are a "nebula", a plasmatic substance that is only supposed to lead to meaning. The position of designer is close to that of the translator of poetry. We can find a remarkable method of such translation in Milorad Pavic's "Dictionary of the Khazars": Tibbon, an ancient translator of the Bible, "asked someone to read the translation aloud while walking away further and further while he stayed put and listened <…> and Tibbon would make corrections based on the impressions he had derived from this reading walk." (Pavic, 1984)

Applying Tibbon's principles "while walking" and "aloud" gives a key to the transforming of spontaneous, uncontrolled energy of the intentions into signifying ensembles that activate the process of generating meaning rather than fixate it.

My method of developing conceptual framework called "graphic coding of intentions" is used on Tibbon's principles.

This method includes the following operations:

1_ Drift: emotional immersing into the intention.

2_ Text: creating a text where intentions would be articulated in a free manner.

3_ "Mental landscape": creating a graphic composition that would express certain meanings and simultaneously make their existence possible.

4_ Triggers: extracting from the text the key codes that help replay the general meaning of the intentions in semantic constructions.

5_ Mapping: placement of triggers into a "mental landscape".

This kind of the conceptual framework is not a logical construction, it's flexible, unpredictable in its development, and reacts to changes. At first sight, the presented method may seem close to a speculative approach (Dunne and Raby, 2013) with its appeal to an experimental and free vision of the world, but that's not right. The method of "graphic coding of intentions" appeals not to fantasy, but to a rational implementation of intuitive knowledge; its goal is not to construct imaginary objects or environments, but to recognize the real world.
This method was used by graduate students for their master's projects focused on the representation of scientific data in virtual spaces (online education platforms). The method has also been used in the development of interactive web-applications for the research of multimodal texts (Cinema 1: The Movement Image by Deleuze). Application of the **"**graphic coding of intentions" method helps designers overcome the inertial linearity of thinking and employed "fluttering" predicative mind. This method developed their skills in creating the conceptual framework as a self-organizing system open to signification and resignification.

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MAKING ANTICIPATIONS

Introduction

As a field of study, anticipation is growing within diverse fields – from economy studies which include fictions in its economic forecasts (Beckert, 2013), to a broader call for research frameworks that focus on *what is to become,* as opposed to current emphasis on *what is* (Gergen, 2015). The field takes on from Future Studies' emphasis on strategic foresight, which may be directed towards new policy, and consequently very distant from concrete visions. Anticipation, however, is informed by ideas about the future (Poli, 2017). More specifically, anticipation is grounded in the present, and acted out by outlooks of near and distant future scenarios. What is needed for the growing field of anticipation studies, however, are new tools and techniques for imagining actual futures as well how future scenarios may look like. For this it is relevant to talk about design inquiry, as it is broadly concerned with materialising and constituting the very things that don't yet exist (Celi & Morrison, 2017). Relevant modes of future-oriented design inquiry might be speculative (Auger, 2013; Dunne & Raby, 2013) or critical in their approach to practice (Ratto, 2011). Furthermore, the long-term nature of anticipatory activity challenges the need for design inquiry to redefine problem definitions, as concrete markets or appropriate technologies may not yet exist. In doing so, it requires an *advanced* design perspective which adopt new modes of practice and investigation (Celaschi & Celi, 2015).

Making future scenarios for Additive Manufacturing

In this paper I outline an approach which directs product design inquiry towards dialogue with anticipatory and imaginary scenarios surrounding Additive Manufacturing (AM). This is a field of technical expertise which in lay terms speaks towards new modes of personal consumption. As tools such as 3D printers may be located closer to an end-user, it blurs current distinctions between production and consumption. Furthermore, this consumption-production continuum may have both social (Ratto & Ree, 2012; Urry, 2016) as well as a technical implications (Doubrovski, 2016; Killi, 2013). For example, Urry (2016) outlines four sets of future scenarios for AM (labelled *Print-it-yourself*, *I print therefore I am*, *Sharevana & Photoshop*) which range between a widespread personal ownership of 3D printers, to the diffusion of 3D printing services leading to onshoring of manufacturing. Similar visions are outlined in Killi's (2013) de-centralised production model for AM which ranges between individualised-, micro-, and licence production.

These overarching scenarios and models are useful as a starting point for anticipating on AM. In order to unpack future uses, however, will argue that there is a need to understand such scenarios more intimately through linking them to specific contexts of use. Where is the use of AM located? Which of the many technical characteristics of AM are utilised? What is AM perceived to replace? Which cultural features does an AM design build on from? These are some questions which may be addressed through designerly activities where relevant tools and techniques are exercised. In other words, I will discuss *making* as an activity for employing and envisioning with AM tools that are currently available. Specifically, making is here seen as mode of constructing both concepts and mock-ups using technical AM tools, as well as making expert knowledge around a practice (Lambert & Speed, 2017).

Coming out of such a practice-based emphasis, I argue that the anticipation of emergent technologies such as AM need to be supported by maker-centric modes of inquiry. These include DIY engagement as well as designerly imagination, experimentation and analysis. Key methodological concerns are also addressed in this paper. These include applying qualitative product design methods such as experiential prototyping, probing and envisioning for building sociotechnical knowledge (Ratto, 2011). This emphasis is necessary to build in order to advance the emergent abilities and capabilities of the AM process, which may further guide designs that are both socially and environmentally responsible.

Technological critique and reflection

In parallel to the transformation of knowledge from experience, I stress the need to orient making towards technological reflection and critique (Feng & Feenberg, 2008). This is needed to confront both reductionist views on technological advancement. This is arguably present in contemporary views on AM such as the 'third industrial revolution' (Troxler, 2014). Here, AM is assigned roles based on linear views of its present capacities. The implication of the views introduced in this paper is the need to advance an approach to technological speculation which builds knowledge around key points of analysis. These include anticipated users, alternative modes of fabrication, technical agency and envisioned contexts. I link this analysis to a technological design frame which compliments existing frameworks found in science and technology studies (Bijker, 1997; Leonardi, 2012), but with an emphasis on design.

What I am offering in this paper is a model which relates open-ended and speculative inquiry to modes of analysis which contemplate on technical, cultural and social aspects of AM. In doing so it positions design inquiry towards a mode of critical envisioning which I argue is needed within anticipatory studies of technology. The overlying motivation to the offered approach is to complement existing research cultures that are driven by the investigation of hypotheses under controlled conditions. I argue there is a renewed need for methods which embrace serendipity and impulsivity, as opposed to methods merely being a tool for academic validation.

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Generating new futures through collaborative support networks: reflecting on inclusion, awareness and sustainability (submission 30)

Laurence Habib, Flavio Mesquita da Silva, Sergej van Middendorp, and Frederick Steier

Collaborative support networks are increasingly used to support the inclusion of otherwise marginal, marginalized or less visible groups in structures such as schools, institutions of higher education, and political entities (see, e.g. Camarinha-Mator & Afsarmanesh, 2005). Their form and scale can vary from communities of practice (Wenger, 2000) to global action networks (Waddell, 2010). Participating in such networks can also increase awareness for interpersonal, interdisciplinary, and interorganizational collaboration in differing contexts. One of the inherent features of such networks is that they bring together individuals with various types of experience, whereby the value of that experience for the network is not only based on their formal qualifications such as academic merit or time spent in a job, but also on the quality of their reflection on that experience and its potential to enrich the whole. As catalysts for inclusion and as awareness raisers for the power of network thinking, collaborative support networks may become an essential element of future societal structures. This in turn may help societies to adapt and sustain themselves gracefully in the face of major issues, like climate change, which seems to us one of the most challenging anticipated environmental changes coming at us in our history on earth. The form and shape of collaborative support networks can vary tremendously, and can include non-traditional characteristics like humor and playfulness. Such characteristics may be helpful in the adaptations collaborative support networks may help make in societal structures. We hope to highlight some of these non-traditional qualities in our session.

In this session, we will use the concept of generative metaphors from Don Schön (1979). We will give a few examples of generative metaphors from our respective experience and background. We will reflect on how metaphors can enrich the outcomes of collaborative support networks and catalyze new futures. As they combine qualities that pertain to both the realm of the poetic and the realm of logic (as suggested in Bateson & Bateson (1987)), metaphors may have an emancipatory and empowerment-building quality that can further dialogue in unanticipated and creative ways. We will also reflect on Mary Catherine Bateson (1991)'s idea of generating "our own metaphor" and discuss the meaning of the collective "we/our" when building metaphors. In doing so, we will explore the role of metaphors in comprehending the future as "a cultural fact" (as suggested in Appadurai (2015)) and providing anticipation with an agency for change (as outlined in Celi & Morrison (2017)). In this sense, we aim to explore anticipation as a constructivist and collaborative endeavour that allows for what Patokorpi & Ahvenainen (2009) refer to as "abduction", i.e. a method between induction and deduction, that connects basic research with applied research. In particular, we will feature an abductive approach (Bateson, 1979, Celi & Morrison, 2017) that invites connections across domains, relying on pattern, metaphor and double/multiple description to foster emergent futures. We will do that among ourselves and also with all present in the session itself, as we try to have the process of our session parallel the content on which our session is based.

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Note: the authors will also have curated session on the same theme. The curated session is titled: “Collaborative support networks as generative of new futures: using world café and other dialogic methods to further inclusion, awareness and sustainability” and has been given the number 25 in Easy Chair.

Dialogue session

Monica di Ruvo

Somewhere in-between design studies and craft practice.

Abstract

A research project in the field of South African craft and design offers an opportunity to respond to and with the theme of means and methods for *making-with* the future. A narrative cartography including images and quotations is used to guide a non-linear and multi-perspectival view of situated, generative activities in response to threats and challenges experienced by South African craft practitioners operating in globalised digital economies. In framing this conversation, inspiration is taken from Haraway (2016) who looks not to the past for "reconciliation or restoration" but to a present "becoming-with each other in "response-ability", in anticipation of a "still possible recuperation" (2016:10). Findings indicate that there are touchpoints between craft practice, design studies and African philosophy that could anticipate alternative, resilient economic models for South African craft enterprises. Findings from the research are discussed and recommendations are made-with questions regarding nomadic and care-full approaches to sustainable craft futures.

Keywords: South African craft, resilient, design, nomadic

Dr. Linda Groff, Anticipating Earth Crises in the Anthropocene Age: Alternative Future Scenarios and an Urgent Call to Action

ABSTRACT

This session presents a big picture look at the many crises currently facing the Earth (Part I); proposed solutions (Part II); how Peace with the Earth fits within the broader context of holistic, evolving aspects of peace (Part III); and alternative future scenarios based on how seriously humanity addresses these challenges, concluding with an urgent call to action, given the accelerating severity of climate change (Part IV); followed by audience dialogue on urgency of the issues, their interdependence, & importance of individual, group, & national commitments to policies and actions that can make a difference.

Part I, *Earth Crises* include: advent of the Anthropocene Age, characterized by human dominance of Earth; population explosion in a world of finite world resources; water quality issues; dangers of global warming and climate change; a needed shift from non-renewable to renewable energy sources; and threats to biodiversity and the Sixth Mass Extinction of Species.

Part II, *Possible Solutions* include: a call to international, governmental, community, interfaith, & individual action in support of: the UN Oct. 2018 urgent Climate Report; the Paris Climate Agreement of Dec. 2015; 17 UN Sustainable Development Goals for 2015-2030, following 8 UN Development Goals for 2000-2015; a shift to green technologies & lifestyles; a needed shift to dynamic, interdependent, complex, whole systems thinking; and Eco-Spirituality and Sacred Activism honoring Earth and life as sacred, and calling for human responsibility to be caretakers of Earth (our life support system) and other species .

Part III, *Peace with the Earth as Part of a Holistic, Evolving View of Peace for the 21st Century*: looks at Peace with the Earth, or Gaia Peace—of humans with the Earth and other species, as one of seven evolving aspects of "what is peace" from the Peace Studies Field, with all aspects of peace building on each other and collectively creating a holistic, integrative view of peace for the 21st century, with important contributions from Western, Eastern, and Indigenous cultures and civilizations.

Part IV*, Alternative Future Scenarios for an Earth in Crisis:* based on whether countries, organizations, and humans decide to follow the above proposed solutions seriously (best case), only partially (mixed, but worsening case over time), or reject these solutions (worse case), concluding with an urgent call for action, given the accelerating severity of climate change and other ecological issues.

Part V: Dialogue on urgency of issues, policies each person present can commit to and seek to implement in their lives. Sharing of actions by different people on different system levels to inspire further actions by others on what works and can make a difference. Suggested organizations to connect with in one's own community. Importance of systems thinking to understand

interdependence of all these issues, & importance of commitment to actions that can make a difference.

More Detailed Outline:

INTRODUCTION: THE EARTH IS IN CRISIS: Introduction and overview of article.

PART I: CURRENT CRISES FACING PLANET EARTH
Introduction
(1) The Anthropocene Era: A New Geological Era Characterized by Human Dominance of the Earth
(2) Population Explosion: Finite World Resources, and the Tragedy of the Commons
Global Population Growth Over Time
R. Buckminster Fuller and an "Eternally Regenerative Universe"
(3) Water Quality Issues Hindering Global Development and Health
(4) Dangers of Global Warming and Climate Change
(5) A Needed Shift from Non-Renewable to Renewable Energy Sources
(6) Threats to Biodiversity and the Sixth Mass Extinction of Species
Summary Conclusions on Current Crises Confronting the World

PART II: POSSIBLE SOLUTIONS FOR CURRENT CRISES FACING THE EARTH
Introduction
(7) A Call for Community, Governmental, and Interfaith Action
(8) The UN's 17 Sustainable Development Goals for 2015-2030
(9) The UN's Earlier Millennium Development Goals for 2000-2015
(10) The Paris Climate Change Agreement, December 12, 2015
(11) The UN Intergovernmental Panel on Climate Change (IPCC)—New Report, October 8, 2018
(12) Jan. 2019 Report on the Accelerating Rate of Climate Change, Calling for Urgent Change
(13) Green Technologies and Lifestyles, and a Proposed Green New Deal in the U.S.
(14) A Needed Shift to Dynamic, Interdependent, Complex, Whole Systems Thinking and Worldviews
(15) Need to Reintegrate the Importance of the Female Principle with the Male Principle—to Stress Interdependent Thinking and Worldviews
(16) Eco-Spirituality and Sacred Activism in Support of the Earth, with Humans as Caretakers of Earth
(17) Support for Local Ecological Organizations and Efforts in One's Own Community
Summary Conclusions on Possible Solutions for Dealing with an Earth in Crisis

PART III: PUTTING PEACE WITH THE EARTH WITHIN THE BROADER CONTEXT OF HOLISTIC, EVOLVING ASPECTS OF PEACE FOR THE 21ST CENTURY

Introduction

Peace with the Earth, or Gaia Peace—of humans with the Earth and other species, and the need for humans to be caretakers of Earth.

Peace with the Earth as an Integral Aspect of Seven Holistic, Evolving Aspects of Peace for the 21st Century. See Fig. 1

Western, Eastern and Indigenous Contributions to a Holistic, Integrative View of Peace: See Fig. 2

Summary Conclusions

PART IV: ALTERNATIVE FUTURE SCENARIOS FOR AN EARTH IN CRISIS, AND AN URGENT CALL TO ACTION

Introduction

* *Best Case Scenario*: humans heed the call and accept the urgency of the Issues of climate change and an Earth in crisis. They proceed to seriously implement policies under suggested solutions in Part II, requiring real changes in lifestyles and worldviews to support such efforts.

* *Worst Case Scenario:* humans fail to respond to climate change and an Earth in crisis, guaranteeing failure and ensuring a worsening future for humanity & other species, with more extremes of climate change, more endangered species, dangers to coastal communities and the mass migration of people, with enormous political and economic implications for disruption.

* *Mixed Case or Most Probable Case Scenario:* humans respond to some issues or half-heartedly to the many issues facing the Earth today, ensuring a worsening situation for Earth, other species, and humanity over time, given the accelerating urgency of Earth issues outlined in recent reports. Periodic catastrophes may wake people up to the urgency of the situation, but actions then may be too late to avert various disasters.

* *Conclusion: An Urgent Cal to Action.*

PART V: Dialogue on urgency of issues, policies each person present can commit to and seek to implement in their lives. Sharing of actions by different people on different system levels to inspre further actions by others on what works and can make a difference. Suggested organizations to connect with in one's own community. Importance of systems thinking to understand interdependence of all these issues. Seeing the Earth and life as sacred.

KEYWORDS:

- Earth Crises & Proposed Policies
- Eco-Civilizations
- Eco-Spirituality
- Peace with Earth as Part of a Holistic View of Peace
- Best Case, Worst Case, Mixed Case Earth Scenarios

- Sharing Action Steps and Commitments

FORMAT: DIALOGUE Session with Powerpoint.
Could also provide paper.

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Systems + Futures Thinking + Theory = A Generative Dialogue

60 minute dialogue session
Peter Jones, OCAD University, Strategic Foresight & Innovation

A dialogue is offered to Anticipation to delve and discern the interplay and influence of systems thinking, its theory and methods in futures practices. A generative dialogue is a conversation style wherein all participants are enjoined to contribute to a shared discourse, where the potential for co-creating new insights and positions is encouraged in facilitation. The intention of the dialogue is to envision a possible research agenda through identifying opportunities for development of relevant systemic (social, ecological, sociotechnical) integrations and influences in anticipation work. A central purpose is to construct a shared understanding and (following the conference) a visual mapping of our conception of relationships between concepts across the fields.

Anticipation 2019 provides for a rich variety of trans/disciplines and informed views among participants to discuss the relevance of systems theory and methods to the emerging anticipation discourses. In foresight and futures studies we often see the inclusion of systems thinking as an adjunct to foresight, as if it were a methodology that aided our understanding of socio-technological evolution. Yet systems thinking provides a foundational discipline, with its roots as a generalized approach to integrating sciences. In many ways anticipatory studies has reached a similar nexus of transdisciplinary integration.

Systems and cybernetics theories have profound overlaps and co-evolutionary development with futures thinking. As with design, these fields provoke normative concerns for appropriate technology and human uses, ethical societal evolution, socially responsible design, and governance. Many first-generation systems thinkers were considered futurists, and their methodologies bridged the evolution of social systems into normative future expressions of those systems. Kenneth (and Elise) Boulding, Hasan Özbekhan, Erich Jantsch, Russ Ackoff, Buckminster Fuller and Marshall McLuhan continue to enlighten futures thinking 50 years on. Our participatory methodologies owe debts to Emery and Trist's Search Conference and Jungk's Futures Workshop.

Yet later generation systems thinking has not sustained the relationship between futures as substantively, and both discourse fields have integrated but not significantly progressed each other. And as systems fields have also diverged into systems sciences, complexity, and cybernetics, these all have different views and methodological stances to consider. Yet obvious convergences in critical systems topics, such as world systems (Wallerstein) and social systems (Luhmann, Christakis) are not commonly referenced in futures work, for example in world-building theory. Futures concepts are not commonly cited in systems studies. Anticipation theory has not found its way to the systems sciences literature (where *anticipatory systems* has a completely different function than systemic temporality). Happily, we see some integration occurring in the pragmatic disciplines – design/systemic design, planning, architecture. Yet there is nothing like a shared canon of corresponding concepts.

Crossover theory and methods, at a meaningful level of uptake, are not apparent in our various conferences. Re-integrating these knowledges is critical to the fields of systemic design and anticipation.

Systems thinkers have always expressed powerful social visions for human futures. This ethical tradition of systems thinking is often overlooked when we focus on methodologies and concepts, but we might reintroduce this legacy in the discussion of the relationship of systems to futures thinking and co-creation. In this session we call on participants to engage insight into questions such as:

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- What foundational systems concepts have the most potential for impact in futures work?
- How do systems theories contribute to an ethical and inclusive practice in anticipatory studies today?
- How do systemic critiques of the evolution of technology trends, cultures, and political economy inform futures studies?
- What emerging disciplines in systems (e.g. systemic design, systems change) and in foresight (e.g. worldbuilding, future literacy) ought to be connected across disciplines?
- How might systems methods address the inherent complexity of multi-stakeholder futures?
- Does the framework of critical systems theory and similar socially critical systems perspectives suggest a similar model for critical futures?

Approach:

An Art of Hosting approach engages participants to share ideas in an open circle and collaborate in small group dialogue, with visual mapping of small group conversation in World Cafés.

- Start – Peter Jones facilitates, introduces the process and speaks to the key questions, allowing some latecomers to arrive before starting. Participants start in a circle of chairs, with brief introductions.
- Opening dialogue: Triggering questions to inspire contributions: What are in your view is a major contribution of systems theory or principles to future studies?
- We define categories of interest for break-out groups. Small groups are hosted by a volunteer scribe.
- Group composition of contributions in summarizing discussions.
- Final dialogue to discover and generate key trend patterns, research agenda issues, and points of significant convergence.

Conference themes relevant to the session

The inquiry touches on many of the conference themes, whether directly or indirectly:

- What does it mean to care for the future (cultures of anticipatory care)?
- Where do we focus design and analytical efforts to foster anticipatory care?
- What systemic relations are found among prospectives, interventions, collaborations?
- How do we work with multiple stakeholders across lifeworlds, temporal worldviews?
- How might we integrate systemic views and strategic futures?
- Relations between prospects, interventions, collaborations.
- Discovering, engaging, and respecting variety in multi-stakeholder planning
- Relationship between systems and futures literacy, relevant to governance
- Systemic design, temporal structuring, and strategic futures.
- How do risk and interdependencies influence one another?
- How anticipatory networks are social systems with myriad connections
- Linking political economy, financial services, governance and distributed policy making.

Title: FATE – a method designed to anticipate socio-technical evolutions
Presented by Dr G Adlakha-Hutcheon on behalf of the NATO-SAS-123 team of KJ Bown, A. Lindberg, Z, Lim, JF Maltby, C Molder, C Peters, G Rizzo, S Roemer, A Temiz, and M. Tocher

Traditionally the realm of defence seeks technological might through acquisition of better equipment. With such a focus on gaining a technical capability advantage, often scant attention is paid to social, economic, legal or environmental factors that shape technological diffusion. Increasingly the private sector dominates the development of technologies instead of states or governments. Furthermore, researchers in the field of future studies tend to guestimate the trends that will prevail in the future; others extrapolate such trends into scenarios of the future; and still others focus on forecasting disruptive technologies. Few study the intersection of disruptive technologies relative to a scenario described at a specific time set in the future. Thus a method that enables a simultaneous examination of both is needed.

The North Atlantic Treaty Organization Systems Analysis Studies Research Task Group 123 (NATO SAS-123) was created with just such an intention. Its objective is to study over a three year term the interactions between diverse futures and socio-technical evolutions concurrently. It was formed in particular to assess the ability of these two variables to cause disruptions in defence and security. The novelty of the study meant that there was interest from a third of NATO member nations and NATO Allied Command Transformation (NATO ACT). Our NATO SAS-123 study group has designed a method titled Futures Assessed alongside socio-Technical Evolutions (FATE). We believe this work to be of use for decision-makers, as it facilitates their ability to make better informed decisions on socio-technical disruptors in the context of described futures.

The FATE method relies on examining a technology and social factors as a part of a socio-technical system (STS). It consists of four steps that start with the selection of an STS and its deconstruction into Organization, People, Policy, Technology and Infrastructure or OPPTI. A baseline STS is established as understood in the present by considering how an STS develops across OPPTI in the present. Step two involves selecting pre-described narratives of future states of the world and elaborating these into TEMPLES or Technical, Economic, Military, Political, Legal, Environmental and Social elements; step three looks at the intersection of the two by placing the STS in the future scenario. In step four, the impact of the interaction is assessed by identifying drivers and resistors that impact the STS.

It should be pointed out that an early iteration of our approach was presented at ANTICIPATION in 2017. Through the feedback from the Anticipation Community among others, our idea has matured into a method, a means to derive practical insights for informing action from framed futures.

It has since been revised after running a trial with participants not familiar with the method using the case study of Logistical autonomous systems (delivery to frontline by autonomous means). Examples of emerging technologies and their fate in about 15 years from today will be presented. The team's contention is that the FATE method is a collaborative action in the present that will help increase ones sensitivity to assumptions missed when planning for the future. Since the method relies on participation across disciplines it necessitates an active understanding of others' context which in turn, fosters commitment to decisions about the future.

Furthermore, as it transcends time horizons in looking at an STS in a future scenario relative to the current time, it is a representative of work in the present to anticipate actions for the future.

It is our belief that FATE is a much needed anticipatory practice for decision professionals, one that enables awareness of drivers and resistors for determinants of disruption.

Future Faceting - Exploring multifaceted urban futures through interaction- and service-design

Keywords: Urban futures, Urbanism, Interaction- and service-design

This paper is about exploring how interaction- and service-design approaches can be used in imagining and proposing urban futures. The paper presents an ongoing project on investigating how experiential, prototype-driven design methods from service- and interaction-design can offer new ways of exploring possible futures in today's increasingly digital, service-driven cities. We have named this approach ‘future faceting’, as it offers a framework for collectively exploring and experiencing multiple facets of future urban life through designed interventions and prototypes. Through future faceting the design of multiple, parallell experience-prototypes together reflect multiple perspectives on future urban life. These prototypes express future possibilities in the present that can be experienced by citizens, designers and urban developers, and can thus contribute to grounding multifaceted futures in the richness and heterogeneity of contemporary urban life. The approach is being developed with a network of researchers, students and designers through workshops, practice-based research and teaching. Across case-studies spanning urban development, mobility, and activism, the project have explored different modes of using prototyping to broaden the horizon of possible urban futures.

Over the last 10 years we have witnessed a widespread digitalisation of cities and urban societies. Digital services are making their mark across urban living, e.g. within mobility, welfare and social life, and design is being introduced into governance and policy-making (e.g. Townsend, 2013; Landry, 2016). With this shift towards digital and services-led cities, new professions, new sectors and new design practices are involved in shaping the urban experience at various levels (REF). However, the traditional urban professions, like architecture, engineering and urban planning, and the emerging digital- and service-oriented design professions, are not seen as integrated practices with equal involvement in terms of developing urban futures. While the traditional urbanism professions are tasked with overall, long-term plans and strategies, the ‘new’ design professions are typically limited to realising discrete services, or being involved in facilitating citizen-participation within established planning-processes. Traditional urban development, in terms of planning and architecture, typically takes place over the timescale of decades, while the evolving digital and service-oriented industries currently operate on the timescale of months or years. These fields therefore offer different scopes for shaping future urban life, but also different methodologies for creative exploration. In our research we observe that while interaction- and service-design are now increasingly a part of city-making through their impact on urban living, these disciplines potential for contributing to urban future-making is not fully realised (Hemmersam et al, 2017). We therefore address how the explorative methodologies of interaction- and service-design can be applied towards re-thinking urban futures.

Service- and interaction design work with highly adaptable materials and formats; such as software, digital data, structures for service-delivery, and communication. Services are experienced over time and their value in use is deeply connected to the unfolding and shifting needs and desires of citizens. The design of interactive experiences and services are typically freed from the constraints of the built environment. As exemplified by smartphone-based mobility applications, such as bike-sharing, where and how an urban service is delivered is dynamic and can often shift. Based on the flexibility of their materials and formats, interaction and service-design practices have developed a rich repertoire of techniques and methods for iterative concept-development with and through prototyping and user-testing. In this paper we present ‘future faceting’ as a work-in-progress framework for using these exploratory methods as ways of rapidly evaluating and experiencing multiple potential near-futures through prototypes of urban service concepts.

Through a series of case-studies with design-students we have looked at a varied set of issues in urban development and urban futures through the lense of ‘future faceting’. These cases have included the future of mobility practice (with Oslo public transport agency Ruter), urban renewal in a Bangkok neighbourhood (with urbanism and architecture students at Chulalongkorn University), and explorations of inclusivity in digital cities (with the research-group Digital Urban Living). In

each case we have tasked a series of design-teams with the task of developing service-concepts that explores the broader possibilities of the given issues from the perspective of urban life. Each service-concept focus on one specific near-future possibility, and the concepts are shared and evaluated through a variety of experiential prototypes. These prototypes have included interactive applications, e.g. for promoting pedestrians in public transport strategies; service 'pop-ups' where a service can be fully experienced over a short period of time, e.g. for exploring the cultural dimensions of urban renewal; and light-weight interactive or social pilot-projects where new services are facilitated using existing digital platforms, e.g. through using social media for promoting volunteering as a tool for social sustainability. These modes of prototyping not only articulate visions for urban futures, but also offers concrete interventions where possibilities for near-future urban life can be collectively experienced in the present.

Preliminary results from our explorations suggest that whilst a single service-prototype can gives insight into the potential of one particular concept, multiple prototypes can offer a multifaceted view that creates a broader image of a contingent urban future. As well as offering takes on how design can contribute to questioning and exploring anticipated urban futures, the paper also questions the role of interaction- and service-design in current urban development and strategy. Today interaction- and service design is typically used to realise existing urban policy or to realise discrete innovations, but as Dan Hill writes, designed prototypes can also been used as 'trojan horses' in influencing through introducing new mindsets and experiences through design encounters (Hill, 2012). With our study we aim to expand the ways in which design can also contribute with methods for exploring and critiquing the rich possibility-space within broader urban futures. Here, the purpose of prototyping and concept-development is not service- delivery in itself, but using the experiential qualities of designed prototypes to think about facets of possible futures - offering plurality and heterogeneous perspectives. With 'future faceting' we see experience prototypes and design interventions as a strategic tool for investigating and broadening urban futures. 'Future faceting' brings the lived realities of today into the making of futures, but also brings facets of the future into today - allowing us to question and consider a broader range of urban future trajectories.

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Urban Futures by Design

Latent factors in design and technology-driven scenarios for mutating cities

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Keywords: Urban Futures, Anticipation, Design Cultures, Scenarios, Mutations, Continuous Innovation, Transition Management

Abstract and summary of research

The aim of this proposal is to propose the concept of mutating cities as a paradigm of anticipatory processes by design cultures. It builds on the idea of the fragility of contemporary urban structure (Smail, 2008; De Biase & Pievani, 2016; Mancuso, 2016). The general hypothesis is that a process of urban degradation is occurring. This process is latent and unavoidable - caused by the speed of common urban transformations and changes - and it makes the recovery of desired wellbeing and liveability temporally impossible and economically unsustainable. Currently, the scope and cost of this fragility is almost understandable. Likewise, it is difficult to have a sense of its growth or abatement. Nevertheless, this latent element truly constitutes the ground zero in forecasting the intentional change of reality and in demonstrating the will to invest in processes of continuous transformation. JPI Urban Europe uses the word “dilemma” to represent the complexity of decisions related to urban change: “Dilemmas occur where the level of uncertainty is too high to rely on a pre-calculated action plan”, but, at the same time, “Dilemmas provide strong cases for research and innovation to develop new insights and help find the answer to how change can be more effectively realised” (Wrangsten & Bylund, 2018).

In contrast to the condition of urban fragility, this proposal proposes the vision of mutating cities, or of a city which continuously self-analyses through societal representation and sharing of transformative elements, and which projects in real time, possible solutions based on awareness and participation (Goodchild, 2007; de Lange et al., 2014; Kaplan,

2016). This vision is nourished by the interdependent relationship between the built environment and the public's mental state: a "spacefeeling-action" (Fanzini, Bergamini & Rotaru, 2018) that allows anticipatory design to operate as an instrument for increasing the resilience of the socio-ecological system (Fanzini & Rotaru, 2018).

By referring to the connection between design and urbanism on a broad level, this proposal frames it in terms of anticipatory thinking and transformation. International projects demonstrate the ability of designers to envision scenarios of continuous, sustainable and shared urban mutations. "The Light City" (Italy), "Incheon Living Lab" (South Korea), "Senseable City Lab" (USA), "Guadalajara Digital" (Mexico) are examples of how technology can nurture design approaches for environmental development and become part of an evolving system. In these mutating cities, the digital transformation mediated by people (industry 4.0) overtakes the structural and infrastructural approaches to both planning and urban studies inquiry. The dystopic vision of future cities is eclipsed by a new vision of a city as a living lab, that can share its mutations and investments in order to regenerate its inefficiencies day-by-day (Folke et al., 2005; Boyd et al., 2015).

The territory represents the origin and the destination of this process and the Transition Management approach to the technology for governance of the system, is designed to push the transition towards sustainability, based on the principles mentioned above. The rules that guide its operation can be traced back to the following points:

- Promote a multi-authorship approach in the definition of policies and projects;
- Assume a long-term perspective to create visions and scenarios that can direct action in the present and design fictional artefacts intended to represent, in urban settings, negative and positive phenomena, as well as behavioural patterns;
- Educate public and private individuals through experimentation and direct involvement in pilot projects (co-design of data analysis with citizens and other stakeholders, i.e. policy-makers, entrepreneurs, city authorities, public administrations);
- Translate the positive elements of experimentation into strategies and practices able to lead administrative actions towards coherent and functional results.

The application of this and other similar instruments of lived anticipation described in the literature, as well as the analysis of case studies, will allow examples to be isolated, together with the relevant operational and technological aspects of city mutation projects. The innovative contribution proposed in this abstract derives from the first results of a research project that the Hera Group, one of the most important Italian multi-utility

companies, commissioned from the Advanced Design Unit of the Alma Mater Studiorum University of Bologna. The project is called “Heracademy” and involves the construction of an ecosystem of theoretical and practical knowledge, the objective of which is to promote the growth of the company’s human resources, also through the production of new knowledge. As part of this project, the plan is to create a living lab in which company employees will be able to participate in central decision-making. The objective will be achieved by transforming citizens and their homes into places of experimentation (citizens as sensors), according to the principles of the mutant city expressed above. A concept that considers the city as a single Living Lab made of living (or at least active) components, involving interaction of various kinds which, thanks to enabling technologies, is able to monitor its status in real time, sharing the results and guiding the pursuit of future goals.

Discussion

The discourse avails itself of a theoretical background tied to the relationship between design culture and anticipation. The constant, latent, and declining factors constitute an element at the base of a “pre-active” design-directed process of anticipation, with its own knowledge, shapes, and practices (Celaschi & Celi, 2015; Celaschi, 2016; Formia, 2017; Celaschi et al., 2018).

Current design practices are moving towards the temporal dimension of urban transformations. “Designers - as futurists - by participating in the building of the future, create new levels of value with the motivation to fulfil the unmet needs and desires of people” (Celi & Formia, 2017, p. S63). Design, well as other creative fields, has the capability to realize possible visions of the future (Celi & Morrison, 2017). Furthermore, futures produced by design address the social value of this approach: “claiming, educating, activating collective awareness and involving non-designer professions, providing a possible way through which the design project becomes a critical medium for observing the present and formulating concrete instruments for exploring and sharing the possible and preferable” (Celi & Formia, 2017, p. S70).

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A game as an anticipatory service design tool

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In working life, there is a need for anticipatory skills to navigate the change in organizations. This abstract describes a work in progress; developing a co-creative service design tool, a board game for anticipating futures. The purpose is to develop a tool for RDI operations in higher education. Tool development is done through trial with different target groups in workshops. Process began in partnership with local museum, which provided a testing ground of 20 museum professionals and 140 children between ages 7-12. In these workshops first draft of the tool was made. Development will continue with different RDI target groups from working life. The aim is that the tool can be used in service design processes for enhancing futures literacy, designing services or strategic planning in order to develop organizations and services together with stakeholders.

In a workshop, the tool has three phases. In the first phase, participants work in small groups co-creating a vison of future environment such as town center, state of a company or service path. They visualize it with a game board template. Groups decide who are the actors in their future and visualize them with modeling clay as pawns for the game. In the second phase, by playing the game they will add action level like everyday life details to the vision. Third phase is a reflective discussion connecting future vision and actions to today's situation, ending with summary and planning next steps according the results. Tool can be adapted with design changes to meet different goals or target groups, changes can be made with how much elements and rules for playing are given ready.

This work brings contribution to anticipatory driven fields, how design can be used in shaping and co-creating futures with service design. With this tool, the idea of creating one's future, or making an impact to it, is showed as a possibility. The tool fosters futures literacy abilities by connecting future vision and actions to today's situation in service design context. In the workshops reflective discussion is an important part for making an impact, learning and discussing how the future and present are connected. Based on the experience in the workshops so far, this game as a method lowers threshold for visioning futures.

Future orientation and anticipation are emerging issues in service design field. The base of this work in service design field is in multidisciplinary co-creation and in organizational development. It brings new contribution, a practical method for using design in shaping futures and enhancing futures literacy. Games are practical approach for co-creation for bringing stakeholders together. In this case participatory game is a means for conceptual thinking and sharing views, co-creating futures visions and visualizing them.

Previous work using games as participatory tools viewed during the development: EU Science Hub's Scenario Exploration System (SES), a future simulation tool for strategic participatory work and Laurea UAS's CoCo Tool Kit, service design tool for co-creation and innovation within organizations, public sector and individuals and Situation Lab's The Thing from the Future.

Key words:

anticipation, service design, co-creation, game, futures literacy

Anticipation, Hauntology and Nostalgia: Israeli Novels of the Post-Oslo Era

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My talk will present a current trend in the mainstream of contemporary Israeli literature which may reflect the state of the withered liberal left in Israel, and that is nostalgia for a lost anticipation, a lost hope for the future signaled in the Oslo accords that had been signed between Israel and the Palestinians in the early 1990s.

From the very beginning of its formation, Zionism has been a movement motivated by anticipation. As a revolutionary movement, it directed its focus to the future with enthusiasm. The seminal text to inspire the Zionist vision was a utopian novel written by Theodor Herzl, the visionary of the state of Israel, titled *Altneuland* (1902), a novel that imagines life in Palestine as a Jewish state with an exemplary welfare society, peaceful and prosperous. In fact, the foundational figures of the Zionist literature revolve around anticipation: such is the figure of "the seer for the house of Israel", a notion coined by the writer Isaac Erter at the middle of the 19th century, and became an idiom noting the role of the Hebrew writer with regard to his nation, and the prophetic mode assigned to this position; such is also the Israeli national anthem, "The Hope" (*Hatikvah*), written in 1877 to express the wish to reclaim the land of Israel as a sovereign nation state, more than 70 years prior to its establishment in 1948, and yet chosen as its anthem at the very moment of the so-called fulfillment of its vision. Indeed, the anticipatory mode of Zionism had always been mingled with looking far into the past, and the very oximoronic title *Alt-Neu-Land* points to that exactly. It is this trait that marks Zionism in general, and Israeli literature in particular, with a sense of Hauntology (to follow Derrida's term in *Specters of Marx*, 1994). In fact we can see that early literary works, written shortly after the establishment of the nation state, reflect a strong sense of haunting. As soon as the vision has been fulfilled, its specters started to haunt the central cultural agents, expressing nostalgia for the visionary stage.

I argue that the mainstream of Israeli literature today is haunted by the lost anticipation to an overall arrangement that will end the conflict with the Palestinians. The sequence of violent events since the signing of the Oslo agreements in 1993 - the assassination of prime minister Yitshak Rabin in 1995; the collapse of the 2000 Camp David talks and the October 2000 riots; the second war in Lebanon; the deportation of The Palestinian Authority from Gaza strip; and the series of clashes between the Israeli army and Gaza, among other events – all resulted in a political impasse in negotiations and produced a public conviction, shared by both Israelis and Palestinians, that the conflict cannot be compromised or reconciled. This conviction has been fortified by the rise of right wing parties to power over the past decade. The resolution of the conflict fell into a political deadlock (Ghanem, Mustafa and Brake, *Israel in the Post Oslo Era*, 2019).

The hauntological tendency grows stronger in the post-Oslo era, and with greater vigor over the past few years, with the unavoidable retreat from the two-states solution and the recognition that Israel circles in a loop of nationalism and populist conservatism. I will focus on the years 2014-15, when some of the most central and successful novelists in Israel published novels that express the way Israeli cultural Elite is haunted by the specter of the lost future inherent in the vision of Oslo accords. These novels try to re-live a lost anticipation for the future by looking back to the past. They express the sense of "a time out of joint", but by that they also renounce the anticipatory mode and withdraw the position of 'the seer for the house of Israel' that looks forward, for their anticipation is blocked by a nostalgic gaze looking backwards. Anticipation in these novels is sealed by the sense of 'End of history' (Fukuyama, 1992), signaled in the liberal-democrat false vision of the Oslo accords. It seems that the nostalgic mode – especially through Svetlana Boym's interpretation of the term (Boym, *The Future of Nostalgia*, 2001) - and the refusal to neglect the lost future, prevents these novels from imagining new and other – possible and impossible – futures. Nevertheless, the nostalgia for the lost vision of Oslo is also a nostalgia for the very mode of anticipation and hope that identified Zionism ever since.

I will shortly survey a few of the main Israeli novels published during 2014-15 – all of them had been translated to foreign languages and are largely regarded worldwide as the face of Israeli literature today:

My main discussion would center on David Grossman's well known novel, *A Horse Walks into a Bar* (2014, winner of the Man Booker international prize) as an hauntological novel that recreates a performative anticipation while mourning a lost future. The whole novel stages a stand-up show, where the stand-up artist tells an episode from his teen years: while spending time at a youth camp in the southern border of Israel, he is called to return home because of a sudden death in his family. Being an only child of Holocaust survivors, he does not know which of his parents died. He reconstructs his journey as an anticipation shared with the audience, and brings us back to the point where fate has been preordained, in a way that haunts the present of the performative act.

Other novels to be mentioned:

Judas by Amos Oz (2014, nominated for the Man Booker international prize): a novel trailed by ghosts of historical and mythical past. Oz is occupied with the question of treason and writes a statement of defense on the political left. Scholars identify this novel as a macabre version of Herzl's *Altneuland*; *All the Rivers* by Dorit Rabinian (2014): Staged in New York 2002, this novel fantasizes a romance between an Israeli young woman and a Palestinian artist. The novel was condemned by Israel education ministry; *The Third* by Yishai Sarid (2015): a dystopian novel about the destruction of a third temple and the end of Israel, due to its withdrawal from the striving for peace; *Pain* by Zeruya Shalev (2015) and *The Extra* by A.B. Yehoshua (2014).

My proposal puts forward the argument that reciprocal relationship with non-human agents must be embraced, if we want to address the rapid acceleration of climate shifts, sea level rise, mass extinction and societies of fear. The question is: how can sites of resistance be enabled, while engaging through sensibilities, empathy and rituals as poetic attunement, so to inspire multiplicity of being within our ecosystem, our *umwelt*? My paper suggests that a turn towards artistic practices and interventions, including design and architecture should be framed as poetic attunement.

In this context I define poetic attunement as encounters that bridge the human to other-than human situations, spaces and dialogues that playfully engage in raising a planetary consciousness. The question is how to disentangle from speculation and merge our human behavioral systems to embrace these encounters through objects, matter and things that surround us. Can mythologies, science fiction and artistic practices be deployed/materialized towards an infrastructural spectrum that moves from ownership to a common future humanities? Could a possible answer be to shift our sensory and perceptual field and engage scientifically with modes of attunement, and to open psychotropic research across Humanities to engage in the production of new forms of language?

Attunement to our vibrations, planetary frequencies and higher realms of being is perceived as mystic, sacred, ritualistic, immaterial, and not always equal to established canons of knowledge or science. This connection is unconditionally necessary yet care and guidance to reconnect with purposeful spaces of attunement to experience and adjust to these fundamental planetary vibrations, is not widely accessible, and has been eradicated from our culture, traditions and knowledge.
Attunement, as atmosphere or tone becomes a critical positionality if we are to think through its signifier, trying to distribute its meaning across disciplines as a transdisciplinary network. We could relate attunement as proposition for thinking through Lefebvre 'unitary theory', a 'unity between fields': 'the physical space of nature, the Cosmos, the mental space including logic and abstraction and the social. A mirror to this is the concept of the imaginal, which dismantles the hard division between an external material reality and an internal psychic landscape, the subtle world of experience of the imagination or the liminal land of enchantment that bridges the material to the psychic (M. Rowlandson).

For instance, Rosi Braidotti's perspective deeply resonates with the notion of '*Planetary* Humanities' as a mode of living that could form new alliances and engineer our survival. In order to do this, i.e. the need to act through slowness, enable social experiments, create new social imaginaries and embrace an epistemic acceleration while resisting the anthropocentric post-human acceleration, i.e. cognitive capitalism. We need to take an ethical position to *'taking in and on the world –and becoming one and with the world'.* A similar perspective is offered by Isabelle Stengers when she introduces the concept of 'Cosmopolitics', a much-needed ontological politics that can open potential connections with *other-than-human* worlds, a prominent recognition towards animism.

It becomes an obligation to contest and raise concern of outdated techno-scientific beliefs in the wake of new frontiers of studies embracing experiential multi-dimensionality of human nature that embraces into a future oriented Planetary Humanities. From a philosophical argument, an embodied understanding of Nature is not an abstract idea, but dwells in Spinoza's theory of 'substance'.

My engagement of thinking and working through this will be discuss a manifesto for a planetary-centred design to develop new futures of practice. I am interested in opening this discussion to thinkers, artists, designers, architects, activists, educators and philosophers to join me in responding to the idea of how we can truly design a more compassionate and caring planetary future to cast out new methodologies for knowledge creation

Design for feeling the future beyond the human centered zone

In the past, the approach to handle climate change was mainly to raise awareness or a mere call for individuals to reuse, reduce and recycle on a personal level. Now, climate change is seen as an urgent and systemic issue. So, considering its urgency and complexity, we would need to significantly transform our society on different, if not all, levels. Transformative Design can be seen as an attempt to reshape the design process to address this situation. It is a type of design that try to facilitate or enable radical transformation, e.g., by inspirational products, visions, and scenarios that make our ultimate goals 'thinkable'. Most design methodologies relating to sustainability are more about design concepts based on scientific documents than on the designers' sensibility and creative skills. This paper discusses some other additional roles the designer potentially could take when trying to facilitate transformation.

The core question is if some sort of transformative design is required to deal with climate change, what is it that could make people to really sense the future by that giving guidance for "right choices" and act as solutions for a necessary transformation that are able to both scale up and out. The design method is research through design, and there will be three cases illustrating my case.

(1) The first case is The Algae Dome:
It is a food-producing pavilion from Space10 (A Design Studio founded by IKEA). The project shows, in the future, micro-algae could be used as nutrient-rich food that potentially could replace soy protein in animal feed, as new biofuels to reduce greenhouse gas emission, and as an agent to treat industrial wastewater. The Algae Dome, therefore, is a space to spark conversations on how we might grow food in the future through sensory engagement. This, the first case is researched through available second-hand material.

(2) The second case is an exhibition called Future Dialogues Now:
Future Dialogues Now has two exhibition spaces themed at climate change. One exhibition space, which is defined as the future, shows that a 2050's celebration, where three different future artifacts as solutions that show what it would have partly changed the ongoing Climate Change, are on display and celebrated. The exhibition is a dialogue place between design and the public, future and now, anticipation and action. A live video dialogues stream from the 'future' space was broadcast in the other exhibition space. The other space, the exhibition which is regarded as 'present times' shows expressive videos from a design exploitation field study, sharing some feelings and understandings about the quality of life experienced in China. Besides, live videos from the 'Future-exhibition' with its artifacts will be displayed as a future celebration. The two spaces show how people sense the future in two different ways. The exhibitions are designed and organized by the author and some design students. This, the second case is therefore arguably researched through design practice.

(3) The third case involves some prototypes based on the two cases above:
The prototypes to be presented at the Anticipation Conference are some future artifacts that would show some snippets of possible future everyday living. The prototypes will explore the possible aesthetics forms of future everyday living which could be experienced by the audience and also could trigger some choices for current living. These prototypes could be regarded as a transdisciplinary dialogue to explore the 'form' of transformative design. The third case could, therefore, be regarded as researched through design exploration.

The three cases are all future scenarios imagined that try to trigger social-technical transition through different participants. Feeling the future as sensual object depends on the quality of real objects, spaces, and especially the

actions of others. I claim that transformative design is a fundamentally participatory act engaged with participants and different systems. The concept of the social-technical system changing through symbolic products could bring more palpable feelings about the future beyond the constraints of individual activity and imagination. Additionally, actions of others would probably also be influential elements that need to be carefully considered in any transformative design solution. This might indicate that some designs could gain from having more of performative characteristics included. As a final conclusion, the results out of the three projects could, therefore, be regarded as sensual images when exploring other possible systems than the one dominating today. Design as participation could be a feeling to understand the future, and design as aesthetics performance could be a feeling to a large group system which could be a base for transformative design scaling up beyond human-centered zone.

Towards prospective design: building a capacity for anticipation in design

Abstract

Are all futurists designers? And are all designers futurists? Do they need to be? Can they be? Is either a condition or requirement of good design and good foresight work?

This session is based on the work to date of a PhD examining the use of futures thinking, strategic foresight and anticipation in design. The research will use grounded theory and critical realism to consider the emerging nexus of strategic foresight, design, policy, technology and culture.

The investigation also aims to explore awareness and use of futures thinking and strategic foresight in design and clarify the distinction between the futures and design disciplines. This includes an audit of the use of foresight tools and methods in design practice globally and the awareness of strategic foresight and futures thinking in the design sector. The research will seek to clarify the difference between strategic foresight and futures thinking, and contemporary design methodologies and theories including establishing a lexicon to use in design practice. The research will also compare models and frameworks for design processes and strategic foresight processes to determine if 'futures literacy' can be embedded in design practice through the use of futures thinking and/or strategic foresight. Using the discipline of anticipation as a framework to explore anticipatory thinking and anticipatory behaviour, the study will also establish if design can 'use' or incorporate futures in its strategic and creative processes.

The aim of the research is not to provide an absolute solution or universal theory of strategic foresight and its relationship to design. Therefore, the intention of the sessions is to present initial ideas and insights about a complex, plurally-defined collection of theories, tools and processes that appear to be used both explicitly and implicitly in design and strategic foresight.

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This house is not a hotel. But what if it were?

I am sending a more detailed speech abstract, following the guidelines of review 1 and 2 that were sent to me previously.

The house described in my abstract, as a social and medical building facility focus mainly on the following aspects:

1- The safe collection and sharing of personal medical data and information. The "house" will take care of the tenant by offering medical solutions like personal prevention programs and the possibility of networking their medical files will lowerthe rental cost, because the owner of the property will also be the proprietor of all the data available in the house. An effective use of this data would considerably improvethe patient-doctor relationship, lowering costs, speeding medical analysis and research, allowing a global sharing of knowledge, which is the basis of a development process. The sharing of medical records will be safe thanks to the blockchain technology of the platforms used in the house. Artificial Intelligence and big data analysis will help reduce reserching time for an adeguate medical diagnosis. Problems related to privacy laws should be solved by arranging economic aladvantages like lower rents.

2- The house, which should be simply called "the building", will become less the expression of who designed it, but gradually more the expression of who will use it. The modular aspect of this building will enable residents to make changes according to their needs and budgets. It should be easier to costumise the modules by choosingmaterials and shapes, just like buying a motor vehicle today. The production of thesemodules should be standarized to reduce time and costs. The building should aim to "carbon neutrality" by being energy self-sufficient. Sustainable energy sources shouldbe used since the construction phase of the building. The Local Strategic Planning Statement should consider tree planting incentive programs and the development of public green areas as part of Public Healthfacilities. Green areas should be an essencial presence in architecture.
From roofgardens to urban vegetable gardens, everything will help transform the DNA of cities, starting from a single house, which is the beginning and the end of a new model for city sustainability.
I'd like to mention the report provided by the American organization "Nature Conservancy", which highlights that people who live in neighborhoods with trees live up to 10 years more than people who live in areas with less trees.

3- Attention to environmental, economical and social sustainability should be considered from the start (projecting) of a single living space. Spaces should be organized according to natural light and airing. The flow of rainwater from roofs can be used to avoid waste. Priority should be given to the use of recycled material.
In cases of demolishing and rebuilding, the new

building should use as much as possiblerecycled material from the previous construction. Wood should be provided only by sustainable forest management. And for the house insulation, we can take for instance the Science Museum of San Francisco initiative, that used old jeans asinsulation material. We should pay particular attention to the aquisition of construction material, avoiding long distance transportation additional costs, inve sting in locally sourced resources.
The round house will become a model of sustainability, not only an abstractphilosophy but a new concept for its industrial process design. It is meant to be ratherthan a theory, a practice that will involve everyone, families and companies. Beginning with the simplest actions, like the correct waste recycling. Permittingfrying oil to become fuel, bottles t o become fabric and potato peels into manure and fertilizers.
The house will provide continuous information and training support, usingArtificial Intelligence that will eventually test its performance.

4- Besides saving energy resouces, repairing and reusing space resouces, we must talk about the most important aspect of all: the human resource. The city, once upona time a symbol of civilization against the savageness of nature, became e battlefield, man against man, where every lock added to a door increases rather than drecreasethe sense of insecurity. But coming through this situation is p ossible. We need to recall what distinguishes humanity from a herd and place it again as the centre of oursocial organization: the compassion and the caring, values that only human beingspossess. It all should start from here and the "house", considered not only as a roofover our heads, but a residence where living sustainability is possible.

5- The project.
Regarding a possible project, the ITIS, a personal services company in Trieste, Italy, that has been working for 200 years has shown interest in reshaping and managing a building following the guidelines of my "house" project and research.
We will try to overcome the concept of a separate house for each single generation, trying to promote active aging. The bond between youngsters and elderscan offer mutual support and solidarity. Fighting social loneli ness and fragility, creating living solutions with co-working spaces, that encourage an osmotic spaceand the exchange of ideas like the so many existing "agorà 4.0".

My indications are directions not predictions. I cannot offer predictioncertainty as for how our hou ses will actually develop in time. Based on countlesssigns, individuals and companies that follow these directions will be able to respondto a new market that is growing on demand.

The difficulties are many but opportunities are powerful and relevant. ArtificialIntelligence should not be considered as relevant as teamwork, which should be the real inovation of the 21st century. The creation of this net should be the real driver to change.

Fabio Millevoi

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Proposal for the New Ideas Sessions

Deliberative anticipation

The paper discusses the possibilities of integrating the theory of deliberative democracy and the discipline of anticipation for addressing the challenges of complex public policies. The conceptual arrangement conjoins the field of future studies and the contemporary administrative science discourse. The paper introduces the summary of a dissertation with an estimated time of completion in August 2019.

Policy-making requires acknowledging the public service systems as entities of interacting perspectives and further, as a co-evolving and transforming ecosystem (e.g. Eppel 2012; 2017; Coaffee & Headlam 2008). Comprehension of this interaction elucidates the policy-making future consequences and changes the administrative *foci* to enabling and cultivating the interaction between the constituents. The interpretation of good governance comprehends participation as increasingly fundamental in approaching complex issues. The value of inclusion is emphasized in the design and implementation of fundamental systemic changes (Fung 2006; 2007; Mitleton-Kelly 2011; Gutmann & Thompson 2018

Societies seen from complexity perspective are in continuous evolution with emerging and changing dynamics, political and ideological movements and by – hopefully – learning from them. It is also characteristic of any complex, human system to have multiple and interrelated challenges with several dimensions and ways to address them. The process of choosing our societal objectives and our mutual interactions accordingly become essential in the state of flux and proliferating uncertainty. Even if the increasing amount of data enhances the knowledge and awareness of interconnectedness in complex issues, it does not exclude ethical and moral discourse. (Mannermaa, 1988; Dennard, Richardson & Morçöl, 2008.)

Deliberative democracy theory is a normative theory focusing in objective of policy legitimation by means of communicative processes (e.g. Fishkin 2009). An essential attribute of deliberative democracy is its requirement of collective and appreciative argumentation preceding the decision-making. The conception rests upon the ideal of collective argumentation, emphasizing its participative (e.g. citizens, service users, inhabitants) attributes. By means of various deliberative arrangements (e.g. citizens' juries or panels, mini-publics, deliberative polling) an equal discourse is reached. (Chambers 2003; 2017; 2018; Mansbridge et al. 2012.)

In the paper, "deliberative anticipation" is understood as fertile soil to advance the multidiscipline and participative, future oriented discussion to function as a foundation for governance and policymaking. Anticipation is associated with the administrative discipline in affecting the future by emphasizing the policy objectives set by communities. By contemplating the potential of anticipative thinking in meeting communal policy-making complexity, the paper suggests accommodating the deliberative democracy ethos for the use of societal, anticipative visioning. This requires recognizing the public engagement as expertise beyond corporate and representative involvement (see Pernaa 2017) and as imperative to the value-based and anticipative societal discourse.

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- Theme: Design as future making, design as shaping futures.

What can design contribute to anticipation studies?

Anticipation studies is an emerging research field where diverging disciplines, multiple theories and methodologies meet. In general anticipation has been connected to the relation between the universal and the particular and problems of abstraction (de Vrijner 2000), of the capacity of the human mind of designating things by a universal vocabulary, while having experience only with particular instances of those things (ibid). On the one side, the broad interest in anticipation brings multiple concepts related to anticipation studies on the table. On the other side, it brings different perspectives *on* and conceptions *of* anticipation. In this presentation, we focus on conceptions of anticipation and future-making within the field of design anthropology and ask what conceptualizations and methodologies this field brings to the discussion about anticipation.

We find anticipation studies based on the performative ways of actively orienting oneself temporally (Granjou et al. 2017), as a regime of being in time (Adams et al. 2009), or as a mode of researching by projecting trends from facts into future states or as modalities by which the environmental future is anticipated and prepared for (Granjou et al. 2017), especially including the "more than human" futures, which has to be included in environmental futures. In studies about policymaking, another aspect of anticipation is discussed, namely that anticipation is seen as contrast to reactive policymaking. While reactive policymaking relates to existing problems, anticipation represent a mode that tunes into emerging hazards and other threats and uncertain risks (DeLeo 2017). Anticipatory policy emphasizes planning and preparedness and represents the binary opposite from psychological anticipation, where focus is on the emotional rehearsal needed to handle diverging feelings that come when having to wait for an experience, and involves cognitive schemata that enables the "organism to actually perceive the expected information" (Riegler, 2003 in Poli 2010:5).

The theme *Design as future making, design as shaping futures*, in this year`s call for conference, brings yet another set of conceptions and approaches to anticipation. That is, design is deeply identified as a profession highly skilled in taking actions in the present in order to construct a desired future reality (Simon 1969; Buchanan 2001; Krippendorf 2006). Design is an interventionist approach to research on the future, where interventions are explored in both practical and conceptual senses (Akama et al. 2018). Impacts of interventions are often imperceptible, fuzzy, vague and dispersed (Akama 2015), whereby design interventions, more recently, have been discussed as tools that further dialogues "about possibility" that "relate to people`s concerns, aspirations and imaginative horizons" (Halse and Boffi 2016:101). The focus on interventions, come to frame design as ways of taking actions by focusing on the process as well as the product. This opens for understanding design efforts as a process of future making that gives us a space to understand different conceptions of anticipation, which come to play in making futures.

In Design anthropology, the perspective on future making "point to a new wave of critical reflection on the place of design and scholarship and the need to align this to understandings of futures as ongoingly emergent, contingent and indeterminate" (Akama et al 2018: 10). The major relationship between Design and Anthropology has been understood to be through ethnographic methods, but its affinity goes beyond methods. That is, the relation between

design and anthropology is also related to the processes of inquiry and discovery that "includes the iterative way process and product are interconnected and the reflexive involvement by researchers and designers" (Otto & Smith 2016:3). In this way design anthropology is a distinct style of knowing (ibid) that focuses on multiplicities of ideas, critiques, potentialities, situated possibilities, formations and actions at the intersection of design and everyday life (Kjærsgaard, Halse, Smith, Vangkilde, Binder, Otto 2016). Design anthropology is especially concerned about futures as non-linear, plural and experiential, that is "shaped through uncertainty, experimentation, collaboration and contestation at specific sites of design anthropological engagement"(ibid).

In this presentation we explore established concepts and methods of future-making within design anthropology and discuss how such approach and its methods supports anticipatory exercises and dialogues. With a theoretical gesture to Science and Technology Studies (e.g. Felt 2015), we find such discussion important in an effort to elevate sociotechnical issues, which are both negotiated and formed with reference to the particular (e.g. local practices and actions) and the general (e.g. policies).

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Performative participation in envisioning future geographies.
A case study on Environmental Strategy design in Brabant, the Netherlands

Envisioning and anticipating future geographies in governance increasingly becomes a participatory endeavour. Fundamental premise in these processes is often the alleged need to increase the legitimacy of the governance process and on the recognition that such processes should involve those actors that are affected by them (Turnhout, Van Bommel, & Aarts, 2010). Research on participation in this context is not a novel terrain. Much research has been conducted over the last decades into the functioning of participation in spatial planning and governance practice, examining the intended and unintended consequences of participation, and scrutinizing whether the various ideals of participation, including consensus, better decisions, legitimacy, and support are actually met (Turnhout, Van Bommel, & Aarts, 2010). Yet very few studies have explicitly questioned the performative role of 'the future' in participatory visioning processes on spatial development (Felt, 2015).

The idea of public participation in visioning reaffirms the belief in a future which is open to human shaping and transformation and for which we need to take collective human responsibility to anticipate the future we want (Granjou, Walker, & Salazar, 2017). In this capacity the locus on participation inhibits a tacit promise (Ruben, 1972), that is (1) an epistemological promise to accumulate, mobilize and direct all knowledge and know-how to secure the *probability* of shaping our desired future and, interrelated, (2) a moral promise implicating our *obligation* to anticipate these futures in a fundamentally democratic way taking responsibility for both present and futures needs and values. Visions, therefore, should not be perceived as an end goal or an end product, but as futures-in-the-making (Adam & Groves, 2007). Visions are performative. They provide a discourse of future-orientation (Kinsley, 2012) which renders real and material consequences in the present and the future as it emerges.

In this paper we present findings of a case study conducted into the extensive participatory visioning process adopted by the provincial government of Brabant, the Netherlands, for the development of the Environmental Strategy [*Omgevingsvisie*]. The Environmental Strategy is a key strategic and integral visioning instrument under the new Dutch Environment and Planning Act [*Omgevingswet*], directing policy and program development on the physical environment. Within this case we have studied how the explicit participatory approach contributed to the construction, articulation and legitimation of particular future geographies. The participatory processes rendered a vision encompassing both a 'panorama on the future' and a 'mobilizing strategy to enact the future', with an emphasis on the latter. Moreover, the strategy was articulated as an integrated narrative connecting frames on future geographies such as 'energy transition', 'climate proofing' and 'smart connected cities' to an explicit claim for situated and deliberative approach in both time and space. Illustrative to this novel

participatory approach, both in the process and in output, was the complete absence of geo maps, in stark contrast to previous, technocratic, spatial government visions. This change of course affirms the tacit promise of participation and the idea of a human-made future.

However, beyond this affirmation we observe an ambivalence in this dual future-orientation that could manifest in serious tensions as the future unfolds. As a mobilizing strategy the vision 'opens up' the future explicitly urging for situational and deliberative strategies and action in both time and space. However, as a panorama or a future cause, it renders and legitimizes the future as more or less inevitable and unquestionable, significantly closing down on alternative future geographies to emerge over time and direct the course of action. Since both are premised on the same participatory process and therefore might put a legit claim on the 'tacit promise' made, subsequent strategies including policies, plans and actions will inevitably be subject to the overarching politics of the real. Like in most government visions and visioning processes these politics are not explicit, nor reflected upon. Yet the move towards public involvement in these processes makes the need for such reiterative reflection even more critical (Maze, 2019).

In order to expose the performative effects of such visions and reflect on the tacit promise of participation, two questions need to be addressed in further research. First, research needs to direct to the dependency on the particular framing of future causes such as 'energy transition' and 'smart connected cities' and their performative effects on situational strategies, in particular how they shape participation or citizenship in programs, projects and practices. Second, the 'shared values' and subsequent restrictions, assumptions, and expectations that are implicitly scripted into a vision and the extent to which they provide a moral entitlement to take for granted the future behaviour of actors based on performances in the past (Ruben, 1972) should be subjected to scrutiny.

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Abstract for Anticipation Conference 2019: 'New Ideas Sessions.'

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Title: Affective Heritage Futures: Community Connection and Inclusive Evolution.

When imagining places for communities to thrive and convene, architectural and design innovators invariably embed utopian visions of the future in their concepts. But what of the spaces and places that have been *preserved* for future generations to inherit? Unstable but enduring in that preservation, these valuable places are consistently ascribed a retrospective cultural interpretation imposed by officially defined notions of historical import. My research seeks to democratise how we understand community connection to sites of local heritage and its role in future identities, and finds affinity with the ideas presented in Moshen Taheri Demneh and Dennis Ray Morgan's recent article *Destination Identity: Future Images as Social Identity* (2018). They ask '[w]ho owns the future?'(p.54) when we consider how positive social changes can be made, and this question I argue, is intrinsic to how we evaluate cultural heritage. In globally anxious times, what and how we preserve has become a key discussion in heritage research and policy as our history rapidly piles up in our present (Harrison, 2013). Although policies are trying to respond to this climate, many sites are still excluding or if not, struggling to include the diverse communities that they serve.

My current research revolves around two heritage sites in the south-east of England, that represent British military history and the post-WW2 social housing movement. The work seeks to understand and articulate how diverse contemporary communities experience the cultural materiality of these sites on an embodied, sensory level. The Victorian Newhaven Fort on the Sussex coast is in a period of redevelopment and enmeshed in the struggling town's identity and Wyndham Court, a 1960's block of 'utopian' Brutalist council flats in Southampton, is through its listing, unable to adapt to contemporary needs of the residents. The research crosses disciplines and

boundaries to include the various material, social and cultural networks that constitute place and asks what are the affective qualities that define if people connect to or reject these sites? This work seeks to include non-representational modes of communication, the qualities and networks of affect and moves to represent that understanding in a way that disrupts how we think about 'heritage'.

Demneh and Taheri argue that 'Images of the future create social value and power', and those images are related to historical actions (p.55). Heritage sites have the opportunity to support individual and collective identities, but often appear to remain in representational stasis, regularly alienating the energies that move around them and entangle with their affective qualities. Alongside a rich textual analysis, I will be creating 'scenographic' visualisations of those encounters so stakeholders can better understand how and why communities might embrace or reject sites. I hope this will inspire new ways of thinking around how to participate in the design and development of heritage for the future. This in turn will stimulate positive cultural connections that craft the narratives which Demneh and Taheri argue engender shared visions of collective and connected future societies (p.59).

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Anticipation 2019

New Ideas Session Proposal (Revised May 2019)

How the university's possible futures are enabled or constrained by four contested ideas of the university

PhD Thesis, Swinburne University of Technology, Melbourne, Australia

This presentation explores how today's discourse about possible futures for the Western university is enabled or constrained by four co-existing, contested *ideas of the university,* tacit cultural constructs that shape understanding of the university's social role and purpose:

- *the traditional idea*, derived from Newman's *Idea of the University* (Newman 2012), now present in resistance mode in universities,
- *the managerial idea*, the dominant idea in the extant discourse, shaping the university as organisation,
- *the reframed idea*, emerging from within the university, shaping initiatives to create socially focused universities distinct from the managerial university; and
- *the dismissive idea*, emerging from outside the university, viewing the university's purpose today as having little relevance.

The primary research question is: how is the emergence of possible futures for the university enabled and constrained by contested ideas of the university in the present?

The research framework is grounded in a foresight ontology (Petrov 2010; Poli 2011; Miller 2018), a social constructionist epistemology (Phillips & Hardy 2002; Fuller & Loogma 2009; Karlsen, Øverland & Karlsen 2010; Fumasoli & Stensaker 2013; Barnett 2017) and a foresight methodology (Slaughter 2002; Giaoutzi & Sapio 2013; Popper 2013). Foresight methods used are: (i) the *Three Horizons* (Sharpe 2013; Sharpe & Hodgson 2017) to map the existence of the four ideas; (ii) *Causal Layered Analysis* (Inayatullah 1998; Conway 2012; Haigh 2016) to identify images and assumptions shaping the ideas, (iii) *Scenario Archetypes* (Inayatullah 2008; Curry & Schultz 2009; Markley 2013) that build on futures identified in the literature to develop possible futures for the university; and (iv) *Backcasting* (Quist & Vergragt 2006; Bergman, Karlsson & Axelsson 2010; Tuomi 2012) to identify new pathways for the university's futures to inform decision and policy making in the present.

The thesis connects with the current state of the field by identifying, analysing and interpreting five distinct literature sets:

1. philosophical perspectives on the idea - what a university is and should be (Jaspers 1960; Pelikan 1994; Scott 1996; Turner 1996; Delanty 1998; Smith 1999; Barnett 2003; Peters & Barnett 2016);
2. the idea as justification for resistance to the managerial university and the development of alternative university structures (Miller 1995; Amsler 2011; Bailey & Freedman 2011; Dreger 2017; Kalfa, Wilkinson & Gollan 2017; Goodman 2018; Manathunga & Bottrell 2019);
3. the university as organisation - what is does and how it does it, including structure, leadership, management and work (Marginson 1996; Bleiklie 1998; Greenwood & Levin 2001; Deiaco 2009; Jensen 2010; Smerek 2010; Campbell 2018);
4. the external context for change shaping the university in the present and its possible futures (Marginson 1996; Hayward & Voros 2006; Sardar 2010; Tight 2013; Stein & de Andreotti 2016; Hall 2016, 2018; Germov 2017; Scharmer 2017; King 2017; Navitas Ventures 2017; Ramirez 2017; Eshleman 2018; Richards 2018); and

5. possible futures for the university indicated by scenarios, images, metaphors and assertions in individual texts (Miller & Miller 2003; Vincent-Lancrin 2004; Pearce Snyder 2006; Adam & Groves 2007; Universiti Sains Malaysia 2007; OECD 2008; Huisman, Boer & Bótas 2012; Ithnin et al. 2018).

The presentation reports on the identification, analysis and interpretation of the four ideas in the literature, their underpinning assumptions and embedded futures:

- identifying the unchallenged "in-house assumptions" (Alvesson & Sandberg 2011) that underpin and sustain each of the four ideas;
- identifying the image of the university's assumed future embedded in each idea; and
- proposing a framework for expanding today's discourse that moves beyond the single 'way of knowing' the university in the present that each idea generates (Voros 2008; Judge 2010; Floyd 2012; Alvares 2014; Andreotti 2016) and allows the emergence of possible university futures.

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REPRODUTOPIA; a mobile exhibition about reproductive technology and the future of families, relationships and intimacy is currently being developed by Next Nature Network, *"the international network for anyone interested to join the debate on our future – in which nature and technology are fusing"* (NextNatureNetwork, 2019) together with the Athena Institute (VU University, Amsterdam). In light of the vision that emotional responses are informative when it comes to the ethical concerns surrounding technological developments (Roeser & Pesch, 2016; Sardar, 2010), as well as the opportunity design fiction holds to promote reflection on these emotions and the assumptions about progress and the future that they disclose (Heidingsfelder, Kimpel, & Schraudner, 2017; Siune et al., 2009) this exhibition is aimed to stimulate the public debate about the societal impacts of reproductive technologies in the near and far future by providing relatively utopian visions on the future of reproduction.

With a case-study on REPRODUTOPIA *– a speculative family planning clinic in which visitors are welcomed by consultants and invited to create their own future family plan: e.g. do they want to be multi-parents, reprogram skin cells into sperm and egg cells, select and optimize embryos with AI –* we, on the one hand, want to study the values, frames and worldviews of the exhibition visitors *"tell us what the desired future of reproduction looks like?"*; and on the other hand, want to study which design principles work to encourage fruitful deliberation in order to contribute to the knowledge base on speculative design and deliberation *"tell us what in this experience makes you think or feel like this?" .* At first glance these aims might seem to go hand in hand yet our pilot study has shown that encouraging imagination might mean letting go of the need to control and measure - studying impact can get in the way of stimulating the processes that create this impact – yet not keeping track of the learned hampers the exchange of knowledge. Moreover, without substantive indications of the relevance of speculative design projects, there might be no budget and no projects altogether.

With our study we find ourselves at the intersection of speculative design and public deliberation. The value of deliberative initiatives is currently being reframed from 'impacting scientific governance' to 'cultivating individuals capacities' (Davies et al., 2009; Selin et al., 2017) as there is a distinction between small-scale learning and institutional change. In this session I would like to reflect upon the tension between:

> a) the desire for unrestricted, intuitive and creative design and enjoyable conversations [and the small-scale learning this sparks]; and
> b) the desire for measurable impact and the creation of scientific knowledge [leading to institutional change].

Furthermore, I am interested in the performative dimension - as for instance described by Ferrari & Lösch (2017) - of the future envisioned in the exhibition and the tension between this steering capacity of the exhibition and inclusive public engagement.

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Synthetic Biology: on the feasibility of anticipating future dynamics in Complex Systems using Technology Assessment

The symbolic distinction between what is considered alive and therefore natural, and what is considered artificial and therefore technical, is eroding rapidly. Although still categorized as technologies, Artificial Intelligence, Neurotechnology and Synthetic Biology require a critical reflection on what is commonly perceived as technology, and to what extent this categorization might hide certain underlying complexities. Furthermore, positioning these technologies in the same category as the internet, railroads and microscopes might reduce our ability to anticipate their future impacts.

According to systems biology, anticipation in the broadest sense is not a strictly human affair: biological life has been able to sustain itself on earth without human interference for at least 3.5 billion years through various forms of anticipation. Forming a model to anticipate the future and subsequently acting accordingly to what was predicted made it possible for living systems to persist on earth despite constant entropy (Friston, 2013)[1]. Modifying living, and thus self-preserving systems through the use of Synthetic Biology might introduce future dynamics that require an entirely different approach to anticipation then used in the past. Those involved in Anticipatory Studies might even consider to what extent *any* approach is equipped to anticipate future dynamics in highly complex systems such as those emerging from, for instance, Synthetic Biology. To provide a partial answer to this question, I will investigate to what extent a commonly used approach, Technology Assessment (TA), is equipped to anticipate the future dynamics within complex systems such as those emerging from Synthetic Biology. My current hypothesis is that TA is unequipped to sufficiently anticipate the future dynamics of complex systems, and therefore it needs to be extended or replaced by a different approach altogether.

To answer the research question, I will survey Synthetic Biology literature to gain a better understanding of the methods and technologies used during the development and engineering process. Survey both Complex Systems and Systems Biology literature to gain a better understanding of the dynamics in play with regards to the hybrid systems emerging from Synthetic Biology. As well as Technology Assessment literature on complex systems and how they relate to Synthetic Biology. I will identify relevant concepts, issues, and theories found in the field of Anticipatory Studies (and related areas). Finally, I will offer suggestions based on Anticipation Studies that might be useful to elaborate alternative approaches to Technology Assessment (or alternative[2] TA methods) better suited to anticipate future dynamics in complex systems. That is to say: approaches that result in scenarios that describe future dynamics closer to how these dynamics eventually unfold. For the sake of discussion, one might wonder if anticipation should remain a human affair, or if it might be desirable to embed a form of anticipatory algorithms into the complex systems themselves. Furthermore, the distinction between anticipation as a human act, versus anticipation as a quality of biological systems should be discussed, as the line between both forms of anticipation becomes potentially blurred when dealing with synthetic biology.

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Anticipation 2019

Curated workshop

Live Policy Studio: Anticipating Pensions Reform

Themes

Design by anticipation, performative anticipation

This generative session will throw up insights and questions about how pensions in general and women's financial futures in particular are anticipated in public policy. It brings together perspectives from philosophy (Brassett), political science (Vesnic-Alujevic), financial services (Jenkins) and design (Kimbell). Building on work in academia and by the EU Policy Lab team in the European Commission's Joint Research Centre (JRC), this pop up 'policy studio' will deploy methods from participatory foresight and design combined with social science and the humanities to examine how people's futures are imagined in pensions policy.

As a workshop, the emphasis will be on enabling participants (n=25) to explore an area of public policy through multiple lenses resulting in novel insights about the topic and about methodologies for anticipating futures in public policy. In so doing, the workshop turns a critical eye on the growing visibility of practices associated with professional design in developing policy such as the emphasis on idea generation and accounting for people's experiences, recognizing the institutional and ideological drivers that co-constitute experience (eg Mintrom and Luetjens 2016; Julier 2017). The workshop will make use of a new participatory design game (Brandt 2006) developed by JRC as part of a broader project exploring the future of government 2030+ using foresight and design (see JRC 2018), in which Vesnic-Alujevic and Kimbell were both involved.

Taking UK pensions policy as a live case through the work of doctoral student Jenkins, the workshop will open up issues about the ways that long-term public policy issues are imagined. Pensions policy exists through multiple actors, spaces and scales, resulting from decisions made at both the level of individual – for example choosing when to retire or, at the system level, setting legislation to determine criteria for state and private pension policies (John 2012; Thane 2000). The consequences of these decisions span generations.

The key activities are

1. Setting the scene via a **briefing** on UK pensions policy, its history and how different ways of anticipating citizen's futures are enacted in policy, regulation and infrastructure (Jenkins, Kimbell)
2. Using a participatory **design game** developed by JRC. This will include a brief overview of four scenarios and introduction to key steps in the game, during which participants will work in small groups within specific scenarios to explore potential new alliances and the implications for women's pensions (Kimbell, Vesnic-Alujevic)
3. **Critically assessing** the institutional and professional logics, norms and organizational cultures shaping how women's financial futures are imagined (Brassett, Jenkins, Vesnic-Alujevic)

Woven together into a novel format, these activities will allow participants to deconstruct the ways that women's financial futures are anticipated. By organising this policy studio as a multi-disciplinary workshop, the aim is to bridge disciplinary traditions and research and action through inventive social research (Marres et al 2018), through which new configurations emerge that exceed pre-existing framings. The approach will draw on the potential for design's material practices to negotiate uncertainty and possibility (Pink et al 2018). Using the JRC game will enable participants to actualize and anticipate different futures through the four scenarios developed by JRC. The expected outcomes of this workshop will be at two levels: offering insights into how women's lives are imagined, resourced and made visible in pensions policy; and methodological, through the combination of scenario planning and design game approaches to open up systemic, cross-generational public policy issues.

Requirements
Small tables with seats for 4-5 people

Professor **Lucy Kimbell** is director of the Social Design Institute at UAL. Recent publications offer a critical lens on the emergence of 'social' design and design for policy. She held a AHRC fellowship in Policy Lab in the UK government's Cabinet Office (2014-15) and worked closely with JRC on the Future of Government project (2017-19). She is co-investigator on ESRC funded projects exploring smart regulation and the impact of AI. *(lead)*

Dr **Jamie Brassett** is Reader in Philosophy, Design and Innovation and Course Leader, MA Innovation Management at Central Saint Martins, UAL. His research spans innovation, design, philosophy, trends/foresight and literature. *Deleuze and Design*, co-edited with Betti Marenko, was published by Edinburgh University Press in 2015. Books in development include *Superheroes and Excess. A Philosophical Inquiry* (Routledge 2020) and *Anticipation, Creativity & Design* (Routledge 2020).

Daniella Jenkins is a PhD student at UAL funded through a joint studentship with the Policy Institute at Kings College London and in association with the Pensions Policy Institute, co-supervised by Pat Thane (Kings) and Lucy Kimbell and Rebecca Bramall (UAL). With a background in financial services, Daniella's research explores how women anticipate their financial futures combining perspectives from design, foresight, cultural studies and the history of UK pensions.

Dr **Lucia Vesnic-Alujevic** is a policy analyst in EU Policy Lab at the Joint Research Centre. She has worked as visiting lecturer in political communication at Zagreb University, postdoctoral fellow at the JRC Institute for the Protection and Security of the Citizen and a researcher at the Centre for European Studies. She completed her PhD in Communication Science in 2011 at Ghent University. Her research focuses on political communication, digital platforms, politics, European public sphere and public engagement with science and technology.

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2019 ANTICIPATION CONFERENCE

OLSO (NORWAY), OCTOBER 9 -11, 2019

Proposal from the Social Sciences and Humanities Research Council (SSHRC) in collaboration with Policy Horizons Canada (PHC), and Global Affairs Canada (GAC).

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Curated Session: Imagining Canada's Future: Creating new synergies with Foresight/ Knowledge Co-creation and Mobilization to address global challenges

The ever increasing velocity of change and complexity of our world, calls for a greater need to better understand the systems, the challenges, and the kinds of services we envision to support communities in the face of change. In Canada, partnerships across academic, government, business and community sectors are enabling joint efforts to look ahead and collectively imagine futures to help ensure we are prepared to address emerging economic, societal and knowledge needs, and to guide the best choices going forward.

This panel examines the recent roles of foresight, research, knowledge synthesis and mobilization driving new approaches to identify global challenges and enable collective action to inform policy making and decision-making across sectors. Since 2015, the Government of Canada has launched a renewed call for evidence-based decision making. Quality analysis and research are in demand to inform policy and practice for rapid response to critical issues as well as for medium and long term planning. Traditional environmental scan activities have evolved to include futures thinking and foresight as valuable resources in strategic planning toolkits.

This session will engage foresight experts, futures thinking and design practitioners in a review of recent leading initiatives in Canada to identify and address emerging and future global challenges. This includes the results of a rigorous horizon scan to identify top global challenges, led by Policy Horizons Canada and the Social Sciences and Humanities Research Council of Canada; a review of the work program resulting from "A De-globalizing World" horizon scan, led by Global Affairs Canada; as well as a number of unique engagement programs seeking to foster academic/government collaborations, notably with graduate students and early-career researchers.

Discussions will illustrate growing opportunities for collaboration given converging interests to better understand and prepare for futures, and to capitalize on the benefits of engaging a diversity of ideas, experience, talent and resources across all sectors.

Approach

The curated session will seek to engage participants in an interactive inquiry with a series of brief cases. Each speaker will present a perspective and supporting case for 10 minutes, followed by questions. Two speakers will first present on the collaboration between their organizations and how needs of their respective agencies has been served by it (SSHRC, PHC)

followed by moderated dialogue. The next three panelists (SSHRC, Graduate Student/GAC Laureat, TBC) will discuss how to operationalize collaboration in foresight activities at a policy analysis level and impact on decision making for their longer terms programs. We seek a final dialogue on the most critical issues emerging from the audience.

Themes and Questions
Why are we collaborating? How are we collaborating? How are stakeholders and various constituencies helping in shaping the understanding of changes, trends, impacts and implications? How to address systemic views and strategic futures in working with multiple stakeholders?

Given the unique contexts of foresight and futures practices, Anticipation 2019 provides an important opportunity to share and hear from practitioners and advisors leading policy strategies with creative and evidence-informed foresight. This year's focus on design and how various organizations can engage through their own fields and connect with others is conducive to interdisciplinary engagement, content and dialogue.

The different types of collaborations undertaken by SSHRC with Policy Horizons Canada and Global Affairs Canada respectively touch on several of the core 2019 conference themes.

Canada has a long history of futures thinking in public policy, going back to the 1960's and the original *Committee on Technological Forecasting*, through to today's *Imagining Canada's Future* initiative (SSHRC 2017) and Policy Horizons Canada. The panel proposes to present a unique Canadian perspective informed by our involvement in collaborations that bridge research, policy and practice.

Facilitators:
- **Ursula Gobel,** AVP Future Challenges, Social Sciences and Humanities Research Council
- **Peter Padbury**, Chief Futurist, Policy Horizons Canada
- **Maïka Sondarjee**, University of Toronto, PhD Candidate, Global Affairs Canada Laureate
- Panelist from Norway (Name to be confirmed)

References
Social Sciences and Humanities Research Council, *Imaging Canada's Future Initiative*

Policy Horizons Canada, *The Next Generation of Emerging Global Challenges, A Horizons 2030 Perspective on Research Opportunities, prepared for SSHRC*

Maika Sondarjee, 2017 GAC International Policy Challenge Laureate

Session Approach

A full 90-minutes session on **"How can collaborative work for the future be realized in anticipatory actions in the present?"**

- Introduction and overview
- Two speakers (SSHRC & PHC) present on the collaboration between SSHRC and PHC to identify future global challenges that SSHRC may consider for its Imagining Canada's Future initiative 2019-20 to 2021-22 followed by moderated dialogue with participants.

- The next three panelists (SSHRC, Graduate student, third panelist (TBC)) discuss their collaboration in terms of policy and practice research needs addressing international policy and engagement of early career researchers, followed by moderated dialogue.

Moderated discussion & Final Dialogue

Each speaker presents a perspective and supporting case for 10 minutes, followed by questions and provocation provided in a summary handout. Handouts describing our positions with some of the provocation questions can be passed to participants. Perhaps an exercise or open question for the audience can be included for the final dialogue. Questions in the moderated dialogue with the audience may include:

- What approaches and tools are being used to identify and govern future narratives?
- What are the issues and experiences in moving from top down structures and planning to pluralist processes and reflexive, "progressive" review?
- Are we prepared now to work with tomorrow's needs and challenges?
- How do we manage tensions between the short and long term approaches in the future?
- How can we better address the degree of multidisciplinarity to make progress on addressing future global challenges impacting domestic policies?
- How do we collaboratively address whether we need to inform a challenge through deeper thinking or raise awareness and shape the challenge?
- What promising approaches and mechanisms are being used to identify and govern future narratives?
- How do we balance rapid response approaches to emerging issues while attending to longer-term futures needs?
- What can be done to generate greater multidisciplinary and multi-sector engagement to addressing future global challenges that may impact research and policy-making?
- There is no future without futures literacy: How may current practices train future generations of academics and policy-makers in fostering collaboration and knowledge sharing?

Curated session: Co-Constructing City Futures:
Enabling Participation in Urban Planning Processes with ICTs

Curator: Ole Smørdal[1]
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This proposal for a curated session will be part of the 'Means and methods for making the future accessible' track and will examine the dynamics of how technology shapes participatory and co-creative processes in anticipating, designing and expressing urban futures.

The curated session will be an opportunity for interdisciplinary reflections on technology, participation and planning. The invited speakers represent an exchange between research and urban planning practices, and the session will provide opportunities for the conference audience to materially enact designs and methods that support generative activity. These democratic design experiments (Binder et al 2015) are central outcomes of the *Co-Constructing City Futures* project (Smørdal et al 2016; Pettersen et al 2017ab) and are based on reconfigurations of municipal planning practices and new modes of civic engagements in a large Norwegian city.

In recent years there has been a boon in the interest in (and use of) ICTs to facilitate citizen participation and engagement in urban planning processes. Despite noted challenges (Holman and Rydin 2013), the increasing ubiquity of mobile technologies and a push for more collaborative and communicative planning (Healey 1997) has seen ICTs embraced with the aims of reinvigorating citizen participation in the city, and improve how cities are planned and citizens live within them. The increasing interest in (and use of) ICTs to facilitate citizen participation and engagement in urban planning processes has generally been seen overwhelmingly in a positive light, with opportunities to deepen and broaden how citizens shape their cities (Evans-Cowley and Hollander 2010; Khan et al 2014; Kleinhans et al 2015; Levy et al 2015; Kahila-Tahani et al 2016).

Yet with this embrace some of the challenging or problematic aspects of ICT-led participatory urban planning may be overlooked or underappreciated. Given the widespread use and embrace of participatory ICTs for more democratic urban planning, there is still a need to reflect on the conceptual and practical issues regarding how the use of technology may or may not deliver on its promises or even have adverse effects or fail to deliver the benefits it is expected to. For instance, facilitating digital participation can simply magnify the complexity of information with which to make decisions; and does not guarantee representativeness of perspectives or how the perspectives are used in actual planning processes (e.g. Hasler 2017; Wilson et al 2017).

Furthermore, digital co-creation tacitly embraces an inherently interdisciplinary process of participation, involving a wide range of professional and non-professional stakeholders that must converge on a similar concept and 'speak a common language'. Such processes involve various dynamics of power and politics, and present both opportunities and challenges for the design and practice of democratic digital participation and co-creation.

We see a need to nuance this with an interdisciplinary reflection on (i) how technology shapes the breadth and depth of participation and co-creation, and the power relations within these processes; (ii) how outcomes of processes of digital participation in the city are shaped both for good and bad by the process itself and (iii) the practical lessons, challenges and implications emerging from the praxis of 'doing' co-creation.

In doing so we aim to (i) highlight some of the areas in which ICTs can have transformative impacts on urban planning and citizen engagement, (ii) how to avoid planning and participation being undermined by an overreliance or manipulation of digital technologies and (iii) consider the broader implications for governance and inclusion in the city.

We frame this discussion around two aspects of one may evaluate the lifespan of participation:

- the **breadth** of participation – meaning the extent to which participation is done to both cover a range of interests, stakeholders, groups etc and how much the engagement of citizens matters at different stages of the participatory process;
- the **depth** of participatory processes, namely how deeply participatory processes are undertaken, and how participation functionally operates to deliver outcomes that support the participatory process for all stakeholders.

We also consider three phases of the participation cycle:

- The **Intent** of participation: considerations about why is participation sought, by whom, and for what ends.
- The **Process** of participation: the actions and progression of participation, and the barriers that may exist.
- The **Outcomes** of participation: the end results of participatory processes for citizens, planners, cities and the participatory process itself.

Plan for the curated session:

- Introduction: Co-Constructing City Futures (10 mins)
- Reflections on impact from a municipal point of view (10 mins)
- Power and politics in urban digital civics (10 mins)
- Embodied exploration of different concepts of anticipation, facilitated discussion (20 mins)
- Roundtable discussion: Anticipation, co-creation and cities: Reflections on theory and practice on conceptualising and doing Co-creation: Interdisciplinary issues, pitfalls and successes of digital co-creation (30 mins)
- Summary and ways forward (5 mins)

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Pathways of anticipation: futuremaking and the design of social futures

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Efforts to understand the dynamic processes of learning situated across space and time, beyond the here and now, are presently challenging traditional definitions of learning and education. This is partly defined by technological developments creating new mobilities (Leander, Phillips & Taylor, 2010), transformation of learning environments (OECD, 2017) and how young people anticipate their learning futures and social change.

As such, this paper relates to anticipation issues on two levels. First, it is about transformative education and new models of education for the 21st century. Second, it is about how learners have anticipation about their own learning futures and key factors of 'futuremaking', connection past, present and future learning trajectories. Both levels builds on and further develops perspectives presented by Keri Facer in her book 'Learning futures' (2011).

The focus in this paper is on how young people take advantage of digital technologies in pursuing learning futures for themselves based on interests developed outside of school. Our interest is to explore and discuss how digital technologies create new possibilities for 'futuremaking' in the intersection between formal and informal ways of learning (Facer, 2011; Erstad, Gilje, Sefton-Green & Arnseth, 2016). This will inform us about how young people take advantage of resources in contemporary societies, made available through digital technology, and how such resources become part of their identity work over time. This thematic focus also raises issues about how boundaries between contexts of learning, and between past, present and future conceptions of the self, are created and sustained, about agency and trajectories of participation among learners in epistemic communities, and enables us to reflect on the broader sociocultural transformations of education in the 21st century (Bronkhorst & Akkerman, 2016).

In our research, we have used the term 'learning lives' (Erstad, 2013; Erstad, et al., 2016) to unpack a focus on students in motion across contexts of learning. On an analytical level, we have studied different knowledge practices, learning identities and transformative practices

that young people are involved in, across school and everyday life (Silseth, 2018; Silseth & Erstad, 2018). Digital media are defined as embedded parts of these practices. We refer to empirical data from one large scale ethnographic project in Oslo studying young people with different ethnic backgrounds across school and diverse community settings, with a series of interviews on young people's (15-16 years old and 18-19 years old) personal past, present and future trajectories.

In studying how young people create opportunities for themselves of importance for their educational futures across formal and informal contexts we relate to theoretical positions focusing on people within social practices and the provision of opportunities within different spatial settings. These notions of spaces and places as well as new mobilities among children in contemporary societies can be related to conceptions about communities and cities as where these movements take place and represent the environments and resources in which children interact. We also connect this to what Cope and Kalantzis (2000) describe as the "design of social futures," or the "what" of multiliteracies; "Instead of a focus on stability and regularity, the focus is on change and transformations. The breadth, complexity and richness of the available meaning-making resources is such that representation is never simply a matter of reproduction. Rather, it is a matter of transformation; of reconstructing meaning in a way which always adds something to the range of available representational resources." (p. 204). It is this transformation and what it implies in young people's lives we want to explore further.

In her book 'Learning futures', Keri Facer (2011) uses the concept of 'future-building' to criticize what she sees as the basic orientation of all education; "equipping young people to compete in the global economy of tomorrow as potential socio-technical futures that are latent in contemporary developments" (2011, p. 103). Facer defines this as inadequate in understanding how young people position themselves and how educational institutions need to find ways to address much broader orientations towards learning and living in digital futures. We ought, then, to explore how participants are not merely situated in time and space, but also how they are actively networking learning resources across space-time configurations (Leander, Phillips, & Taylor, 2010, p. 8). To analyse how people do this is particularly important in knowledge economies in which people are regularly faced with new challenges that require the innovative use of knowledge and expertise.

Anticipation about education and learning is important for the design of social futures. However, it is important to explore how learners' educational trajectories relate to their overall "learning lives", with their learning identities and trajectories of participation across different contexts of learning. The concept of futuremaking enables us to deal with complex issues considering how young people plan and play with resources that are part of contemporary media and technological practices for the purpose of envisioning or imagining future educational trajectories and possible selves. How students view themselves, in light of past and future trajectories has implications for what they can and will do regarding their future.

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Abstract

Here, a group of peers practice anticipatory learning together, drawing on their experience in peeragogical learning environments. Peeragogy is their method for active learning with colleagues, a term to describe how people generate, exchange, negotiate, and apply knowledge together. The goal of anticipatory learning "is not to be well adapted but to adapt well" (Downing 2007, quoted in Tschakert and Dietrich, 2010). These peers work towards that goal peeragogically in a work of design fiction grounded in the present but beginning to explore a possible future of learning.

A Fictional Peeragogical Anticipatory Learning Exploration

Charles Jeffrey Danoff
Joseph Corneli
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Charlotte Pierce
Lisa Snow MacDonald
Verena Roberts

In a room walled by full bookcases and dotted with lush plants, a wise woman sat facing a group of her peers and said, "I brought you here to reflect on our work together, to think about what anticipatory learning is, and try to understand how it happens."

"Well, let's see how it relates to what we've learned about peer learning," a peer said, "We've been exploring the value of interaction and the new connections it brings. We had all learned, at an early age, that 1 + 1 = 2. But when we collaborate, we sometimes find that 1 + 1 = 3 or 1 + 1 = 4."

"Would you mind going over that math again, please?" the wise woman asked.

"Take two people and a couch. Individually they cannot move the couch on their own. Only when they work together can they move the couch. If they work together well, they will be able to move the couch effectively and efficiently. So, when you have two people who work well together, you have the benefit of both of their talents separately and you have the benefit (plus alpha) of things that they can do together that they could never do on their own. In a very real sense, 1 + 1 = 3 or = 4 or, even, = 5."

Smiling, the wise woman said, "Gracias!"

The peer replied, "You're welcome! We can't measure the value of collaboration with a yardstick, nor can we be sure in advance what we're going to get out of it, but on a whole we see tangible benefits from working together. This is very different from more individualized, instrumental, ways of doing things. If you think about it, collaboration is an act of faith."

“At my university, when someone asks a question, or help with a problem that needs to be solved, usually a very complex one, they begin the email referring to the group as their ‘hive mind’. It is a powerful phrase to define *collective intelligence*, the ability to think together or ask for help,” a peer across the room said, “a way to achieve desirable outcomes that might not have been possible otherwise. leapfrogging hierarchical processes.”

"And let’s not forget that this is an embodied process,” someone commented. “Recall Owen (1992):

- 'Whoever come are the right people',
- 'Whenever it starts is the right time',
- 'Whatever happens is the only thing that could have', and
- 'When it's over it's over'.

In our work, people have come and gone, and sometimes they have come back again. Similarly, any edit made to our shared work is probably an improvement, or at least we trust that it aims to be one. So we ideally we will learn something from each change that takes place."

"I am reminded of a Serendipitous Learning Roundtable that I participated in years ago (Wilkoff, 2014). I have reconnected with individuals from that roundtable to complete multiple projects. It is often not until a new round of introductions are made that we remember that we know each other because of our participation in that original serendipitous event. This makes me believe that the patterns of learning, working and collaborating together, are indeed the ones that are meant to be. When we prepare to learn, we must be ready to expect the unexpected."

The wise woman next asked "How are we to better learn today for sustainable tomorrows?"

"Can we make a roadmap?" someone responded.

A fellow peer was not immediately convinced, and said, "Perhaps the idea of a roadmap, even a 'distributed' or 'emergent' one, is too prescriptive in this case."

Another argued, "I think a roadmap is a good start for every project. It makes clear the initial visions, expectations and commitments of the group. At the same time, it must be adaptable and open to new and previously unforeseeable paths. Learning is not a linear process, and it doesn’t happen in a vacuum. Our goal is to build a deeper understanding of situations that were not visible or clear at the beginning. That involves looking forward as well as looking backward."

“OK, but maybe it’s not a roadmap anymore. Maybe it’s a story.”

The wise woman then said, "What lessons should we not repeat and how so?"

"We should stop recreating the wheel," a peer replied.

WIth a look of acknowledgement another peer said, "There are indeed lots of resources out there, and much to be gained by bringing together people with different perspectives and backgrounds. This can help ensure that nothing is missed."

"It seems like we are continually working out how to do this more effectively. In principle, there’s no limit to humans can achieve. In practice, there are lots of problems in the world. What’s our specific contribution?" asked someone else.

"Enlightened self interest can be an effective glue, whether it’s about personal satisfaction or group survival. So one thing we can do is work to create dialogues between

parties who are seriously concerned about specific problems, so we all learn from each other." another peer replied.

Smiling wryly, a peer remarked, "We can't beat evolution, so let's join it!"

With a face that looked like she had her own ideas about the question, the wise woman asked, "How does this relate to the themes of learning through informal, provocative, and unexpected practices, and by 'hacking'?"

"A continually revised guide book is one hack for this process. Maybe there is no way around the fact that keeping it up to date and improving it is a difficult and time consuming endeavor, but the good news is that this work has many rewards, as we've seen with the '*Peeragogy Handbook*' (2016)."

The wise woman smiled**,** "It seems that the bonds of friendship are what have made this project sustainable over the long term. We have created a space where we can take some risks, and thereby, learn together. Extending that safe space and those friendships will help enable more people to practice, learn, and adapt together."

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Tasting the Future

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The 2018 IPCC report gave us 12 years to take radical action to avoid catastrophic climate instability.[1] Other reports confirm the need for urgent action.[2–6] Yet, people and governments are struggling to respond.[7] *Tasting the Future* investigates how embodied design, using food and eating as anticipatory actions for future world-making, might assist us to break this impasse—shift the scale of the crisis to the scale of the body, make it personal, material, sensual, relatable, so that societal actors can envision new futures and act. As a research programme, *Tasting the Future* underpins context-specific projects and targeted participatory actions to assist civil and civic society actors to common specific issues, imagine what Beckert would call *imaginaries of the future,*[8] then collectively negotiate the necessary infrastructure to transform these imaginaries into *implementable nows* through new practices, policies and technologies. This process encompasses the two 'necessary but distinct components' of anticipation: 'a forward-looking attitude and the use of the former's results for action.'[9] It leans powerfully on Beckert's notion that present imaginaries of future situations can provide orientation in decision making, despite the incalculability of outcomes,[8] and 'allow actors to move beyond inherited thought patterns and categories by bringing them into an *as-if* world in which given reality is surpassed and a different one considered.'[8,10] *Tasting the Future* leverages Design's world-making capacities[11] to bring forth new practices, policies and technologies that are personally meaningful, contextually relevant and ecologically impactful. It reorients embodied design methods[12,13] towards food and eating, to disrupt assumptions and ensure engagement. Design inquiry and the food domain are recognised as potent loci for anticipation.[14,15] *Tasting the Future* furthers this scholarship by introducing food and eating as anticipative actions for world-making.

Two projects will be drawn from to exemplify the approach. *The SHIT! project* aims to help people befriend and tend their gut microbiome the way they might tend a garden. Our gut is a black-box system containing a hidden world over which we have little awareness or control. Food consumption and defecation are caught up in rich cultural arrangements saturated with social norms, rituals and taboos. Yet, our alliances with the microbes in our gut go largely unnoticed unless we encounter digestive problems. Our gut microbiome plays a crucial role in health and well-being.[16] As many as 20% of people, worldwide, suffer from chronic gut issues.[17] Befriending our gut thus seems wise. *SHIT!* brings together chefs, fermenters, gastroenterologist, public health organisations, bacteria, eaters and design researchers to consider a) how to cultivate meaningful relationships with our gut microbiota, and b) what kinds of changes might be wrought in the food system to support the resulting imaginaries. In complement, *The Soil project* considers interconnections between soil and more-than-human health. For half a century, industrial approaches to agriculture have degraded soil and environment health through land management practices, including expanding agricultural chemical use.[18–20] We find increasing evidence of a corresponding degradation of human and animal microbiota, associated neurological disorders and diseases.[16,21–26] *Soil* engages food producers, educators, policy makers, geologists, environmental economists, soil and gut microbiota and (human and more-than-human) eaters to consider a) what alternate imaginaries may be put in place to rapidly and radically alter food production and consumption processes, support ecosystem regeneration and whole-of-system flourishing, and b) what policy measures might assist in fast-tracking desired imaginaries.

Both projects use toolkits, food lab tools, food stuff and carefully scripted procedures of self-experimentation to engage participants with food production processes, build system models, eat, taste, feel and smell a way to future imaginaries and implementable nows. The aim is to spur a genuine interest in our otherwise taboo-ridden social discourse on shit, dirt and the food systems, develop new imaginaries, and begin an infrastructuring process. This approach 1) combines social imaginaries—collective beliefs about how society functions, that can enable or disable societal transformation and are critical to its realisation[27]—historical practices and existing infrastructure to understand, imagine and support transformative change; 2) develops food-oriented embodied encounter methods—by remodelling methods that leverage embodied engagement, estrangement and enchantment to respond to a complex impasse[12,28,29]—to surface new imaginaries in new ways of thinking; and 3) investigates how to infrastructure the new imaginaries to achieve real-world change. Infrastructuring invigorates democracy, sustains participation and design-for-future-use at community and societal scales; and is necessary to move from ideas to action and implement change.[30–34]

The ways we approach ecological breakdown are socially constructed through semantics, social reproduction and social practices. Transforming our approach, therefore, requires transforming our practices. It requires a shift in mind-set as a society and as actors in policy-enforcing nations. This research brings together human

and non-human stakeholders to anticipate seductive alternative practices that are personally and ecologically enriching; and collectively negotiate the necessary infrastructure to transform these imaginaries into 'implementable nows'. It productively disrupts current infrastructuring practices—through inclusion, and a bottom-up approach to policymaking—to ensure transformative outcomes, bringing meaning, value, responsibility and purpose to bear on questions of the environment.[35,36] It involves diverse stakeholders in engaged analysis to 'enrich the policy and public discourse about an Earth whose long-term future we are now making day-by-day,'[37] using food as aesthetically-charged 'materiality' so that alternative practices can become imaginable.[38–40]

Everybody eats and has expertise around eating. We eat for nutrition, socialisation *and* degustation.[41–43] All 17 of the UN's sustainability goals can be linked to food[44] and the food system is a major driver of climate change due to changes in land use, freshwater resources, and pollution of aquatic and terrestrial ecosystems.[19,20,45] Food is personally, socially, culturally, politically and ecologically potent, making it an appropriate and timely vector to reconnect humans with nature and respond to ecological breakdown. *Tasting the Future* positions food and eating as anticipative actions for future world-making. The research responds to calls for Future Studies to more fully take up work from Design Studies[14] and contributes to Anticipation Studies with new methods, new imaginaries and robust moves towards new approaches, policies and technologies.

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Anticipation and Human Rights

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Abstract
It is as important to recognize and remediate current human rights violations, as it is to anticipate and take proactive actions to ameliorate future violations. This presentation will first provide a brief summary of international human rights law in general and then specifically with respect to housing. It will consider how access to adequate housing facilitates a 'capacity to care' for others, thereby advancing the social contract between people and their government. Then the presentation will explore various global and national trends that we can anticipate will put pressure on the ability of the United States (U.S.) and the EU to meet the housing needs of minority and economically disadvantaged households. Trends that will be considered include: aging of society; increasing cost of and lack of availability of affordable housing; and climate change (i.e., sea level rise, coastal and urban flooding, extreme weather events, droughts, wildfires, internal climate change migrants). Interrelationships between anticipation, human rights, and fields such as foresight planning and housing will be explored. The presentation will provide comparisons between the abilities of one or two countries that have not recognized housing as a fundamental or justiciable human right (the U.S.) versus countries or regions that have, such as those in the EU.

Introduction: Human Rights and Our Capacity to Care
Safeguarding human rights–and the values that underpin them–for future generations is reliant upon achieving human rights standards today. This paper argues that the international human right to housing–as defined under the UN International Bill of Rights–is central to the enjoyment of other rights and serves to bridge the gap between human suffering and human capabilities. Importantly, expansion of these central human capabilities is associated with meaningful social transformation–as capabilities are not only measures of an individual's freedoms and functioning, but their capacity to effect change within the socio-ecological systems they inhabit. It is the position of the authors that the human capacity to effect this type of positive change–for current and future generations–is tethered to what legal scholar, Conor Gearty, refers to as our 'capacity to care'.

The extent of entitlements in housing rights at the domestic level is, in part, a function what Martha Nussbaum defines as a 'social contract' between a national community and its government. The question of what citizens will require of their governments to ensure provisions for all is central to the social contract. This idea is also captured in Gearty's view that values form obligations and subsequent capacity to care. From there we can establish not only what states are obliged to do, but what states ought to do to secure equitable futures, especially given that state sovereignty

protects states from having to implement rights-based housing strategies if they 1.) do not bind themselves to human rights instruments containing right to housing provisions, or 2.) do not infringe other rights, such as through housing policies that discriminate based on a minority or other protected status.

Anticipation and Housing

We argue that commitments to rights-based housing strategies today will not only create equitable outcomes through an increased capacity to care, but will prepare states for future housing needs through foresight planning and other forecasting initiatives undertaken through the development of human-centric national policies and programs. Safe and affordable housing takes time to plan and develop, especially if particular attention is given to current trends ranging from changing demographics (e.g. an aging population) to the expansion of urban gentrification. Populations in most developed countries around the world are rapidly aging and are on fixed or low incomes making the majority of adequate housing unattainable; given a generally low supply of affordable housing. Gentrification–a process where urban neighborhoods undergo significant renovation–is associated with a flux in the community, from long-time residents of mixed economic status to new residents of higher economic status. Many are concerned about where the former will live once gentrification has increased housing costs to unaffordable levels. In the U.S., families forced out of gentrified neighborhoods are essentially on their own. In California, many families are moving into the inner rings of suburbs, where the least expensive and lowest quality housing is present. Because of the balkanization of U.S. municipal government, the inner suburbs are becoming poorer and their property tax bases are inadequate to support major investments in housing and education.

Climate change can be anticipated to seriously impact access to affordable and adequate housing. More frequent and more extreme storms will cause major damage and will likely destroy entire communities and homes. More frequent and extreme heat waves will make homes uninhabitable and increase risks of deaths from thermal stress. Coastal and in-land flooding will also render homes uninhabitable from water damage and mold and mildew. It is anticipated that climate change will result in large in-country migrations and cross-border climate refugees adding to an existing global housing crisis. In the Global North, the impacts of climate change will continue to erode the stock of safe and affordable housing available to economically disadvantaged households. For example, in the U.S., it can be anticipated that more individuals will die in their homes from thermal stress if the U.S. fails to consider adequate and affordable housing as a core human right.

Research Approach

Qualitative methods will be used to build case studies of housing situations in one or two countries that do recognize housing as a human right and one or two countries that do not. For each country, information will be gathered that describe housing conditions, availability of affordable housing, and homelessness over time. A wide range of resources will be accessed, including official government data repositories (e.g., maintained by the U.S. Census Bureau, Scottish Public Housing), international

organizations (e.g., United Nations Special Rapporteur on Housing), and non-governmental organizations (e.g., Habitat for Humanity's international report on homelessness). Research reports on housing will also be tapped (e.g., Harvard University's annual state of the United States' housing report that has been published for the last 30 years). These types of resources will also be used to assess major trends that will affect affordable and adequate housing into the future mentioned above (e.g., recent IPCC reports).

Evidence that could be used to support the contention that a country actively anticipates housing needs will also be collected. This includes the use of trends assessments and scenarios to guide housing policies and programs, changes in governmental budgetary allocations in magnitude and for specific programs and policies, and changes in laws and regulations made to proactively address affordable housing issues. Lastly, key legal cases in the housing sector will be reviewed to assess whether courts are up-holding rights to affordable housing, whether those rights are formally declared by a country or not, and whether risk of violating obligations to the right are considered in policy and resource allocation decision-making.

The cases of countries that have declared that housing is a human right will be qualitatively compared to those that have not. Countries will be compared across a number of factors used to define adequate housing under international standards, such as housing cost burden as percent of income for low-income population, and homelessness per capita. Evidence of anticipation will be also compared.

Concluding Thoughts

It is argued that EU countries will be better prepared to address the threats to safe and affordable housing mentioned above. In the absence of a nationally recognized fundamental or justiciable right to adequate housing, such as is the case in the U.S., the current trends suggest a persisting housing crisis across the globe in the forms of lack of affordable housing and security of tenure, increases in mass evictions, refugee camps, and urban migration as a result of political actions and climate impact. From there we can anticipate that more individuals will be left homeless, that primary wage earners and school-age children will live in worse housing, and will miss more days of work and school due to poor health or location– further widening disparities and resulting in a cascade of other human rights violations.

The view here is that our capacity to care can stabilize a meaningful social minimum and preserve the home as a place where future generations can live in security, peace, and dignity. We conclude that public demand for a solid social contract and 'social minimum'–as guaranteed through a rights-based housing policy–provides members of all generations the human right to what legal scholar, Jeff King, describes as a 'minimally decent life'.

Politics of climate anticipation - The promises of underground carbon

In a time of climatic and environmental changes, anticipatory goals and concerns are increasingly incorporated within a growing number of disciplinary and university-based sectors and fields. The task for social sciences thus becomes not only to imagine alternative and preferable futures, but also to develop an engaged scholarship for critically examining how socio-environmental futures are imagined, calculated, pre-empted, prepared for and secured against (Adam and Groves, 2007; Anderson 2010; Aradau and van Munster, 2011; Hastrup and Skrydstrup, 2013). My contribution relies on on-going research that scrutinizes how environmental scientists, experts and managers seek to anticipate, prepare and manage environmental futures in an attempt to secure forms of non-human and human life in a time of climate change (Granjou, Walker and Salazar, 2017).

I am interested in the constitution of an emerging, speculative and promissory climatic regime drawing on the hoped-for potential of 'negative emission technologies'. Negative emission technologies are expected to help mitigate and adapt to climate change through using and enhancing the sequestering capacities of natural carbon sinks, such as oceans, forests or soils, after previous attempts to decrease anthropogenic greenhouse gas emissions have stalled (Hamilton, 2013). The Agreement reached at the 2015 United Nations Climate Change Conference (COP 21) in Paris signalled a shift in emphasis from stabilising greenhouse gas concentration in the atmosphere through cuts in global emissions, to the new centrality of using and enhancing carbon sinks in order to achieve a zero net global carbon balance (Aykut et al., 2017). This new speculative politics of climatic anticipation and its underlying expectations for the long-term storage of greenhouse gases in soils have not yet received the critical attention it deserves in social sciences (yet see the recent special issue in *Global Sustainability*, 2018, 1).

Building on an empirical investigation into the recent emergence of research at the juncture of climate and soil sciences, I develop a critical stance on the growing expectations of using soils as sinks in climate change modelling, forecasting and mitigation strategies (Granjou and Salazar, 2019). The investigation was part of a long-term collective research project involving multidisciplinary exchanges with soil scientists both as respondents and collaborators within my project. Drawing on the reading of scientific literature and a series of interviews with scientists working at the juncture of soil and climate research, I first discuss the challenges of modeling soils for climate change forecasting; I call for a more careful consideration of the situated, heterogeneous, and volatile dynamics of carbon within soils – that are both able to sequester *and* release massive amounts of greenhouse carbon into the atmosphere. Drawing on recent insights from the dynamic scholarship of environmental humanities and new materialisms that move away from conceiving of the material world as "dead matter" (Whatmore, 1006; Bennett, 2010), I then highlight soil's capacities to shape future climates including by fostering major planetary tipping points (such as permafrost thaw). I suggest how soil's future-making capacities open up alternative stories in which agency and change are not human-only prerogatives. I eventually call for a better consideration of soil no longer as an inert subsurface in the depth of which we would bury and try to forget all our unwanted 'things' (including carbon), thus voicing soil scientists' concerns for paying more attention to soils' situated complexity and vulnerability.

As a conclusion I suggest that enacting new cultures and frames for critical anticipatory thinking in the environmental field may require unsettling social sciences' disciplinary approach to de-constructing 'the social production of science', in order to foster a more interdisciplinary engagement with environmental sciences' anticipatory knowledge and

agendas (Kon Kam King, Granjou et al., 2018). Universities definitely have a role to play in this.

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Strategic Early Warning System for the French Nuclear Industry: An Hybrid Approach for Better Anticipation

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Extended Abstract

The environment of the energy sector is highly uncertain especially in the field of electricity generation. Indeed, the development of renewable energies, the price volatility of fossil fuels, the limitations due to global warming, countries' needs in electricity to develop their industries or secure their grid but also the risk aversion of populations are parameters, among many others, which can influence the choice of production means. Nuclear energy to produce electricity has gained ground in the 1960s and was at the heart of the competition between the 2 blocs during the cold war. Since that time, France became a major actor of this market through 2 main companies namely Areva and EDF. However, the tougher market conditions and some "hazardous" investments led Areva to have deep financial troubles. Therefore, it had to be recapitalized by the French Government (which was owning 92% of the capital) and was divided into 2 new firms i.e. Framatome and Orano. If most of companies in the sector are at best using scanning to detect changes, there is room for improvement concerning the detection and interpretation of weak signals that could lead them to anticipate. In addition of being at stake for companies due to higher uncertainties and fiercer competition, Poli (2017) underlines that the study of anticipation is gaining momentum. For instance, Seligman et al. (2013) posit that there is a need to develop a science of prospection. In the same vein, Beckert (2013) emphasizes the emergency for economics to reconsider the way it looks at the future. Congruent to that, this paper presents a new approach for developing a Strategic Early Warning System (SEWS) applied to the Nuclear Energy sector. SEWS postulates that surprises in an organization's environment rarely arise without a warning (Wack, 1985). Furthermore, it covers scenario analysis (Rohrbeck et al., 2015) aiming to create alternative pictures of the future (Bisson and Yasar Diner, 2017). Bisson (2013) proposed the following steps to build a SEWS: i) Define the scope, i.e. the time frame, analysis to be done and participants; ii) modeling of the studied environment through the determination of all drivers of change and evaluation of their impact and probability; iii) the creation of scenarios for the short and medium term but also for the long term; iv) the creation of strategic indicators; v) strategic simulation; vi) design of a learning organization; vii) scanning. As we did not intend to implement the sews, we focused on the 3 first steps of the framework. Hence, we collaborated with 5 experts of the field and used the Delphi method to gather

the necessary inputs for the 2 main types of market for the sector i.e. the mature and the emerging ones. In addition, it was construed that the most interesting time frame to be studied for the sector was 5 years. Thus, the nuclear industry analysis was done at a macrolevel through PESTELL (Bisson, 2013) encompassing political, economic, social, technological, environmental, legal and lobbying items. Yet, at a microlevel by studying firstly the five forces of Porter (1980) dealing with the bargaining power of suppliers, and customers, the barriers to enter the market, the product or services of substitution and the rivalry; then secondly with the five forces of Bisson (Bisson and Dou, 2017) covering the bargaining power of qualified employees, and distributors, the influence of mass media, and organization of quality, and the potential co-productions with other companies. Thereafter, we utilized a dedicated software "Stratbrain" to calculate based on the inputs provided by the experts, all the potential scenarios for the next 5 years as images of the future Nuclear energy market, their impacts and probabilities. Thus, for mature markets, our results show that scenarios' impact is low and probability high; in such markets, political aspects are the ones that impact the most and social characteristics appear to be the biggest threat. Concerning developing markets, scenarios' impact and probability is high; a special focus needs to be done on Russian and Chinese companies, economic and legal aspects. Based on these scenarios, a list of strategic indicators can be elaborated and help one organization of the sector to better anticipate events. Therein, this hybrid approach combining qualitative inputs and the use of machine power for faster and better scenario calculations could lead to better market shifts anticipation and might render the future exploration more accessible to any sector.

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In the same vein, qualitative method is necessary to be used with AI for strategic purpose to address the problem, help to choose the right algorithms, support the choice of parameters and guide hyper parameters to finally be used to interpret results for decisions.

Understanding and Managing Anticipatory Ecosystems: Case Finnish Foresight 2020

Matti Minkkinen, Laura Pouru, Burkhard Auffermann

Societies are increasingly saturated with anticipation. On the policy level, various future outlooks, scenario reports and plans are continuously drafted. Economies are partly built on fictional expectations (Beckert, 2013). Traditional media and social media generate and distribute diverse images of the future, and individuals and societal groups have their own hopes, fears and aspirations. Network approaches are a natural fit for studying anticipation, which Chris Groves calls an "environmentally distributed capacity" (Groves, 2017). In the network of societal anticipation, explicit foresight processes are only one part. However, they are an important part, because they provide opportunities to systematically explore and construct alternative futures and coordinate action. Recent foresight literature suggests that foresight is increasingly open, distributed and networked (Georghiou & Keenan, 2006; Wiener, Gattringer, & Strehl, 2018). System-level policy foresight is characterized by aspirations of shaping the future in the context of competing objectives, interests and time horizons (Volkery & Ribeiro, 2009). Despite the importance of the topic, it is difficult to find in-depth studies of "actually existing foresight" in the literature.

Our paper investigates Finland's national foresight system as a case of anticipation as a network and suggests ways to understand, visualise and develop the anticipatory network. The paper is based on our research project "National Foresight 2020 – Mapping of the ecosystem, evaluation of foresight maturity and future recommendations" funded by the Finnish Prime Minister's Office 2019–2020.

The Finnish national foresight system consists of foresight work done by various actors at the levels of local government and national government and coordinated by the Foresight Steering Group. In 2014, the Finnish Prime Minister's Office established a national foresight approach (Prime Minister's Office Reports, 2014). Since then, national foresight efforts have been significantly developed, for instance by publishing concise "drivers for change cards" based on foresight work in all Finnish ministries (Prime Minister's Office, 2017). However, for further development of the nation-wide approach a detailed overview of the interlinked foresight actors and processes is needed.

We suggest considering foresight as an ecosystem rather than the mechanistic system metaphor. By foresight ecosystem, we mean a dynamic and organic assemblage of diverse foresight efforts. Our paper analyzes the Finnish foresight ecosystem in terms of actors, networks, goals, foresight maturity, approaches, methods and outputs. The foresight work in the Finnish ecosystem stems from various traditions: technology-oriented foresight, innovation and business intelligence foresight, competence and education foresight, the tradition of futures research, the tradition coming from societal-political think tanks and the structured foresight processes of the national government (Ramboll, 2013 based on Hjelt et al., 2009). These actors have varied resources, methods and approaches for doing foresight.

The paper is based on empirical material collected during spring and summer 2019 using a nation-wide survey and interviews of key actors. We conduct a comprehensive mapping of foresight capabilities and modes of foresight in the Finnish foresight ecosystem. First, we heuristically utilize René Rohrbeck's model of organizational future orientation (2011) to get an overview of the information, methods, networks, organizations and cultures prevailing in the Finnish ecosystem. Furthermore, we investigate the foresight processes using three ideal-typical foresight approaches: 1) short-term, low uncertainty, 2) long-term, high uncertainty and 3) short term, high uncertainty (Minkkinen, Auffermann & Ahokas, under review). These are loosely analogous to Ilkka Tuomi's categorisation of probabilistic, possibilistic and constructivist foresight (Tuomi, 2019). Within each type, we distinguish between approaches characterized by high or low agency (proactive/exploratory) and high or low systems perception (holistic/analytical). These frameworks allow us to investigate the characteristics of individual processes and to situate processes in relation to one another. We also investigate interlinkages between foresight processes, potential sources of tension and the degree of centralization within the network.

Our paper contributes to studies of anticipatory networks by providing a detailed analysis and visual overview of a particular case: the Finnish nation-wide anticipatory ecosystem. Each foresight ecosystem is likely to be unique, but we argue that our methodology is suitable for studying anticipatory networks of various types. Our paper also suggests several questions for subsequent studies. What is the role of path-dependence and history in shaping an anticipatory network? What is an appropriate level of analysis for anticipatory networks, which range from networked individuals to organizations, cities, states and transnational networks? How do anticipatory networks actually contribute to decision-making and value creation?

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3° Anticipation Conference - Oslo

Symmetric valuation of past and future in the design of anticipatory agendas

- Revised version -

PhD Gonzalo Iparraguirre

Abstract

Based on the model called “presence of the future” and the political experience as a government official in Argentina, a methodology for the design of anticipatory agendas is proposed.

The future, as a dimension of time, is the source of all human action and, therefore, what allows the production of value, be it social, political, economical or any other. This model proposes that the value we assign to the future when conceiving it asymmetrically from the past, can be resignified through anticipation studies because they allow us to visualize the "other half" of the symbolic components that intervene in any decision-making process. The presence of the future affects any decision with the same relevance as the presence of the past and allows us to conceive a symmetric valuation.

The methodology of this model combines social imaginaries and cultural rhythmics, with focus on the becoming of knowledge that is not yet stabilized (the imaginaries of the future), and not only on past experience. Linear temporality naturalizes past experience as the basis of decisions and simultaneously the denying of visions and anticipations.

Latin american governmental agendas are analyzed as general examples of asymmetric valuation centered on the past. Considering the design of a strategic plan and urbanistic, touristic and energetic development programs, specific cases of planning at national and municipal level in Argentina are described.

Discussion

Following the overarching aim of this Conference from an anthropological perspective, how cultures use ideas of the future to act in the present, this model proposed to discuss how interventions in the temporality of the decision-making groups can generate changes in the present based in the imaginaries of future.

Management of decision-making processes implicates the synchronization of the three tensions of any temporality, so it is possible to diagnose which were the problems in the past, which are the current ones and which could be the ones to come by the presence of the future. Specifically, the rhythmic diagnosis relates the temporality of the group under observation, by correlating how time was conceived and used in the past (experience), in becoming (decisions) and in the future (visions).

Planning agendas of development in Argentina and in Latin America manifests that arrhythmic decisions are taken, in most cases, based on the presence of the past. The neglect of the sociocultural dimension in government planning, has precisely its epistemological root in a

constant that goes through the design of agendas throughout the continent: planning public policies based on the experience of the past unilaterally, ignoring the imaginaries of the future. The one-sided look towards the economy and infrastructure are evidence of a temporality that neglects the socio-cultural dimension of development. Development processes that integrate this dimension, although they require infrastructure of roads, buildings, mobility and access to resources, do not exhaust their impact on the work itself, on the built thing, but use them to convey knowledge, traditions, identity, that is, what defines and sustains every social group.

Summary of research

The research I've been shaping for more than 15 years generated a theoretical model called presence of the future, based on previous works on temporality, social rhythms, development and anticipation. Current research focuses on problematizing the notion of "future" as well as describing and exemplifying the theoretical and methodological tools produced, both from research and from public management. These seek to transform the action of designing agendas incorporating the value of the future into the equation of considering, asymmetrically and predominantly, the value of the past.

Research on anticipatory agendas allows to visualize the imaginaries of the future, make them operative as planning, and decision making tools. Simultaneous uses of these anticipation tools, builds a permanent record of the correlation between the presence of the past (what was prescribed in what was planned up to yesterday) and the presence of the future (what is apprehended today with incidence of tomorrow).

The purpose of this research and it applications is to make the future accessible through the design of development agendas and policy making, shaping anticipatory practices and networks. If our decisions in the design of agendas cease to be thought as anchored only in the past, then we begin to understand that the intervention on societies and resources has an unknown possibility in considering the future as the main source of our imagination and any process of valuation (economical, financial, artistic, political, social, among others).

Academy of the Future in Practice

Go Yoshizawa, Mineyo Iwase, Nika Ando & Keiichiro Tahara

Keywords: structural foresight, transdisciplinary research, sustainability, citizen science, co-creation

For many years a number of studies have been trying to illustrate how universities will or should be reformed under external pressures. Contrary to what the management literature has stressed, however, the organisational structure of universities has become more hierarchical and centralised in recent decades (Martin 2016). Where the organisational reform from within is at stake, transdisciplinary research (TR), problem-based learning (PBL) and education for sustainable development (ESD) as promising elements for future academic research and higher education have also struggled to comfortably fit into modern universities (e.g. Scholz 2017; Moust, Van Berkel & Schmidt 2005; Mulá et al. 2017). When a disruptive scenario for the future of universities depicts new practices and institutions for higher education, academic ethos to cultivate one's professional personality (or *Bildung*) is regarded as a key asset for present and future employability (Hammershøj 2018). Another innovative scenario expects them as collaborative partners for local sustainability (Blass & Hayward 2014). Under the circumstances we have been newly developing a transdisciplinary, problem-based, and community-oriented approach to future academic research and higher education. The concept of our approach was initially called *Satoyama* University, while *Satoyama* refers to a Japanese traditional sustainable socio-ecological system for rural land-use (Takeuchi 2010) and such state of capitalism is increasingly expected to replace conventional money-driven capitalism in Japan (Motani 2017). It was soon renamed Shimane Academia by reason that we suggest this approach should be more decentralised and loosely networked than universities, positioned as alternative and complementary to existing academic research institutes and higher education systems, and directed to a more specific local context. Shimane is one of local and depopulated prefectures in Japan and has the least universities in prefecture, but civil society organisations and community activities are relatively sustained and provide room for great potentials of grassroots activities.

Shimane Academia consists of a number of different activities ranging from fundraising, project design, player recruiting (researcher as well as local practitioner), proposal writing and administration to face-to-face gathering, informal exchange, site visit, online communication, lecture, seminar, workshop and annual meeting. The annual meeting has three main activities. First, researchers and local stakeholders from different backgrounds participate workshops to co-create transdisciplinary research and practice idea through deliberation on current and future economic, social and cultural issues in local areas. These ideas are examined to be feasible and sustainable by the participants and potential partners during and after the annual meeting. In the 2017 meeting, the participants identified 'hunting and wildlife management' and 'bread-and-butter job training and education' as key social issues and plausible project topics. Through the continuous discussions, a new project 'citizen-oriented digital archives

of mythology and anthropology' (CODAMA) was proposed and launched in the 2018 meeting, involving a wide variety of members from universities, city councils, local research institutes, travel agencies and civil society organisations. The CODAMA project is now being supported by Shimane University, a private foundation and central/local governments. Second, participatory outreach event and networking is innovatively designed to attract local children and researchers' family as well as the workshop participants and other community members. In 2017, we conducted a science communication event with a mobile microscope attachable to smartphone cameras and joined a community-based activity to renovate an old folk house. In 2018, the mobile microscope was further mobilised with the citizen science app 'iNaturalist' at a workshop for the hunting and wildlife management project. This app was founded in 2008 to serve a global community and to aid in the observation and identification of natural phenomena, allowing users to explore, observe, and discover the natural world by taking pictures of naturally occurring organisms and uploading the images to a global community of naturalists who crowdsource to identify the organism (Nugent 2018). After walking around a local farm damaged by wild animals and analysing the surrounding environmental conditions with iNaturalist, the participants then discussed and explored possible socio-technological solutions to wildlife damage and control. Third, we also organise interactive excursions. Whereas conference excursions are mostly oriented to consumerism, our approach is more ethical, social and community-based and contributed to rural development (Okazaki 2008; Cawley & Gillmor 2008; Pritchard, Morgan & Ateljevic 2011). The 2017 excursion was on dark tourism for Tatara ironmaking and the 2018 was on cultural tourism for a local myth. Researchers' family was also able to join the excursion or take a dedicated day-trip tour organised by local residents and travel agencies.

Our regional academia programme started with anticipating the academy of the future as a new synergetic movement of research, education and community development in which academic scholars and their families, creators and local residents can develop their own *Bildung* and collaboratively and sustainably serve to regional economy, society and culture. This programme then made us realise the relevance of tangible projects by visioning local societies, creating new values and working together with wider participants. Not based in any single institutions (i.e. universities, funds, projects), the participants involved in multi-layered foresight (cf. Dufva, Könnölä & Koivisto 2015) do not feel any power gradients but can join discussions on different kinds of issues, topics and research interests in a more flat, flexible and comfortable manner. With power-free relationships and networks, all the related actors share a sense of crisis in the depopulated and devastated socio-ecological system and each can then anticipate our desirable futures, commit to local issues and tackle social problems by their own – conducting research, reforming education, or promoting community service. They can also go back and forth between programme and project levels. Despite challenges to design, implement and evaluate the programme, expand the loose networks and find more sustainable management, this foresight activity performs not only as regional (Higdem 2014), participatory (Nikolova 2014), networked (van der Duin, Heger & Schlesinger 2014) and transdisciplinary (Gudowsky & Peissl 2016) but also as structural (Georghiou & Harper 2011), systemic (Saritas &

Nugroho 2012) and adaptive (Gibson et al. 2018).

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Anticipation Design: Participating in the construction of new social senses for education

The Language, Interaction and Construction of senses Laboratory (LINC-Design)[1] integrates the graduate program in Design at the Pontifical Catholic University of Rio de Janeiro-Brazil (PPG-Design/PUC-Rio). Working in the concentration area Design and Society, PPG-Design is located in the Theology and Humanities Center (CTCH) and, in line with the Center, develops research in the humanities context.

In the present session proposal, the general objective address to the question "Means and methods for making the future accessible?" and pretend to promote in the designer the sense of responsible participation along the challenges and complex contemporary demands, circumscribing him as an agent and as a subject of his own development and the development of their projects. The proposal is anchored in the research and projects of LINC-Design that aim to develop the sensibility of the designer for the anticipation of needs/demands/human opportunities with a view to the common good.

It is opted for the reflection-action circumscribed to interdisciplinary researches/projects that point to the participation of the Design in Pedagogical Political Projects in the field of Education. In this sense, methodological processes will be approached in favor of a formation in Design that anticipate respect to the multiple intelligences of the human being (Gardner 2015) and that participates in the formation of professionals inserted in contexts of Teaching-Learning with a view to the resignification of the artistic/visual/technological formation adopted in these contexts, mainly because this formation is, in most cases, subordinated to verbal formation (research that is inserted in the Design axis Editorial in Education that gathers a group of researchers from LINC[2]); and Design projects in favor of access to education for the majorities that, in countries like Brazil, are treated as minorities, for example, people with disabilities, black people and people with priority learning competence different from the verbal competence, with a view to respect for diversity, plurality and singularities, thus anticipating an education based on equity (research that is inserted in the Axis Design for an Inclusive Education that gathers another group of researchers from LINC[3]).

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[1] http://linc.net.br/

[2] Examples: Lacerda, Maira Gonçalves e Farbiarz, Jackeline Lima. **Reader's visual education through the lens of Design in Reading**: books for children and young people. PhD Thesis. Arts & Design Department. PUC-Rio, 2018. http://www.dbd.puc-rio.br/pergamum/tesesabertas/1412546_2018_completo.pdf

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Salles, Mariana Nioac e Farbiarz, Jackeline Lima. **"Nothing about us, without us"**: Design, a way to reduce the fragmentation in the process of inclusion of children with autism spectrum disorder in the teaching-learning environment. MSc Dissertation. Arts & Design Department. PUC-Rio, 2019. https://drive.google.com/drive/u/1/folders/0B0lKb2oIqhIvLS1wZ0t6UUxXS00.

In attention of the general objective, the methodological path to be adopted in the proposed session is based on reflective practice/reflection in action (Schon 2014), proposing a workshop consisting of three interconnected moments:

1. Contextualization - contextualize and reflect about sensitization researches from LINC designers;
2. fundamentation – signifying the Design in Partnership approach and the Meaning of words/objects technique, as a basis for the anticipatory actions of LINC; and
3. reflexive practice/reflection in action - propose an action of anticipation in favor of human sustainability, with a view to resignification of complex problems for which the designer is formed to project.

It is the nature of LINC to base a formation in Design that enable the future designer to act in favor of the announcement of new paths (Bomfim 1998). It is understood that these paths are both inscribed in social senses as they anticipate them, when they are responsibly projected.

The fundamental values of LINC are a responsible anticipatory act along the education with a view to pluralism, diversity and fairness. In this sense, authors such as Mikhail Bakhtin, who in his philosophy of the Act (1919) assumes the indissociability of art-science-life; Paulo Freire (1970); and Gustavo Bomfim, who sustains that the design can both maintain myths and social stereotypes and announce new ways, anticipating the construction of social senses, are the pillars of LINC-Design.

Next to them, the laboratory researches are supported by authors such as Norris (2004), Fairclought (2016), Gardner (1997), Couto (1997), Frascara (2000), Morin (2016), Schon (2008) and Teixeira (1970). All authors produce reflections on interaction, multimodality, situational context, multiple intelligences, body-mind dichotomy, spaces and discourses, interdisciplinarity, theory and praxis. Fundamentally, researches present the fragmentation of knowledge. From the researches, a hierarchy is observed that presupposes the primacy of the verbal over the visual and the spatial, of the disciplinarity over the interdisciplinarity and of the individuality over the collective.

It is defended in this session proposal the integration of Political Pedagogical Projects in Design with Political Pedagogical Projects in Education, considering that interdisciplinary results are the fruit of interactions between objects and actions that require mediator subjects with abilities to the demands of the contemporaneity. This one request that we are charged with the formation of subjects capable of interacting, in the full exercise of a collaborative autonomy, between different areas of knowledge.

The proposed workshop to be developed in the session will be coordinated by PhD Jackeline Lima Farbiarz. The moment of contextualization will be developed by PhD Alexandre Farbiarz; the basis of the methodological approach Design in Partnership will be presented by MSc Renata Mattos de Santos Eyer; the moment of presentation and practice of the technique of Word Re-signification will be given by MSc Luciana Oliveira; and the moment of reflexive practice / reflection in the action on the participation of the Design in Pedagogical Political Projects of Education, with a view to anticipating equity in favor of the common good, will be directed by Phd Maira Lacerda and MSc Lucas Brazil.

Keywords: Anticipation Design, Formation in Design, Crisis on Education, Political Pedagogical Projects, Interdisciplinarity, Construction of Social Senses.

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Anticipation 2019
Question: Means and methods for making the future accessible?
Format: Techniques Workshops

Title: FuturGov engagement game

This session invites participants to play the FuturGov engagement game. A game that uses people's anticipatory assumptions about what the future may look like to generate conversations, negotiations and collaborations. By designing a process through which participants immerse themselves into the future, take on roles that are not theirs, and strategize to achieve their goals, the FuturGov game generates a participatory setting in which a debate can take place.

The FuturGov engagement game has been developed in the context of the project: The Future of Government 2030+. A Citizen Centric Perspective on New Government Models (FuturGov project). It is a project carried out by an interdisciplinary team of the European Commission Joint Research Centre EU Policy Lab, a futurist (E. Stoermer), a political scientist (L. Vesnic-Alujevic) and a designer (JE. Rudkin). Grounded in political science, the development of the game is a design led project, that includes aspects of design, foresight and citizen engagement. The aim of the project is to use the future in order to raise a debate around new government models focusing on emerging changes in the relationship between citizens, businesses and government.

Designed to serve as a tool to reach the objective of the FuturGov project: to launch and spread conversations about possible future models of government, this session will be an opportunity to test and critically reflect on the gameplay.

The current version of the game sets as an objective for players to become the most influential by amplifying ones limited power through collaboration. Each participant, or group of participants, is asked to endorse the role of a type of citizen in 2030+. Each player or group of players is given a card set with action cards and actor cards representing each of the following categories: government+, influencer+, citizen+ and business+. Participants by stepping into a future scenario, enter into mediated conversations that reveal their anticipatory assumptions and expose them to other participants beliefs and expectations. This in exchange creates a debate, a safe place for discussing alternatives.

The project uses different sources of imagination of the future. Several activities throughout Europe were undertaken during the project: 1) citizen workshops to gather insights on people's hopes, desires and fears, 2) scenario creation (x4) build on the narratives that came out of the citizen workshops and reinforced by current drivers and trends, 3) design students concepts to make more tangible the future scenarios. The FuturGov game encompasses all of the above. It synthesizes the highly participatory and communicative actions set throughout the FuturGov project.

The game can be played by 4 to 8 people, up to 4 tables can be set up (one for each of the 4 scenarios).

Dr **Lucia Vesnic-Alujevic** is a policy analyst at the JRC EU Policy Lab, interested in digital media and digital politics in Europe. Before joining the JRC EU Policy Lab, she worked as visiting lecturer in political communication at Zagreb University, postdoctoral fellow at the JRC Institute for the Protection and Security of the Citizen and a researcher at the Centre for European Studies. She completed her PhD in Communication Science in 2011 at Ghent University. Her research focuses on political communication, digital platforms, politics, European public sphere and public engagement with science and technology. She has published in the fields of communication science, political science and science and technology studies.

Dr **Eckhard Stoermer** is a policy analyst at the JRC EU Policy Lab. His work focuses on developing and applying foresight approaches translating future changes into strategic insights for policy making. He has more than 12 years of experience in foresight research and consulting in various fields such as research planning, for policy making, corporate strategy and innovation. He is working on a broad variety of themes with focus on the future of public infrastructures (energy and water) and the future of work and skills. Eckhard sees foresight as a tool to support better decision making today and thus contributes to shaping the future. He holds an economic and social geography diploma degree and a PhD in economics and business administration in the field of innovation management from LMU (Munich). Before joining the EU Policy Lab he was senior consultant at Z_punkt The Foresight Consulting.

Dr **Jennifer-Ellen Rudkin** is a policy analyst at the JRC EU Policy Lab. Designer and researcher, her interests focus on developing a design activity that participates in current emerging social and societal issues. Trained at the ESADSE (École great Supérieure d'Art et de Design de Saint-Étienne, France) and at RISD (Rhode Island School of Design, Providence, USA), she holds a PhD in Design from the Politecnico di Milano, Italy. Prior to joining the EU Policy Lab team, she worked on the direction and coordination of international projects, events and workshops at the intersection of Design and Foresight; notably on the Future of Work, on Food Futures and on the development of Futures Literacy Labs, at UNESCO. She also taught Design at the Design School of East China Normal University (ECNU) in Shanghai, China.

Global Governance Futures

Curated Session

The main aim of this session is to discuss futures of global governance and anticipatory approaches thereto, generating interdisciplinary dialogue and fostering a network of scholars interested to further research the topic.

Currently, the Western-led international order based on the core-periphery power gap is being replaced by a decentred order in which no single power – or cluster of powers – is pre-eminent. The Great Divergence, which characterised the explosive growth of a gap in per capita incomes between the West and the rest of the world starting the nineteenth century until the early 1970s, has been gradually replaced since the 1980s by its opposite, the Great Convergence. Several scholarly formulae try to capture the ongoing transition from an American-led Western world towards a post-American and post-Western world, including "nonpolarity", "apolarity", "de facto zero-polarity", "interpolarity" or "decentred globalism". Recent developments challenge the relative stability the system of multilateral institutions had represented for several decades. Accelerated globalization, the fragmentation of "the West" in economic, political and cultural terms, as well the rise of new powers (i.e. the BRICS) and regional power centres (China) address the occurrence of diverging interests and strategies vis-à-vis the globally institutionalized order. Throughout the most serious global economic and financial crisis since the Great Depression, international financial institutions and other international organizations have tried to adapt to this power shift as to better reflect the emerging powers' role and place in the global economic power architecture. However, this process has been lately put to a halt, which has prompted some of the emerging powers, particularly China, to forge alternative financial institutions. Important is moreover that the normative consensus among actors to take jointly responsibility for global problems is fading in several areas. National interests and protectionist policies are in some countries instead put to the forefront. This goes together with an increase of authoritarian and populist politics, favouring unilateralist strategies. Of particular concern are the multifaceted crisis with which the European Union is confronted with, including the effects of Brexit, the rise of nationalistic movements across Europe, and the mounting issues of mass migration throughout Europe, particularly from refugees. Multilateralism seems to be falling apart in some areas such as free trade, migration/refugees and common security and defence policies.

There are also beacons of hope, however, for multilateralism. The adoption of the Paris Agreement on Climate Change and the Sustainable Development Goals (SDGs) in 2015 captured the engagement of virtually every member state of the United Nations as well as a multitude of concerned civil society organizations and other stakeholders. These agreements were manifestations of the capacity of the international community to formulate visions of a brighter future. At the same time these agreements could be a hidden Trojan horse for global governance - if states do not commit sufficiently to achieving the goals set out in these agreements, suboptimal implementation could deal a very damaging blow to the legitimacy of global governance in the eyes of people across the world. The pattern of internationally agreed upon aspirational goals that remain un-achieved is only too familiar for seasoned observers of multilateral cooperation of the past decades.

Although there is an increasing wealth of scholarly literature devoted to emerging powers, insufficient systematic research has been devoted to the implications for the emergent world

order of the gradual moving of these countries to the forefront of international stage. As the world is undergoing a paradigmatic power shift from a globalism centred in the West to a decentred globalism and non-liberal states are likely to have an increasing say in international affairs, at least five core questions need to be answered by scholars: How to manage relations between diverse modes of capitalist governance, including liberal democratic, social democratic, competitive authoritarian and state bureaucratic capitalisms? Will the emerging configuration regenerate the geopolitical conflict on the basis of political differences, or will it foster a more integrated geo-economics of peaceful competition under a new Bretton Woods system and/or a concert of capitalist powers? To what extent liberal and non-liberal peoples can work together in order to advance the global governance's public goods? What are the real consequences of "deglobalization", mainly promoted by populist nationalist? What would be the citizens' role in the future global decision-making system?

The session will have the format of a traditional symposium of five papers and a discussant.

Curators and speakers: Roberto Poli, UNESCO Chair in Anticipatory Systems, University of Trento, poli@skopia-anticipation.it;

Adrian Pop, National University of Political Science and Public Administration, Bucharest, adrian.pop@snspa.ro.

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Discussant: Riel Miller, Research, Policy and Foresight Section, Social and Human Sciences Sector, UNESCO, Paris, r.miller@unesco.org.

The panellists will primarily focus on reviewing the main challenges the liberal international order is confronted with, evaluating the prospects for inter-capitalist conflict and cooperation in financial-economic, political-diplomatic and security terms, and building an anticipatory global governance (AGG) framework of analysis.

The conference participants are invited to a dialogue on these and other related issues. By discussing them and debating the panellists' perceptions of them, the assembled group hopes for putting forward the stepping stones of a tentative anticipatory global governance (AGG) framework of analysis.

CURATED SESSION

Design, relational ontologies and futurescaping

Corbin Raymond, Bruce Snaddon, Alettia Chisin, Andrew Morrison, Amanda Steggell and Monica Di Ruvo

ABSTRACT

The core matter we address in this session is how we may live and learn together; relationally, ontologically and anticipatorily, in designerly/ing ways that allow the 'not yet' into the present moment (Miller, 2018). This is a question of care, an 'ethics of caring' (e.g. Tronto, 2013) in the present that challenges orthodox views of designing, for pedagogical praxis, design research and engagement.

This curated session addresses these issues with reference to the dynamics of making and making sense. It draws on a decade of Design education and Design research projects and shared work located in an emergent assemblage of design-based inquiry through the Cape To Cape network between South Africa and Norway. Our distributed, co-created and shared sensibility is connected to the location and refinement of 'shaping futures' by way of building a fluid understanding of an assembly of relations between context and conditions, legacies and prospects. In this, our project cases have been education-based yet also public facing in terms of participatory processes and engagement.

Moving from Deleuze to Braidotti to Barad, we trace relational ontological perspectives by reading between the theory and our pedagogical praxis; between practicing, making and doing in the field to research inquiry that diffractively illuminates the effects and affect of our experimental work in various places and spaces. We view place, environment and context not merely as location, but rather "'the everywhere'–the inner and outer; the earth, the sky and the ocean; the home as the world given and the world of our own creation" (Fry, 2012, p. 3).

A relational ontologies perspective is one of event-as-process, where 'becoming together' (Deleuze, 1987) and not just 'being together' acknowledges and works with the emergent relationality of relations as they come into play through pedagogical events and interventions. Our perspective and approach "is a question of arraying oneself in an open space, of holding space, of maintaining the possibility of springing up at any point…' (Deleuze, 1987, p. 353).

We share with Kearnes (2006) the view that "Design is always in a process of ontogenesis because it is in a complex relationship to a world that is itself complex and in motion: design contributes to such dynamism at the same time as being affected by this world of becoming" (paraphrased by Brassett, 2015, p. 32). In this the "ontological incompleteness of design" is signalled (Kearnes, 2006, p. 20). Design scholars Fry and Willis have expanded the concept of 'ontological design' and the importance, from a sustainability perspective, of how 'design designs'. Ontological designing according to Willis is: '(i) a hermeneutics of design concerned with the nature and of the agency of design, which understands design as a subject-decentred practice, acknowledging that things as well as people design, and following on from this, (ii) an argument for particular ways of going about design activity, especially in the contemporary context of ecological unsustainability' (Willis, 2006, p.70). Barads term, 'agential realism' further articulates such agentic action as intelligibility understood to be "an ontological performance of the world in its ongoing articulation" where "knowing is not a bounded or closed practice but an ongoing performance of the world" (2007, p. 149). In this view, design for sustainability is about matters concerning not only the sustainability of the designed object itself but the design of the relations located in current and future contexts (Fry, 2009).

We draw on Barad's (2007) concept of *diffracting* as a methodological 'cut' to open up and illuminate the emergent learning and futuring phenomena that may be enabled through experimental pedagogy and practice-based design inquiry. We advocate for a process of learning about learning that acknowledges our diffracting effect as actors in a processual and participatory pedagogy.

We refer to the notion of futurescaping as a mode and a means to make material the imaginary with the situational, the co-creative with the critical. For SUPERFLUX (Jain et al, 2012: online), '… design futurescaping channels multiple voices to create hybrid, humane alternatives to the deterministic, "business-as-usual" consensus future'. As a form of public engagement, they see futurescaping as suited to 'a future evermore deeply entangled in inter- and intra-dependent networks of people, artefacts, systems, and services'.

Similarly, in this Curated Session, we offer some of the ways we have approached the complexities of anticipating change towards survivable and sustainable futures. We do so by referring to experimentation in university level design education and nomadic pedagogy (with a travelling tiger fish), sustainable design practices and communities (including dragonflies), and the

articulation of co-creative imaginaries in design fiction (through the anticipatory persona of an otopus). Our work spans the desert sands of Namibia to the melting ice of the western Arctic. We present these through three linked acts of design based 'shaping futures': Provoking, Diffracting, Assembling. We suggest that such acts of shaping futures ontologically via design-ing (Lury, et al, 2018) may contribute to the emerging domain of Anticipation Studies.

We describe long term sustainability as a critical perspective on the appropriateness of design for local contexts and cultural settings. It implies a future-orientated design thinking where new alternative designs and alternative scenarios (that are in touch with reality) create critique on societal change and the responsibility of sustainable societal decisions and actions. We aim to unpack long term sustainability by drawing on the emergent field of discursive design methods as a critique of criticality and critical design. We also draw on the understanding that speculative design emerged from critical design. Therefore, we position the performative exploration of design foresight within the intersectionality of speculative design and discursive design as a critical design study.

We argue for the fostering of stronger links between design studies and future studies. We propose that the modality of design foresight may be recast anticipatorially is through performativity and the enactment of speculative design(ed) scenarios of futurescaping.

This curated session will move from presentations of exploratory work done in South Africa and Norway as prompts, towards an open dialogue within the session to gather inputs and critique from all present. In this way, we anticipate that momentums will be generated, which can then be leveraged by session participants in their ongoing futuring work.

Session speakers

This curated session will be led by: Prof Andrew Morrison, Oslo School of Architecture and Design (AHO), Norway (with exerience in design fiction, design methods and futures literacies) and with particpation from: Mr Corbin Raymond: Stellenbosch University (SUN), South Africa; Mr Bruce Snaddon, Dr Alettia Chisin, Ms Monica di Ruvo: Cape Peninsula University of Technology (CPUT) South Africa; and Prof Amanda Steggell: Oslo National Academy of the Arts (KHiO), Norway.

Digital Zoning - In the age of surveillance capitalism - can urban planning help regulate technology?

Kai Reaver

ABSTRACT

Elaborating on the term "Digital Zoning" – this paper discusses the use of urban planning procedures as a form of technology regulation.
Recent debate on risks to user privacy and surveillance in urban environments suggest a close link between spatial politics and totalitarianism (Zuboff, 2018). An interesting development in this matter has been the call for regulation from several high-level tech executives - portraying the rare case of a business sector requesting its own regulation. Additionally, various cities and public venues around the world, such as the city of Hobart, Tasmania, discussing the implementation of "tech-free zones," the city of San Francisco banning facial recognition, and a café in London experimenting with "tech-free spaces," signal as a whole a growing interest in developing theories and techniques for technology regulation in physical space.

As future 5G networks and smartphones will allow for highly precise environments for positioning, we will likely witness not only an enabling of a large amount of location-based services and applications but also the capacity to regulate such services based on their position in space. This functions in parallel with a technique called "geofencing", in which virtual perimeters are created for real-world geographic areas. This technique as a form of zoning may specify ways in which a physical space could have a digital policy. The paper demonstrates how this form of regulation may safeguard user privacy while allowing for a level playing field in which all digital services proposals are applied through the same set of regulations. This allows for a condition in which zoning provides a tool for authorities, public services, or planning councils to enforce an intended digital policy upon a specific district based on local needs or practices. Finally, the paper demonstrates various self-conducted experiments in Oslo, Norway with installations in public space as part of a larger body of research on the "Nordic Digital City."

TRACK
How does anticipatory learning happen?

Design Future Literacy in the Anthropocene: A Matter of Awareness

Manuela Celi, PhD
Chiara Colombi, PhD

The paper provides a critical discussion on the urgent need of a proper future literacy in design education. Without proposing a univocal model, the authors describe a series of possible steps toward a critical way of embracing and tinkering futures in design education.
According to De Kerckhove (2017), Design is the "form" of the project: an essence in becoming, therefore, an entity not closed and not defined. Design is inherent in the human condition, incorporated into our physical and mental being. In his reasoning on Future, Augè (2012) distinguishes sciences from the "disciplines of action". He argues that the utopias of the Nineteenth Century, thought by human and for human, had the limit of translating ideas not into open hypotheses rather into models and guides which act as an instruction manual. Nevertheless, the progressive loss of the ability of questioning a situation we witnessed in the last decades a is not consistent with a human and social perspective that have always requiring observation as well as reflection. "Design presents itself as serving the human but its real ambition is to redesign the human" as Colomina and Wingley suggest in their provocative "Are we Human?" (2016). They define the human condition as an unstable category characterized by its diversity, its plasticity, and its ability to modify its own abilities.
The Anthropocene era and the post-human condition, shortly introduced by these references, actually represent the challenging context that highlights the need for open ways to face change, especially for practices, such design, that has a reflective dimension (Schon, 1972) and for a meta-project of education. In regard of education, the work of Amsler & Facer (2017) that claims for critical anticipation inside educational projects is also inspiring.
With learning at its heart, this model has many practical implications for seeking to advance conditions of autonomy, democracy, and social justice in a variety of contexts.
Design, with its pervasive nature, has been the center of attention of educators for decades and represents a central theme on which critical, scientific and economic attention is focused. Acquiring knowledge and capacity to deal with futures means to discover new ways of making sense of the emergent present (or the thick present) and taking advantage of the unknowable as it starts to become knowable. In the actual context, moreover for designers, novelty includes objects and processes emerging from our activities (Poli, Rossel, Miller, 2013).
In the contemporaneity, where also the role of universities is required to change to answer to the increasing complexity and turbulence that characterize society and organizations, design education is required to act on the role of design as mediator among disciplines to promote not only multidisciplinary relations and connections but also to empower a constellation of actors able to enforce open innovation. The openness of such innovation needs to rely on a critical reading of opportunities and challenges in order to design processes and models that empower new ethics and aesthetics of futures. Anticipation empowered by Design education become a speculative tool and not a predicting reading which anticipates a predetermined solution. A metadesign approach should be privileged to open up new "futurescapes" instead of claim inevitable development based on past or present hints.
At the basis of the research there are several ideas joining design and anticipation studies.
Design has a huge responsibility in shaping goods, planning products longevity or life cycle. Therefore, future literacy has to play a strategic role in the design practice (Celi, Morrison 2017). Moving to a more theoretical level, the design capacity of imagining, shaping, and communicating new values and perspective can provide an epistemological contribution in understanding anticipation and anticipatory practice, through a transdisciplinary approach (Celi & Colombi, 2017). On an educational level it is widely acknowledged that design has a pervasive dimension and specific cognitive properties (Cross, 1982; Downton 2000, Oxman, 1999). Some of those are directly connected to the capacity of anticipating (Zamenopilos & Alexiou, 2007). Designing artifacts are a unique way of providing insights and theories, but the needed educational renovation requires a connection with the recent Anticipation literature (Poli, Rossel, Miller, 2013).

Furthermore, the authors work in the belief that in planning educational activities and objectives, the role of design cannot be limited to teaching methodologies and theories and therefore teaching a professional practice. In fact, today more than ever, design should push itself into strategic and organizational fields of education, identifying methods to enable metacognitive abilities.
The paper is based on the critical readings and juxtaposition of literature from Future Studies, Disciplines of Anticipation, and Design as well as anticipatory cases in design. How can we crossbreed design with anticipatory knowledge? What does it mean to be anticipatory in the design field? How can we nurture design education in an anticipatory way? Considering these questions as the challenges we are confronted with, the paper will suggest some hypothesis of how different anticipatory paths (Miller, 2015) can produce new approaches into design education.
The author will read the design process through the three types of conscious anticipation proposed by Miller (2015: 514): preparation, planning and discovery. Addressing present and long-term issues, from climate change to advanced design questions, and the responsibilities connected to these situations, design involves especially the third type of conscious anticipation that is the most representative of the design practice but also the less codifiable. Designers-to-be need a proper anticipatory education that not only provides them with tools, strategies and methods but also provides metacognitive skills and the intellectual capital needed to design possible sustainable and positive future. Within this perspective, the authors will propose a road map for a design anticipatory renovation.
While research and scholars have been mainly focusing on the visionary capability of designed futures the role of design, the present paper will offer a range of cases in order to tackle a possible interpretative model to enhance the speculative and inventive nature of designed futures into design education.

Keywords
Anticipation
Design Education
Future
Metadesign
Futurescapes

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Feeling Futures Anticipation : Re-connecting Interdependencies : Futurity Redeemed

Feeling and rethinking futures: opening up futures in energy transitions

Tim Fisher, Seth Oliver, Sietske Veenman

The Paris climate agreement renewed the ambition and the drive to realise a clean energy future. Reports and strategies at different levels and by different actors that envision clean energy futures bear witness to this development. Examples include the EU Energy roadmap 2050 (European Commission, 2012) and the Dutch ambition in the climate agreement. The format of these visionary reports seems diverse, ranging from formulating goals, proposing technical and policy pathways, and analyzing the efficiency and effectiveness of policy instruments (EEA, 2017).

However, looking at policy documents and within political processes, often one future dominates, generally of a 'ecomodernist' nature, conveniently blending economic development and environmental aims. Also in general, complex policy processes tend to foreground one future, as being separate from the present (Veenman and Leroy, 2016). This research adopts an innovative way of futuring starting in the present: the process of the 'making of futures' (Brown, 2003; Masini, 2006). While the idea of 'alternative futures that are lurking in the present' (Dinerstein, 2017, p.7) finds echo in recent literature (e.g. Van Asselt et al. 2010; Groves, 2017), there is little idea how to elaborate this in practice. This research meets this gap: design practices make alternative futures visible and audible providing experience within different alternative futures, enabling to use these experiences for intervention. How does a smart all-electric heating and lighting system look when it is applied in the standard rental flat of the 2030s?

Narratives form the bridge between the past, the present and the future (Holmes, 2009). Narratives about the future are constitutive or performative (Borup et al., 2006). They may lead to acceptance ánd empowerment. The strength of narratives has been proven in different disciplines, for example economics (Beckert, 2013; Holmes, 2009; Piotti, 2009) and in public administration (Van der Steen, 2009; Veenman, 2013). Nevertheless, there has been little attention for narrative projections about the energy-transition, its digitalization and impact.

What is key here; is who reaps the benefits and burdens of a much more responsive and flexible supply of electricity in an essentially fixed investment cost-based system. Yet there is a caveat. Because narratives are strongly intertwined with practices and the institutional contexts, they might lead to path dependency instead of alternative futures. We will use the social constructivist perspective of 'framing' (Benford and Snow, 2000) to target narratives that project alternative futures. Frames are cognitive schemata that allow actors to make sense of specific events and conditions (Goffman, 1974), operating at the level of the discursive/semiotic and focusing around sensemaking and valuation: the implicit societal process of meaning making in which actors articulate challenges. Because frames legitimize and support specific actions, they preselect certain futures while foreclosing others (see Groves, 2017). This connection between frames, futures, narratives and public and private values is scientifically and societally innovative.

We make use of fieldwork and interviews, archival materials and digital video, scientific data and speculative installation and ethics based on knowledge to reveal and articulate (micro) narratives, subjective perceptions surrounding the notion of 'a CO2-neutral society' and to convey a multi-layered narrative of the future. These micro-narratives evolving around energy are set against current and planned implementations of adaptive designs engineered to deal with systems of traditional energy

use. The micronarratives give the possibilities to engage with emergent issues of ambivalence that underlie governance problems.

Connecting places and advanced methods of intervention at both the micro (people's daily live; see Hamers et al., 2017) and the system's level, may serve to nurture deep understanding and a lively imagination of what alternative futures feel like. Enabled by brand new stories, music, digitalization, relational adventures, and courageous myth busting, the making of future visible truths, and bringing into being new actualized futures and brand new terms for social change, art full processes, non-representation, new forms of communication of complexity, sustainability and resilience. To what extent, for example, will people accept (locally) standardized heating solutions and controlling devices curtailing private choice? And what are enabling factors for stakeholders to make their own choices and take responsibility?

Present Future (Adam & Groves 2007)

Its 2050 the future has been traded : there's 40% of the world's trees remaining, compared with 2019. Insects are on the brink of extinction. Scientists have proven there's only enough of the worlds natural resources left to keep the human race alive for another two generations at best. Sea levels have risen and land is at 70% compared with 2019. Alternative technologies and renewable energies have dominated and proven a great success. Humans have evolved their digestive systems enough to survive on a 60% non organic synthesized machine made protein that mimics all the nutrients the human body needs. However, the human spirit has plummeted into record numbers of depression due to its disconnect with the natural world and record numbers of species are rapidly becoming extinct due to coldness starvation also known as heat exhaustion. 85% of the worlds population are asking…..why, didn't Christiana close that window that day when her heating was on full in that little

apartment block near the market square in Hatert, Nijmegen, Netherlands on the 22/2/2022?

Future Present (Adam & Groves, 2007)

Its 2050 the future has been transformed : there's 140% more of the world's trees compared with 2019. Insects bred on organic farms are one of the main food sources. Scientists have proven, providing we progress at the same rate as the last 30 years there's enough of the worlds natural resources left to keep the human race alive for another 15 generations. Sea levels have remained relatively stable and land is at 93% compared with 2019. Alternative technologies and renewable energies have dominated and proven a great success. Obesity and high cholesterol are at record lows due to international governmental policies on nutrients levels being maintained in all 'produced' foods. Happiness in humans is at an all time high, depression is on the verge of extinction. 75% of the world's population are asking…..why, did Christiana close that window that day when her heating was on full in that little apartment block near the market square in Hatert, Nijmegen, Netherlands on the 22/2/2022

Probing the Future: The Learning Organization In An Age of Rapid-Prototyping

This paper seeks to bring three different formulations of future-learning in or by organizations together into a combined framework that provides a workable model for organization and innovation based on a new, integrated formulation of organizational anticipatory learning practices for navigating the future.

It is axiomatic and well-understood that to be viable in a world characterized by change and uncertainty, organizations need to change too. Future success requires ability to create new solutions or success models, often based on new capabilities, and this rests on an ability to learn. Considerable and justifiably well-regarded work was done in developing the concept of a learning organization in the 1990s (De Geus, 1988; Stata, 1989; Senge, 1990; Senge et al., 1994) and, while there was at the time a considerable energy around it, much of this has dissipated in the intervening years—due to some inherent tension (Kerka, 1995), including distinctly idealistic and revisionist notions of organizational purpose, and, inter alia, a slow evolution away from a focus on future-learning to more general organizational learning (Edmondson & Moingeon, 1998; Huber, 1991).

However, apparently paradoxically, as the notion of a learning organization has stalled, learning has in dramatic respect moved to the very heart of organizational innovation thinking, particularly with the emergence and quick spread of design thinking methodology, and now well-understood concepts of prototyping "build-to-learn" and "fail-fast" (to learn) (Brown, 2008, 2009). This has been given further impetus with the expansion of design thinking well beyond the remit of product and or service innovation (Brown & Martin, 2015) towards involvement with organization strategy renewal, and many examples of companies which "exploit design thinking to support change, envision the future, and enhance portfolio planning." (Sato et al., 2010).

Into this literature, from the foresight side, Rohrbeck & Kum (2018), have put forward a "3Ps" foresight process model— Perceiving, Prospecting, Probing—which covers familiar terrain in strategic foresight methodology but extends it with particular attention to the idea of probing, this being where a foresight-generated new idea does not proceed directly to strategy but is developed into a learning-probe project to investigate with feedback how it might concretely take shape and be brought to user and market readiness. Probing takes decision-makers past merely identifying and understanding future solutions and conceptualizing a future path, and into real-world micro-scale exploration of these solutions. Like prototypes, probes stimulate and gauge user feedback, and create a learning cycle of iterative refinement of the product or service with users—that is, via probing, firms move from "cognitive search" to "experimental search" (Gavetti & Levinthal, 2000). Practically, probing may include R&D projects or acquisitions, internal venturing, experimenting in trial markets, creating intrapreneurship units or internal venture funds, "accelerator" units running consumer tests, etc. (McGrath, 2001; Michl et al., 2012; Rohrbeck et al., 2009). Other analysts from the foresight field have worked the common terrain between design prototyping and probing, for example, Day & Schoemaker (2016) advise "probe-and-learn" experimentation in the foresight process, this being rapid prototyping or quasi-experimental

designs that explore new strategic initiatives and pave the way for sequential investments, which (drawing on design thinking) requires: “a willingness to be immersed in the lives of current, prospective, and past customers [and] exploring and identifying latent needs or learning from lead customers.”

The paper brings these notions together, building on (and restituting) the *future*-learning component of the learning organization literature, and combining it with the relevant updated notions that have entered the field from design thinking and strategic foresight. Via this it aims to provide a practical (re)understanding the learning organization as a collection of systems and capabilities for iterating towards new ideas, solutions, business models, etc., rather than as a general call to organizational evolution or wellness, and it provides an updated working model for to achieve this.

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Emerging Collectives and the Everyday Exercise of Future-Making

Abstract
Sociotechnical imaginaries of the future bring with them how the world ought to be ordered. Primarily dominated by elite white male perspectives from the Global North, they often reinforce dominant power relations without challenging their socio-political effects. By building on feminist theory, this paper aims to address how shaping futures might be done differently, with different people, and in different forms. It introduces *emerging collectives*, the ecologies of participation that self-assemble for future-making as an everyday practice. Empirical exploration consists of two parts. It starts with a review of three design events in which participants were invited to create speculate imaginaries about the future of emerging technologies. Based on the lessons learned in the design events and also by incorporating feminist conceptualization of temporality, the second part introduces and tests a new approach in opening up the process of shaping futures. With a particular focus on economic futures, emerging collectives are put in the position of the knower to reflect on their everyday practices to generate inherently imaginative, social, and dialogical alternatives. By aspiring what might be, they challenge the imagination of people who are incapable of imagining possibilities beyond the confines of dominant economy. In other words, emerging collectives are instances of the Pluriverse, a world in which many worlds fit, to aspire action and guide change.

Keywords: *speculative design, feminist futures, community-based participation*

In speculative futures, the key capacity of design is to give material quality to *images about the future*, creating tangible possibilities to be discussed and reflected upon. For this purpose, designers create immersive experiences, embodied interactions, and affective engagements to engage the audience in a journey to an alternative to the present. The aim of these endeavors is to prepare the society to anticipate certain emerging socio-technical transformations. As feminist technoscience teaches us, the ways in which we represent things can have worldmaking effects. The nature of worldmaking in design is fundamentally political since different social groups have unequal possibilities, different levels of access to resources, and unequal proximities to sources of power to realize their aspirations and visions. Yet, little effort has been paid in questioning underlying assumptions in futures scenarios, ignoring the responsibility that comes with engaging in future-making. Speculative futures often imply a superior designer position with elitist views on a *better world* that society should aspire towards. By preferring particular realities over others, designers are enacting certain values. It raises political concerns such as what does preferable futures mean, for whom, and who decides. As Adam and Groves describe, the task for contemporary experts on the future is "not about knowing that future, but rather aiding individual and social endeavors to choose wisely from a spectrum of options and preferences with their associated potential effects" (Adam & Groves,

2007, p. 34). This includes suggesting ideas for future artifacts and practices, and exploring the consequences of the suggested changes. At the same time, they give people a voice to express their hopes and fears while the future is in the making. Here, "the future is not a blank space for the inscription of technocratic enlightenment, [...] but a space for democratic design" (Appadurai, 2013, p. 299). Thus, the question is how to use collaborative methods in ways in which participants are meaningfully involved in the creation of those options.

This paper offers an overview of three design events in which participants co-create speculative futures for emerging technologies. The goal was to encourage thinking more imaginatively about the future, envisioning, inventing, and pursuing more diverse possibilities. These events include: unpacking driverless technology using a classic scenario building methodology; exploring microgrids as the foundation to build smart communities using design fiction; and envisioning the future of local making and manufacturing using utopia as the method of inquiry. These cases foreground the capacity of design to engage people in future-making. It also provides insights for understanding the process through which participants, in a collaborative approach, envision alternative possibilities for the future.

Based on the lessons learned throughout design events and by incorporating feminist conceptualization of temporality, this paper opens up the process of future-making to engage *other* modes of knowing. Thus, I introduce emerging economic collectives: *local ecologies* exercising a new kind of economic reality. They challenge established mode of doing economy by *living* an alternative possibility, in the present space and time. I argue that this is a future-making practice, in particular, because of the impact it has on challenging the conceptual inevitability of dominant ways of being. Here, the future is not a distant destination with fixed ideals, instead, it is already being performed in an ongoing process of civic activism, incorporating diverse voices, and exploring the possibilities. In other words, these collectives open up the process of future-making to all, incorporating *other ways of knowing* in the process. Fundamental to their approach is staging it as collectively shaped futures. They have choreographed supportive practices for experimenting with futurity; it includes reviewing the history, encouraging intuition, embodied interaction, and more. Their motivation is to challenge taken for granted framings that are mischaracterizing their communities; they do so by

constructing *other* economies that reveal the plurality of the economy in which their voices are accurately and effectively captured.

In Design for Pluriverse, Escobar refers to *designing for life* as an open exploration of the future possibilities; "design in this sense does not transform the world, it is rather part of the world transforming itself" (Escobar, 2018, p. 215). Similarly, the emerging collectives introduced in this chapter are not promising a revolutionary transformation, rather their existence is a manifestation of an alternative future that is unfolding. This paper aims to address who gets to engage in future-making; what it takes to create settings that are explicitly plural; and what are the ways of mobilizing ecologies of participation to self-assemble for future-making.

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Title: Decolonizing Anticipatory Practices

Abstract: What does the future look like? Who owns/shapes these images of the future? Whose identity, knowledge, needs, and desires are not represented in these futures?

In the field of futures studies, various narrative methodologies are extensively used to build impactful images of possible futures. Futurists widely accept that the image of the future that one holds determines their attitude towards the future and how they behave in the present.

It should surprise nobody then, that as practitioners of foresight we spend significant time and effort in generating narratives of possible, plausible and preferred futures. In doing so, while the concept of alternative futures is held at the core of the discipline, the conversation around alternative histories gets left out. More often than not, the subjective yet widely-accepted (as most 'legitimate') frameworks of time, space and meaning-making tend to shape these narratives. Resultantly, the generated images of the future are predominantly expert-led and 'colonised' by historically popularized worldviews. Often, the dominant worldviews are largely tacit and practitioners may be unaware of these biases. However, in a world that is highly globalized and increasingly multicultural, large scale projects that rely on anticipatory methods for designing future-ready products, policies, and strategies, cannot afford to ignore this gap that further perpetuates inequity and power imbalance between stakeholder groups. These anticipatory practices, while aimed at exploring plural possibilities, can contribute to the alienation of marginalized and underserved communities from the process as well as outputs of futures work.

Taking into account the dominant Western worldview that shapes the disciplines of futures studies today– as the singular form of exploration, this paper explores ways in which anticipatory practices in contemporary times may be decolonized and opened up to non-western cultural perspectives. Recognizing the role of anticipation as a way of engaging with uncertainty and exploring alternatives in order to build more sustainable and equitable futures, the paper argues for a need to account for the diversity of perspectives in our world and the lack of it in our methods.

The paper begins by taking a long-form view on the history of anticipatory studies and examines the popular theories, frameworks, and methods found in literature through a critical-cultural lens. This is done with an intention to problematize and surface underlying values and assumptions in the discourse calling attention to the implicit definitions of growth/progress as well as the dominant linear conception of time. Thus making evident, the epistemologies privileged and normalized in the various contemporary methods of anticipation as well as the knowledge produced. Rooted in the multidisciplinary research undertaken by the author during her master's thesis, this work lies at the intersection of futures studies, non-western perspectives of anticipation and decoloniality. It discusses explorations aimed at bringing epistemological plurality to the discourse drawing from the author' own identity as a racialized, female practitioner from the global south. Decoloniality is understood, here, as an

act of delinking from the hegemonic narrative of Western civilization and to engage in building knowledge and arguments that supersede the current hegemony of Western knowledge (Mignolo, 2011). Additionally, this work is an attempt to build on previous efforts to include non-western perspective in futures discourse through frameworks such as Causal Layered Analysis (Inayatullah, 1998), Integral futures (Slaughter, 2012) and Sardar's four laws of futures studies (Sardar, 2010).

The paper explores the use of an intercultural learning framework (Andreotti & de Souza, 2008) derived from the work of Indian philosopher and subaltern author Gayatri Chakravorty Spivak as a way for building critical spaces for engaging with diverse cultural perspectives on futures by initiating a dialogue around the subjectivity of both normalized as well as marginalised epistemologies of future. These sites for critical anticipation also serve as a space for intercultural empathy and interaction and provide an enriching insight into how competing worldviews might collide/resolve in practice in a multicultural urban setting. Some of the key issues discussed in relation to this are that of politics of participatory frameworks of anticipation, and the care on the part of the facilitators needed to acknowledge, celebrate, and negotiate the varying lived histories at play during any act of anticipating futures.

Finally, by presenting a case of adapting an Indian folk-storytelling tradition as an anticipatory tool, the paper offers a tangible way of bringing epistemic plurality to the methods in practice, designed by recovering modes of anticipation from previously colonized cultures. As foresight/anticipatory practices move outside purely organizational confines and engage in conversations about a collective human/ civilizational future, practical frameworks to facilitate and support reconciliation, tolerance, and consideration of diverse views and ideas must be designed, promoted and used. The alternative method discussed in this paper fills a significant void in the contemporary futures discourse, that of methods/frameworks directly derived and reflective of non-western perspectives on the future. It aims to facilitate and inspire the creation of positive and compelling images of the future that may otherwise remain ignored and/or marginalized in anticipatory work. Through discussion of case-studies of this method in use, the author highlights how the themes and characters depicted in the stories created and told by the participants reflect their authentic worldview and present unique and refreshing ideas that are seldom seen in outputs of futures discourse, making a case for decolonization as a key cultural marker of inclusive anticipatory practices.

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Key Words: Cultural foresight, decolonization, non-western worldview, epistemological pluralism

Version 3

Title: Revealing people's anticipatory systems through action-learning: A Futures Literacy Lab

Curator: Atousa Poursheikhali

Team members

- Dr. Riel Miller
- Reza Dehnavieh
- Sara Poursheikhali
- Somayeh Noorihekmat
- Ali Masoud
- Atousa Poursheikhali

Format: Curated session

Method: This workshop combines collective intelligence knowledge creation techniques with an understanding of anticipatory systems and processes in order to design an action-learning process that invites participants to engage with their anticipatory assumptions. Participants will explore their different anticipatory systems, related assumptions and how these frames influence the futures they imagine and hence what they see and do in the present. By the end of the session participants will gain a greater awareness of both the frameworks they use for imagining the future and the implications of these frames for norms, values, myths, sermons and etc.

One of the key design challenges, when attempting to create an action-learning process that reveals people's anticipatory systems, is to ensure accessibility, transparency and authenticity for participants from a wide variety of different socio-economic backgrounds, cultural contexts. The action-learning process needs to enable people in many different situations to realize that they can deploy their capacity to anticipate for different reasons, in different ways and in different contexts. "Future Literacy Laboratory (FLL)" have been conceived and follow design principles that require co-creation, the customization of the action-learning process to context. The description of the theoretical and practical aspects are published in "Transforming the future, anticipation in the 21st century" by Riel Miller.

The structure of this curated session is limited to 90 minutes. This means that participants can only begin the learning voyage. This FLL has been co-designed by the facilitators to take into account the time restrictions... The specific tools used to enable participants to become aware of their anticipatory assumptions varies widely – there is no one-size-fits-all. In this session the primary source of insight for the participants into their anticipatory assumptions will be active 'listening/observing' of 'skits' that are meant to evoke and awareness of the AA. Participants will observe how the characters in acted out scenarios, designed for this Lab, act, reveal different AAs. Participants will accompany the theatrical, role-playing skits to see how different AAs can affect the way people use-the-future. The role-playing design is inspired by the FLL (Miller, 2018)

but focused on characters in real-time action. Each skit is meant to illustrate how expectations and hopes are shaped by AA and how people's imaginations depend on their analytical and narrative frames.

Main focus: The main focus of the session is on "Performative Anticipation" that offers insights into:

- How deliberative and conjectural performance reflects assumptions about why and how we control the future?
- How can role playing evoke or inspire participants to understand AA?

By exposing participants to skits with explicitly designed "Roleplaying" we expect to be able to show:

1- How people use-the-future based on their anticipation system?

2- How do others (as observers or a piece of the puzzle) judge other people's anticipation (not their own) based on their own hopes and fears?

3- Show that there can be a variety of anticipation systems and that everyone can create their own story by asking new questions.

4- Showing how individual's descriptions of their imaginary futures depend on their analytical and narrative framing assumptions, including AA.

Considerations:

** The extent of audience's participation, the exact time of that and also the mechanism that we use, depends on the number of audiences, their discipline, gender and age distribution and even nationality diversity (in fact who they are and how many they are). So the exact mechanism and detail can be determined by knowing these parameters to some extent.

** We do respect all the people anticipation systems and just we want to show how we can distinguish between different anticipatory systems.

** we believe that acting as the third part of a scenario (a story) can also be helpful in following an FLL process and we can transfer the concepts like AS, AA and use-the-future by mixing some branch of art-like theater- and science. Our approach trough anticipation systems are the science and art of futures studies.

** Our approach is not to present the whole map of our session completely for audiences at the beginning of the session and let them figure out by the end of the session. This approach helps us to engage more from the audience and also it prevents bias in their answers in different steps of the session.

** We have 5 individuals that play a role (one or more role per person) and at the same time, they can be the facilitator in different processes.

Characters are as below:

- The main character (P1) acts as a mother with a handicapped boy that can't walk due to DMD.
- P2- P1 husband that is a researcher and works in a research center, representative of AA1.
- P3- P1 sister, representative of AA2.
- P4- a friend of P1, representative of AA3.
- P5- a friend of P1, representative of AA4.

** We want to produce a video clip that starts and stops at some special and planned minutes of the session.

** The main subject of the scenarios is "being handicapped". We don't mean that at the end of the session we would reveal the main assumptions of a different group of people (as our target group) about the subject. We just want to show the effects of different thinking frameworks on how they use-the-future. So the ideas that are presented by different characters don't cover all the thinking frameworks about being handicapped. The focus is on the changing path and following results.

** Conversation in each scenario must be finalized with art consultations, religious affairs and expert of FLL (that we have Dr. Miller as an honorary member).

Underlying research: Atousa, Reza, Sara, Ali, and Somayeh are working on translating "Transforming the future, Anticipating in the 21st century" with assistance Dr. Riel Miller. This work originates from the research interests of the team at the Institute for futures studies in health affiliated with Kerman University of Medical Sciences. For now, the work on anticipatory systems is not funded by any specific program, grant or plan. The cost of publishing the book in Persian is being paid for by team members.

Annex

The curated session Agenda

part 1 Introduction (5 minutes)	Welcome, the outline of the purpose of the event and an introduction to the process. Getting to know each other – brief introduction – who are you, what do you do, why are you here? (May be omitted if the members are more than 20). *if so, we need to know some general information about the participants before the session. Divide up into groups of 5 or more, depending on the number of members.
part 2 **Act 1** **(10 minutes)**	P1 comes to the scene. A woman seems 35, looks confused, sad and hopeless. P1: Hi everybody. I am Maria. I am 30 years old mom. Sometimes I feel happy thinking about being a mom. But it takes a short time that suddenly I remember what has happened. (The emotions of the face should change from being happy to worry) and sometimes I don't know how to handle it. A video plays about a brief history of P1 life. Some points are (…. nationality, some of her hopes when she was teenager, why she always loves to have a brother, how she married and she has a boy with DMD disorder that he can't walk. etc.). **3 minutes** P2: comes to the scene. P2: Hi honey. Who are you talking to? (and looking around). P1: Hi. Nothing. I was just reviewing something with myself. P2: anything new has happened? P1: No……. Just…. P2: Ha…. understand…. Ryan…again Ryan…. P1: what do you mean by again Ryan? He is the most important part of our life… P2: no he is not…I am tired of being worry about him. We are not living. The only thing that matters to you is Ryan. I'm tired of thinking about this part of my life. That every day I am thinking to my disabled child whose future is unclear. I'm tired of discussing with you ... Why do you think you are the only one who loves him? Why do you think that I would not hurt to see his condition? (shouting and walking around) One-minute silence… P2 comes next to P1 continues with a quieter and more gentle tone P2: I love him honey. I love you too. I just want to have a quiet life. I want to feel happiness and calm. You have to admit that he can never walk, and this is not your fault. And not my fault. P1: last day he asked me to fight the children who were playing in the park and force them to sit like him. This was the most difficult sentence I had ever heard from him. I have always been able to prepare an immediate answer to him or to justify the circumstances in a convincing way. But this time it was different. How many years have I been able to force other children to sit like him? How far can I be with him to convince him that everything is

	fine and that there is nothing to worry about? Maybe I have only played the role of a liar for him. I even lied to myself during these years that I'm happy, that my son's problem is not something that can stop the happiness of our little family. P2 stands and tries to explain rationally. There are many children with this kind of disorder all around the world. We are living in the 21st century that you can see a new achievement of technology every day. He may be going to walk and run by near future. (He mentions to some emerging technologies that are working to help people with this kind of disorder to walk). (He smiles) and the good point is that new technologies are supposed to decrease costs. Future is made by technologies and I am sure that they will find a way to help people like Ryan. P1 (smiles and look to P2 eyes and says): really? Are you serious or you just want to give me some comfort? P2: No I am honest with you. ….
Part 3 **Act 2** **(10 minutes)**	This part is a dialogue between P1 and P3 (representative of the AA2). She is P1 sister. The dialogue between two sisters should show signs of congruence or affirmation of religious pre-determined futures. (the dialogues should be finalized with both art and religious consultors) Some of the dialogues can be as follow: Maye be it was Ryan destiny not to walk. I am sure that God wants him to be like this and for sure it has a reason. Maybe Ryan disability is a sign in your life. You cannot fight with what has been destined. You should accept it and do your best to be a patient mother for him. You should not feel guilty or there is not any fault with you Maybe its God test You should help him to be like normal children. Going to school, have friends, go on a trip and etc. just with more help or some considerations.
Part4 **Act 3** **(15 minutes)**	This part is a dialogue between P1 and P4 (representative of the AA3). He is a P1 friend. In this part, we want to show that the emphasis of P4 is on innovative ways of getting to specific "continuity futures". The main message is that P4 asks P1 to think differently. Like: Why you are thinking that very thing is going to worse? If Ryan has asked you to force other children to sit down, it's natural due to his situation and age. He feels what you feel as his mother. You can help him to like himself. To be powerful and think differently. You can be the origin of the change as his mother. You are not always alive to take care of him. So help him to be powerful, strong and empowerment mentally and physically…… After that, the scene changes. Showing P1 with a kingdom dress in her hand. She says:

	I told Ryan that : you are the king my son. The kings don't play and waste their time. You should think and decide others what to do. You are my king and it's your kingdom dress. Have you ever seen a king to play? Or run? And etc. After completing P1 dialogues with audiences, P1 says to audiences that it was a "**True story**" happened in Iran. The video continues to play….. He is one of the top entrepreneurs in Iran and the managing director of Firooz Industrial Group and the founder of several NGOs active in the rights of disabled people. Among his major activities is the creation of employment for disabled people in the Firooz Health Department, which says that the efficiency of the disabled is more than a normal person. He has studied medicine in America.
Part 5 **Act 4** **(10 minutes)**	This part is the act of P5 as a representative of the AA6. Here P5 discuss a new point of view toward "being handicapped/ disabled". The main message of P5 is: (with a mixture of playing video) Why do we call someone handicapped, disabled or disorder? What is the definition of it in our mind? We have designed a special framework that we are expanding it by the time!! Some years ago we didn't know about ADHA or autism but now they are in our expanded framework of "not being normal". Despite the medical aspects and what really happens in the body (as much as we know), what are the criteria that we determine these definitions based on them? Who is normal or who is not? If two people live together from the beginning of their life in isolation and without contact with others, do they think about each other to find disorders or disability in each other? I can walk and talk and see. There are some aspects of "me" that everyone can see. But I cannot play the piano. I cannot feel notes. You can paint well but she (mention to another audience) cannot. Instead, maybe she is good at ballet. Do you know me as handicapped if I cannot learn math? Or can't dance? What about that I cannot walk? Being in majority or minority of a society determines who is "disabled", "handicapped" or "disordered"? Do we just care about visible or physical aspects or signs? What happened if we think that everyone born with one or some special disability in this world? That some kind is physical or mental or even unique of a special person? Let's think about this framework of thinking in joint with "growing up", as the most universal way of "using-the-future". How is the "disability" defined in "growing up" as we know it by experience? We do expect a child not to run after being born. But, we expect them to crawl after almost 6 months or walk after 2 years. If so, they are behaving based on our accepted "growing up" framework. But if they don't do that, seems that there is some problem… A genius can't walk like Stephen Hawking and I can't understand 99% of what was obvious to him. Who is more disabled? My mom was happy watching me crawling or walking or running but what about his mom? What do we expect a person do in the world?

Part 6 **Audiences participation (20 minutes)**	The mechanism of audience participation depends on their number. They may be in different 5to6 groups or they may be asked to talk with their neighbours. All the groups can talk or just some volunteers randomly chosen from different groups. The aim is to let audiences speak about their assumptions, what they think about the subject, different characters assumptions, other pictures of the future for "being disabled" and etc. A table is shown (table 1), on the screen and can be completed by the audiences
Part 7 **Conclusion (20 minutes)**	By Dr Riel Miller Brief overview of Futures Literacy as a capability and Futures Literacy Labs as a tool for gaining the capacity to 'use-the-future' for many purposes and also brief reviewing of the concepts of AA, AS and their role in a way that people use-the-future
Part 8	Feedback on the session and participants fill in evaluation form

Table 1- Audience's participation

	Agreee /not agree	**Assumptions**
Act 1		
Act 2		
Act 3		
Act 4		
Other asumptions that are missing		

"Anticipating Dark Futures": New Ideas Submission

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Abstract:

This New Ideas session emerges from an encounter in the dark. While attending a multidisciplinary conference on "darkness" in the polar night of Svalbard, a philosopher, two architects, a cognitive scientist, a scholar of speculative fiction, a polar historian, and a medievalist walked into a bar, and discovered that beyond their shared scholarly interest in darkness, they also developed, as they shared the ideas, methodologies, and future directions of their disciplines, that feeling of anticipation that accompanies paradigm-shifting encounters with the "others" they had met in each other. The aim of this session is to expand that discussion, centering on how we conceptualize the dark unknown of the future according to our respective fields' concerns, highlighting commonalities and interrogating differences in order to break apart disciplinary divisions. Our hope is that such collaborative, tentacular thinking will help us develop better ways of caring for the future in this current period of anticipation and anxiety, and provide a model for cross-disciplinary approaches to futures. Our brief talks will thus touch on such topics as the human experience of time, the formation of self and community, and meeting the anticipated needs of self and community through a conversation among our varied fields.

Wendy Sloan (philosophy, linguistics) conceptualizes the present moment as being in constant anticipatory tension with the future. Drawing upon the idea of the self as narratively constructed, she suggests that in the moment between anticipating and being in the future, one has an opportunity to deviate from one narrative and redefine one's identity. Becoming conscious of the "future present" tense, Sloan posits, the future becomes dark, but full of possibility, a thing to cultivate and care for. Sarah Pickman and Tess Lanzarotta (historians) likewise invoke themes of time, environment, positionality, and care for the future by bringing to bear perspectives of time held by some North American indigenous peoples. Exploring "indigenous time" vs. "settler time," as laid out by Mark Rifkin, Pickman and Lanzarotta consider how ways of thinking about time that link present life to ancestral and future life can lead us away from the "dark" futures created by Western capitalism. Looking to the past, Daniel Brielmaier (medievalist) examines the poetry of cultural trauma composed in medieval Wales and Ireland, observing that, although the poems anticipate only dark, hopeless futures, the act of composing, performing, and/or hearing such poetry may have provided a communal catharsis akin to funeral lament, an exorcism of the past that keeps it from casting too dark a shadow on the future. Looking to dark futures already anticipated in literature, Sarah Canfield (literature) evaluates speculative fiction's impact on how we (fail to) meet the challenges its authors envisioned; while Ro Spankie (architect, designer) explores design fictions, attempts by architects to anticipate future structural needs by imagining fictional design scenarios as a means of caring for the future. In a complementary vein, fellow architect and designer Cathlyn Newell returns to Sloan's "future present," envisioning designs that inhabit the space between past and present, where those structures that supported the needs of the past can be acknowledged and mourned as they

give way to the anticipated needs of a cared-for future. Finally, Robin Zebrowski (cognitive science) problematizes our various theories of anticipation with cognitive science's notions of how we perceive time in relation to language and culture.

Author Keywords:

Darkness
Anxiety
Care for the future
Indigeneity
Time
Interdisciplinary
Collaborative
Re-imagining disciplinary practices
Community identities
Paradigm shifts

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Future-making in education through Social Presencing Theatre: an awareness-based anticipatory methodology.

CONTEXT OF THE CURATED SESSION

With the loss of what Guyer (2017) refers to as 'near future certainty', it is no wonder that the aims of schooling and the education of our children and young people are at a crossroad. The very loss of near future certainty should shock the education system into raising its gaze beyond what Anusas and Harkness (2014) refer to as the 'close present: the present of a recent yesterday, limited now, and almost tomorrow'. To enact such a change in perspective we will need to embed anticipatory practices and literacies in education communities, so as to learn from the future as it emerges. During this session, we will propose applied anticipatory practices - from viewpoints ranging design and theatre, and education at compulsory and tertiary stages - for working with learners, educational communities, and schooling systems. These approaches are framed as being awareness-based. They consider our awareness of one another and how we generate our interactions based on that awareness - what is referred to in Social Presencing Theatre as an awareness of the whole social field. Social Presencing Theatre (SPT) is an arts and awareness-based methodology for working with social change, harnessing the body as a way of knowing. The methodology was developed by the Presencing Institute (Massachusetts Institute of Technology) within the framework of Theory U - an applied and theoretical framework for supporting organisational and communal change. Theory U provides a generative structure for practitioners, researchers, and changemakers to co-sense into the possibilities of an emerging future. This framework, developed by MIT Professor Otto Scharmer, is currently applied globally in contexts as diverse as corporations, governments, and social movements. SPT is a core dimension of Theory U. Its origins are in MIT's systems thinking research groups and was developed for practical application by choreographer Arawana Hayashi. As a set of body-led practices for individuals and groups, SPT works as a social technology for supporting a system to sense and see itself. Through a series of co-creative enactments, SPT widens participation in future-making by providing a platform for groups to attune to and sense shared futures.

HOSTS

We bring together four interdisciplinary researchers for a curated session in which Social Presencing Theatre, as a participatory anticipation methodology, is introduced through each host's own discipline and context. This includes research and work in design, theatre, education, and choreography. Our core meeting points are education, and anticipatory and future-making practices using the body. We come from a global context,

including Brazil, South Africa, the United States, and Norway - representing a very diverse field of contexts. Our experience ranges transdisciplinary and experience design, applied cultural change practices, performance, as well as teaching and learning in compulsory and higher education.

PRACTICAL SESSION: PLANNED ACTIVITIES AND INTENDED OUTCOMES

During this participatory session, attendees will be invited to an embodied exploration of Social Presencing Theatre as an applied anticipatory methodology, specifically focussing on examples from education-based interventions. The session will comprise an initial introduction to these frames of thinking, followed by embodied activities and sub-sessions introducing learnings from case studies. All the activities will be interspersed with discussions and peer reflection. Through experiential and reflective activities participants will be engaged in conference questions around performative anticipation, how anticipatory learning happens, and feeling and caring for the future. Participants will have the option of deepening into an experiential sub-session of one of the following cases:

- Applying embodied learning as an anticipatory literacy with a high school immigrant community of South Los Angeles.
- Deep learning in K12 education at a Waldorf School in Stavanger Norway.
- Using a participative social design approach to develop body-led anticipatory literacies in youth changemaker settings, London UK.
- Embodied research on borders and migration through devising theatre at a public community college, City University in New York.

At the end of the sub-sessions, participants will reconvene to share learnings and final reflections on the use of SPT as an anticipatory practice.

Participants will come out of the session with insights into the application of body-led, arts- and awareness-based anticipatory practices for working with communities, both as research methodology and social intervention strategy.

INTENDED AUDIENCE

The workshop is open to an interdisciplinary audience interested in:

- Education, schooling, and learning;
- Practitioners and researchers working in the fields of social change, social transformation, cultural change, systems thinking, mindset transformation;
- Practitioners and researchers interested in awareness-based approaches for co-sensing and co-shaping emerging futures;

- Practitioners and researchers interested in arts-based approaches to knowing.

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For further context on SPT see https://www.presencing.org/aboutus/spt

For further context on Theory U see https://www.presencing.org/aboutus/theory-u

For further details on Arawana Hayashi see http://www.arawanahayashi.com

For further details on Otto Scharmer see http://www.ottoscharmer.com

Collaborative support networks as generative of new futures: using world café and other dialogic methods to further inclusion, awareness and sustainability (submission 25)

Laurence Habib, Flavio Mesquita da Silva, Sergej van Middendorp, and Frederick Steier

Collaborative support networks are increasingly used to support the inclusion of otherwise marginal, marginalized or less visible groups in structures such as schools, institutions of higher education, and political entities (see, e.g. Camarinha-Mator & Afsarmanesh, 2005). Their form and scale can vary from communities of practice (Wenger, 2000) to global action networks (Waddell, 2010). Playing a part in such networks can also increase our awareness for the potential of interpersonal, interdisciplinary, and interorganizational collaboration in a number of differing contexts. One of the inherent features of such networks is that they bring together individuals with various types of experience, whereby the value of that experience for the network is not only based on their formal qualifications such as academic merit or time spent in a job, but also on the quality of their reflection on that experience and its potential to enrich the whole. As catalysts for inclusion and as awareness raisers for the power of network thinking, collaborative support networks may become an essential element of future societal structures. This in turn may help societies to adapt and sustain themselves gracefully in the face of major issues, like climate change, which seems to us one of the most challenging anticipated environmental changes coming at us in our history on earth. The form and shape of collaborative support networks can vary tremendously, and can include non-traditional characteristics like humor and playfulness. Such characteristics may be helpful in the adaptations collaborative support networks may help make in societal structures. We hope to highlight some of these non-traditional qualities in our session and hope they afford our participants the possibility to liberally use them to adapt the session's structure to co-create a unique outcome with us. We plan to provide some examples from our own praxis-based and scholarly-based work.

In this session, we will use the concept of generative metaphors from Don Schön (1979). We will give a few examples of generative metaphors as a starting point to the session. However, the focus will be on getting the group to create their own metaphors, and reflect on how those metaphors can enrich the outcomes of collaborative support networks and catalyze new futures.

As they combine qualities that pertain to both the realm of the poetic and the realm of logic (as suggested in Bateson & Bateson (1987)), metaphors may have an emancipatory and empowerment-building quality that can further dialogue in unanticipated and creative ways. We will also reflect on Mary Catherine Bateson (1991)'s idea of generating "our own metaphor" and discuss the meaning of the collective "we/our" when building metaphors. The importance of flexibility is central to generating new metaphors and reflecting on them.

We will use our own disciplines and areas of practice, respectively social informatics (Laurence Habib), conversational leadership and whole systems design (Flavio Mesquita da Silva), disruptive innovation and transformational change (Sergej van Middendorp), and collaborative design for learning and play (Frederick Steier) in order to inform the conversation. A key feature that brings our ideas together is a commitment to designing a process for design in these different domains, attending to communication process at multiple levels. The recursive aspect of designing a process for design will also be central to our session. When helpful, we may choose to support our joint process by introducing some of the tools and methods that we have developed in our research and practice, such as work=play, and the meta4language toolkit.

We will use the concept of the World Café as the basic structure of the session. The World Café is a meeting process that brings together groups in small, intimate conversations. It is a living system that relies on design principles like asking questions that matter, creating a hospitable space, and setting the context (Brown, Isaacs & The World Café Community (2005)). Such a structure is to a large extent self-organizing and provides learning opportunities both for individual participants and for the group as a whole.

The overall aim of the session is to allow for cross-pollination and becoming wiser together. We will strive to keep the range of possible topics as wide as possible, to allow for reflections on the state of the affairs of humanity as well as discussions of narrower or apparently mundane topics. In doing so,

we aim to connect with one another and, and with one of humanity's most ancient traditions— to talk about what really matters and find the wisdom that can only be accessed through dialogue and exchange. This dialogue and exchange, in addition to offering an arena for 'messy' encounters, will also bridge the playful and the academic.

We aim to leverage the World Café's potential as a learning system that provides participants with opportunities of acquiring new information and knowledge as well as finding new ways of seeing their lifeworlds (Rehorick & Bentz, 2009; van Manen, 1990). We hope that one of the takeaways from the session will be that participants will experience new perspectives and emotions as they collaboratively create new meaning on themes that are important to them. In keeping with the World Café philosophy, the session will be a session of "futuring" i.e. co-creating a process in which participants project their thinking towards future scenarios (in line with the concept of "futuring" as outlined in e.g. Cornish, 2004).

Knowing that a successful World Café session requires at least 12 participants, we will also have a plan for an alternative format if less than 12 persons attend the session, in which case the session will be more of an open-space discussion. The space will be set-up to afford co-design and can be used as a generative metaphor while working on creating, discussing and reflecting on new generative metaphors for collaborative work. By setting up each table to have a metaphor to play with in the café rounds, we invite participants to anticipate their future context through that table's metaphorical entailments. Also we will offer 'open' tables where participants can collaboratively generate their own metaphors to play with. We will spend the last few minutes of the session reflecting on our own process, in particular the verbal and non-verbal communication, as well as the extent to which the group has chosen or did not chose to liberate itself from the structure of the session.

An important element of collaborative support network is the variety of the backgrounds, experiences and perspectives of the participants. This variety often leads to serendipity in the encounters between participants. To ensure variety in future scenarios, we will consider developing methods to widen the net for identifying participants and inviting them to the session (widening for example age range, professions, levels of disabilities, etc.).

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Note: the authors will also have a dialogue session on the same theme. The dialogue session is titled: “Generating new futures through collaborative support networks: reflecting on inclusion, awareness and sustainability” and has been given the number 30 in Easy Chair.

Experiential Futures in Transdisciplinary Higher Education: Feeling Futures and Making them Worth our Wants

Susanne Pratt and Giedre Kligyte

Keywords: matters of care, transdisciplinarity, higher education, affect, experiential futures

Key Thematic Question: Feeling the future?

Type of Contribution: Paper (1 000 words)

Recent advances in emerging technology, alongside social and environmental changes such as climate change, platform capitalism, the gig economy, and post-factual politics are heralding in what many refer to as the fourth industrial revolution. These shifts all present both challenges and opportunities and raise questions of distributed social and environmental impacts. How can we ensure collective flourishing with technology? How might we take action in the present to generate futures that enable many to flourish, rather than a select few? What futures are worth wanting? Specifically, what artful modes of anticipating and attuning to possibilities can be cultivated within higher education? How might learners sense alternative futures—feel, taste, touch and smell them—to address disempowering dichotomies and bias embedded within contemporary emerging technologies? What transdisciplinary methodologies and practices might make material participation in shaping just alternative futures possible?

The aim of this paper is twofold: to discuss lessons learned from incorporating affective "experiential futures" methods into a transdisciplinary undergraduate degree to enhance futures literacy and engagement (Candy 2010; Kuzmanovic & Gaffney 2017), and to extend scholarship on experiential futures approaches through notions of "matters of care" and affect from feminist science studies (Puig de la Bellacasa 2017). Puig de la Bellacasa (2011, 90) describes care as "an affective state, a material vital doing, and an ethico-political obligation." We draw on this theorising to extend existing experiential futures approaches, with a particular focus on their ability to elicit non-normative ethical responses through the affective dimension. Experiential futures can be described as "an attempt to bring the worlds of tomorrow into the present in a way that can be experienced directly" (Kuzmanovic & Gaffney 2017, 110). Through a greater emphasis on the potential of performative, embodied, material, and immersive forms of engagement, experiential futures extend and trouble dominant futures approaches which have historically favoured discursive and/or statistical modes of engagement (Candy 2010; Candy & Dunagan 2016; Candy & Kornet 2019; Kuzmanovic & Gaffney 2017). This emphasis on materiality intersects with trends in design studies—particularly the growth of speculative design and design fiction (Dunne & Raby 2013; Durfee & Zeiger 2017)—and "a broader trend towards future-oriented deliberation that goes 'beyond discourse'" in other fields (Davies et al. 2015, 76). Such experiential approaches seek to enable us to move away from discursive abstractions about the future to considering tangible actions, actors, objects and ethics in our anticipatory practices by engaging with a wider array of ways of sensing and ways of knowing (Pelzer & Versteeg 2019; Rijkens–Klomp, Baerten, & Rossi 2017).

To develop the argument, this paper discusses experiential futures approaches used within a transdisciplinary undergraduate degree—the Bachelor of Creative Intelligence and Innovation—at the University of Technology Sydney, Australia. The specific focus is on a fourth-year subject, titled Envisioning Futures, which engages students in a future-oriented exploration of complex real-world challenges posed by diverse industry and community partners, as well as a thematic on the future of work. As part of assessment, students create a simulation of a lived experience in a future world,

which enables them to consider the desirability of such futures from the various stakeholders' perspectives. Employing a participatory action research methodology involving cycles of planning, acting, observing and reflecting, we analyse and discuss the subject, including changes made, and what we have learnt over the three years the subject has run. We also analyse student's material artefacts—experiential scenarios of possible futures—to highlight the promise held by affective practices of anticipation. In particular, we discuss the role of prehersals, sensory workshops, and performative narrative structures (such as the hero's journey and its limitations for complexity stories) in developing futures literacy, embodied ways of knowing, and careful affective practices, including ethico-political obligations. The paper draws out how these approaches intersect and contrast with other more widely used foresight approaches, such as scenario planning, casual layered analysis and integral theory (Slaughter 1996; Voros 2008).

Experiential futures approaches employed in this subject allow us (staff and students) to take a highly textured approach and experiment with ideas and alternative futures in order to "try them out," consider the soft impacts and human consequences and generate insights that "sheds light on what is at stake and reveal avenues for intervention and innovation" (Slaughter 1996, 150). Puig de la Bellacasa's (2011, 2017) notion of matters of care helps to highlight tensions and opportunities that can arise through engaging with non-normative ethics in the context of transdisciplinary teaching and learning. We conclude with a reflection on the compromises and possibilities of care-full material engagement while performing anticipation.

Using research products to anticipate future everyday life

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Abstract

This paper reflects on the potential of research products (Odom et al., 2016) – high fidelity prototypes designed to generate new knowledge – to anticipate future everyday life. A secondary aim of the work underlying this paper is to bring 'making' as a valid and recognized method to the areas of the social sciences that study future everyday life. The question central to the paper therefore is: 'what are the type of questions about future everyday life that research products are best and uniquely capable of answering?'

An important part of this uniqueness lies in design's exploration of the new. In reference to the future cone model (Hancock & Bezold, 1994), research artefacts are capable of expanding the range of possible futures, because they can materialize new alternatives that weren't imagined before. Moreover, because these research products are physicalized ideas, they enable embodied experiences that generate a different type of knowledge about future everyday life than for example future scenarios or narratives.

The paper addresses the main question by focusing on the process and outcomes of sixteen master student projects that use research products to study specific aspects of future everyday life. These include the future of dating, laundering, and gender divisions in the smart home.

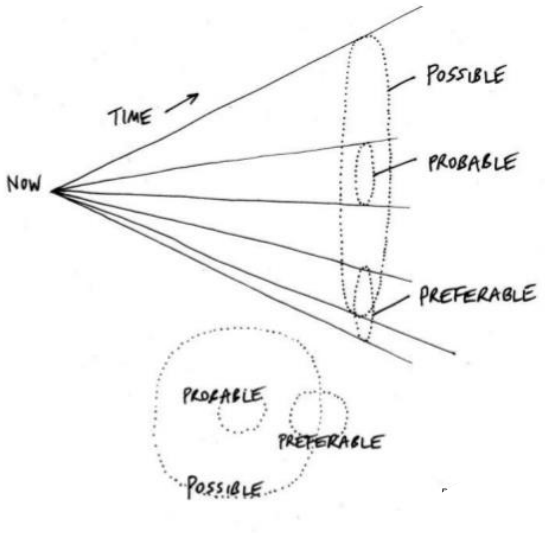

Figure 1: The "future cone"-adapted from Hancock and Bezold (1994) by Candy (2010, p. 35)

Background

The paper builds on earlier work in everyday futures (Kuijer & Spurling, 2017), in which I worked with Nicola Spurling to explore the challenges and state-of-the-art in researching future everyday life through a series of workshops, events and joint publications.

The first workshop, held in 2016 focused on exploring different approaches to studying future everyday life by bringing together researchers with highly varied backgrounds, from biology to

history and management. It resulted in a collection of nine essays published on our Everyday Futures website, and a special topic in ACM Interactions (Kuijer & Spurling, 2017). This special topic highlighted three different approaches to researching future everyday life: (1) a historical focus (Wright & Pooley, 2017) in which the path dependency of infrastructures and ways of living implies looking at historic change as a means for anticipating the future, (2) a focus on the present (Chatterton & Newmarch, 2017), in which the idea that some of the diverse ways of living that exist today are likely to grow in the future and therefore form examples of how the future exists today, and (3) how the future everyday lives implied in powerful visions of the future, such as the circular economy, form an entry point for anticipating these lives (Welch, Keller, & Mandich, 2017).

The second workshop focused on a fourth approach to anticipating future everyday life, which was through the making of new artefacts. The Making Everyday Futures workshop was based on the idea of 'Designing to know' (Wakkary, 2016) that builds on the tradition of design research. Design research can be taken back to a series of essays published under the theme ‘Design as a Discipline’ in the 1980s (Archer, 1979; Cross, 1982; Nadler, 1980). The essays established design theory as a particular area of knowledge and research. A more formal design research methodology emerged in the early 1990s that uses design practice, the creative process of generating new objects, as a way of gaining knowledge. Today, these approaches are also referred to as Research through Design (Stappers & Giaccardi, 2017) or Constructive Design Research (Koskinen, Zimmerman, Binder, Redstrom, & Wensveen, 2011).

The majority of design research is directed at the design disciplines itself. In the Making Everyday Futures Workshop the focus was on exploring the possibilities of using processes of making objects, and the objects themselves, as an approach to generate original knowledge for the social sciences. This question remains central in my research on this topic and is further explored in a master elective course offered as part of the Industrial Design programme of Eindhoven University of Technology (NL). The aim of the course, titled 'Researching the Future Everyday', is to let students experiment with ways in which research products (Odom et al., 2016) can be used to make valuable contributions in the social sciences.

Material

In the course, students depart from a particular study published in a social science journal and formulate research questions on the basis of it. They design, make and deploy a research product after which they analyse results and produce a scientific paper about it. In this process, the students are guided and encouraged to keep an audience of social scientists in mind for their findings. The resulting papers are reviewed by experts from the social sciences (where possible the authors of the core papers). To ensure quality of the research products, they are critiqued half-way the course by design researchers in an exhibition style critique session.

In 2018, the course resulted in eight papers. Figure 3 shows three of the research products. AIMY is a tangible, audio-based dating device that responds to David and Cambre (2016). It forms an alternative to the casualness, quickness and ephemerality that Tinder ‘promotes’ through its interaction style of viewing and swiping, thereby shedding a different light on potential futures of 'assisted' dating. Smart Cup is a simple glass with LED lights programmed to randomly switch on and off. It responds to Strengers and Nicholls (2017) by exploring in more detail perceptions of smartness among consumers. Jack and June are two strongly stereotyped smart home characters that are marketed in an attractive packaging. Building on Strengers and Nicholls (2018), it was used to explore the implications of the continuation of the wife-replacement trend and the influence of marketing on stereotypical gender roles.

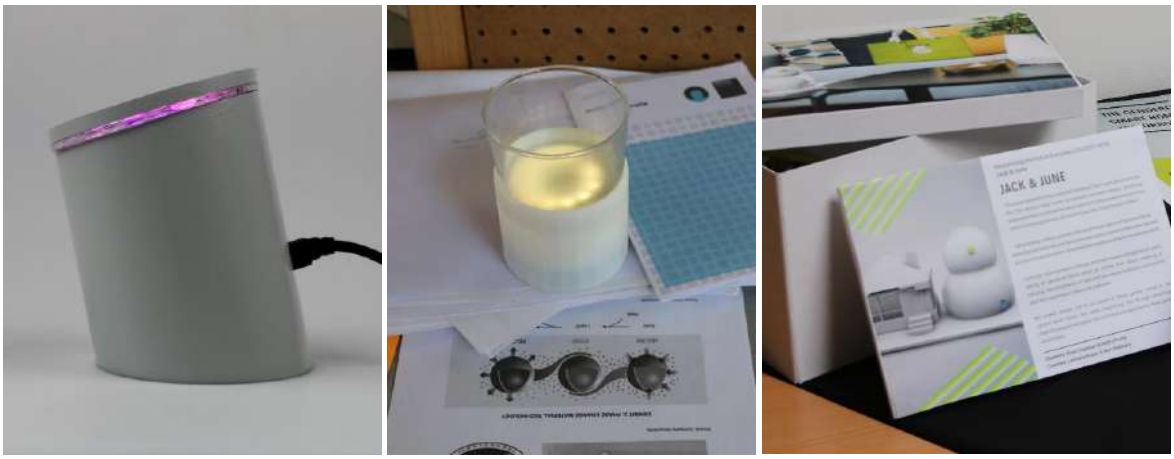

Figure 3: AIMY, Smart Cup and Jack & June

The course ran again from April – June 2019. In the session I will use these projects to reflect on the unique and potentially valuable role research products can play in contributing to our understanding of future everyday life.

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Researcher: Christopher Pearsell-Ross
Presentation Title: Futures Compass – Gaming Uncertain Futures
Research focus: Design, Futures Studies, Futures Literacy,
School: The Oslo School of Architecture and Design
Student Level: Masters Thesis Presentation

How can we imagine alternative futures for journalism? This is the question that drove a 4-month exploratory diploma project at the Oslo School of Architecture and Design. The result of this design process was Futures Compass: a collaborative futures game that combines design practice with storytelling and futures studies, with the goal of building Futures Literacy.

Fundamental to the creation of Futures Compass was an embedded design process, based on ethnographic research practices that have been characterised as 'deep hanging out' (Geertz, 1998). Over the course of the 4 month diploma project, the author worked alongside product teams building the next generation of publishing platforms at Schibsted Media Group, conducting interviews, workshops, daily observations and play tests. The goal of this embedded process was to cultivate "an attitude toward 'being there' sufficient to experience the mundane and sacred, brash and nuanced aspects of socio-cultural life and, through observations, encounters and conversations, to come to an understanding of it" (Lewis & Russell, 2011).

During this research and design process the central aim of the project moved from imagining alternative futures to focus on building futures literacy within Schibsted's teams. Futures literacy is outlined by Riel Miller as "the capacity to explore the potential of the present to give rise to the future" (Miller, 2007). This shift in focus was strategic, in that it became apparent that Schibsted's teams did not need an alternative or inspirational vision, but rather needed the tools and language to engage with the future in the course of their daily work.

With this goal in mind, Futures Compass was developed as a collaborative futures game designed to help creative teams build their futures literacy. Combining elements of design practice, creative storytelling games, and existing futures methods and card games, such as those outlined by Stuart Candy (2018), Futures Compass is a fully-realised prototype that arose out of a hybrid design process. This process bridged product design, service and user experience design, with a foundation of systems oriented design.

What makes Futures Compass distinct as a futures game is the inclusion of uncertainty in the scenarios trends lead to – do they decline, increase, mutate, etc. – followed by a selection of different outcomes the team might achieve in their future scenarios – did they lead, fail, adapt, etc. This means that teams can face challenging and provocative scenarios and outcomes, rather than the traditional binary of utopias and dystopias.

While Futures Compass was initially delivered in the spring of 2018, its development is not over. Even though the process of developing this project led to changes and new capacities within the teams at Schibsted, the process was not widely adopted after key internal stakeholders left the organisation. Continued play tests with groups both within and outside of Schibsted are fuelling a continued design process, one that needs grapple with making Futures Compass more accessible to unexperienced players in a broader range of industries and focus areas. Further research and development will also need to focus on whether this process works better as a facilitated workshop, rather than as a standalone game.

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Anticipation 2019

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How to care for the future?

How is future in jeopardy and what acts of care might we make to anticipate it?

How does anticipatory learning happen?

How are we to better learn today for sustainable tomorrows?

Abstract for a paper

Traces of human-nature interface as a cultural transformation towards sustainable futures

Abstract

Ecological crisis, in a complex connection to global interconnectedness and mobility of people and information and in connection to radical new technology, is a megatrend (Kiiski Kataja 2016) which indicates the great global change of the living environment of people everywhere on the Earth. In this paper, culture is seen as a part of nature (e.g. Siivonen 2018; Willamo et al. 2017). The focus is in the conscious cultural transformation, regarded as necessary to tackle the ecological crisis. The aim of this paper is to develop a new conceptual model of Heritage Futures, which combines 1) transformative power of culture defined as a dynamic process of anthroposemiosis, 2) human anticipatory understanding, and 3) cultural heritage as a tool to engage people in an inspiring, affectual, cognitive and practical way. The new model of Heritage Futures is an intentional, anticipatory, cultural tool to co-create better futures in the human-nature interface.

Discussion

John Deely writes about semiosis as a universal network of signs of which one part is an interactive network of signs between human beings and their surroundings. Deely calls this ‘anthroposemiosis’. (Deely, 1994, 22–31.) In this paper, culture is defined as a process of

anthroposemiosis: a global, constantly changing process of signs, or traditions, including interconnected tangible and intangible elements (Siivonen 2008; see also Hannerz 1994; Bringéus 1976). Traditions can in some cases be defined as heritage (e.g. Siivonen 2018). Culture as anthroposemiosis is a relationship between human beings and their surroundings. It consists of interconnected elements of nature and human made material world, as well as skills, practices, concepts, thoughts and stories that people share with each other as traditions. Through anthroposemiosis, these surroundings become a part of human understanding and human beings have an impact to their surroundings. In the human-nature relationship, nature in its cultivated and culturalizated form (Boudes 2011; Simmel 1988) is a part of signs in the human mind. In anthroposemiosis, both change and resistance to change are produced by human beings as traditions. Thus, traditions have always an implicit transformative power. Cultural heritage promotes more explicitly future oriented actions (e.g. Siivonen 2018).

According to Roberto Poli (2017, 2–5), anticipation has focus in the uses of temporal and futures oriented understandings, which are always a part of actions in present. Thus, traditions and heritage in anthroposemiosis can be seen primarily as more or less consciously anticipatory perceptions and interpretations based on different meanings and values, which are interconnected, among others, with human actions and practices in relation to the nature.

In the semiosis, there is an area outside of anthroposemiosis: nature in its uncultivated and unculturalised form. Also anticipation (Poli 2017, 2–3, 5) is seen as not only a human phenomenon. Other living creatures communicate with one another, with human beings and with the tangible and intangible, cultivated and culturalized, as well as uncultivated and unculturalized world in an anticipatory way. Communication of human beings is not separate from the communication of other species or inorganic nature; rather, they are tightly intertwined (Deely 1994, 6, 24, 41 and passim). In some parts of anthroposemiosis there is understanding of nature, semiosis, which exerts power over culture, anthroposemiosis (Siivonen 2018). In order to reach ecological sustainability, anticipatory understanding of semiosis inside and outside of anthroposemiosis seems to be required.

As we know, the direction of the unavoidable change of culture, especially in our technologized world, is not necessarily towards a more ecologically sustainable world. There are tendencies towards the overuse of natural resources, even in areas where human beings have a strong commitment to nature and the understanding of semiosis outside of anthroposemiosis is relatively strong (Siivonen 2018). In order to see culture as a subordinate part of nature allows, however, for investigating the human-nature relationship and questions of sustainable development from an interesting and important perspective (see Willamo et al, 2017, 422 and passim.).

Summary

This paper suggest a new form of Heritage Futures as tools to co-create alternative images for sustainable futures and accordingly actions in culture and society. Heritage Futures need to include both anticipatory understanding, and understanding of semiosis inside and outside of anthroposemiosis, in order to help us to better understand the human-nature interface and to form practical solutions towards a more sustainable Globe.

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Title: We're Wasting Time: Harnessing the Temporality of Commodities to Motivate Responsible Consumption

Abstract:

In this paper, I argue that an orientation towards commodities that is grounded in the present is ill-suited for addressing the consumption-related crises that await us if we fail to drastically shift the trajectory of our material economy. Drawing primarily from Karl Marx's theory of commodity fetishism and Jane Bennett's vital materialism, I first argue that our experience of commodities is epistemically limited, as it effaces the commodity's past and possible future. Specifically, when we experience a commodity, we discount the human suffering and environmental damages implicit in its production (past) and disposal (future). Thus, our knowledge of commodities is temporally constrained to the present moment. Though commodities are transtemporal object-processes, the market structure inevitably conceals their past and possible futures, which poses a barrier to making ethical consumption decisions. Next, I bring Marx and Bennet into conversation with semioticians like Arthur Berger and Roland Barthes, whose writing has contributed to the widely-accepted sociological theory that commodities are tools of identity-construction. The intertextuality between Marx, Bennett, and semiotics demonstrates that, when we discount the pasts and futures of commodities—and thus consume them as ahistorical, future-less entities—we fail to incorporate their unethical impacts into our notions of who we are. This erasure of injustice from the self, motivated by our present-oriented commodity experience, weakens our ability to make responsible consumption decisions. Put differently, the limited self-knowledge conveyed to us by our material possessions precludes us from fostering the sort of political responsibility necessary to tackle the complex, globalized challenges that lie ahead. Drawing primarily from Judith Butler, I tease out a relationship between self-knowledge and the capacity for political responsibility. I further nuance my

discussion of responsibility with Iris Marion Young's social connections model of responsibility and Shalini Satkunandan's *Extraordinary Responsibility: Beyond the Moral Calculus*. Finally, I end my paper with a call to explore new ways of seeing and being in relation to commodities—ways which allow commodities to be experienced intertemporally—such that we are more cognizant of the environmental and human effects that occur along the lifecycle of the commodity. This, I argue, will allow us to uncover new modes of identity that are inclusive of our intertemporal connections with humans, the environment, and non-human beings. To this end, I discuss some theoretical and practical attempts to facilitate ethical consumption by bringing either the past or future (or past and future) of commodities into consumers' view.

Capturing uncertainty in material culture

Abstract

Design has long been understood as the collaborative, hands-on process that takes an idea and forms it for a market (Lawson, 2006). 'Design thinking' in particular has emerged as the means to innovation and competitive advantage for businesses while also being espoused for resolving 'wicked' problems whether they be driven by systemic issues, or related to service and policy design or community development (Gero, 2010).

Di Russo says that Rittel and Webber in their seminal research on 'wicked problems' "shaped contemporary definitions of design thinking, with current definitions drawing examples from higher orders of design practice" (2016, p.45). This has influenced the uptake of design thinking as a tool of innovation and complex problem solving in business and organisations, and it has led to the proliferation of design thinking (aka design) as a means to solve wicked problems and tackle complexity. The perception for many of the contemporary wicked problems such as poverty, water and food scarcity, sustainability and climate change, is that design and design thinking are possible tools to create innovative, viable and desirable, yet environmentally sustainable, solutions (Kimbell in Engine, 2012, p.21).

Designing for tomorrows

According to Fry (2009 p. 12) "In increasingly more unsustainable worlds, design intelligence would deliver the means to make crucial judgements about actions that could increase or decrease futuring potential". This could be adding to the notion that most often design's agency is posited with those who hold the kudos (and ego) of 'designer' or 'design thinker' as well as in aesthetics or form, systems or things. Fry (2009) and Brown (2009) share a belief that design can equip people with knowledge and skills that they can use to shape the conditions of their lives. But in ignoring or skipping over foresight and futures thinking, the opportunity for people to 're-make' a common good that is human-centred, is dramatically reduced.

Significantly, the more design thinking is used to innovate and solve problems across many professions, the more design itself is brought into significant conversations and decisions that shape our collective futures, yet only recently has the grounding consideration of whether design or design thinking has sufficient capacity or capability in futures thinking or strategic foresight emerged.

If designers are to comprehensively and consciously design for multiple alternative futures (Slaughter 2005) then it could be argued that they are required to have an understanding of both the interconnected causal mechanisms in the design process and how to anticipate the causal mechanisms in the values, beliefs and actions that determine whether those futures are created. Further, the anthropocentric stance and focus of design for 'people-as-users' perhaps needs to be reconsidered towards design that includes non-human life (Jain, 2018).

In 2016, Dan Lockton asked if design "needs to tackle 'the future' in a more nuanced and exploratory way, not the conventional approach of 'trying to pin the future down'

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Design and designers are practical agents of visual imagination, creating the sensory blueprints for the objects and experiences of tomorrow. In short, they have skills, tools and experience to turn abstract future concepts and ideals into visible or tangible form. Designers/design thinkers are primary agents in bringing form to images of futures, and therefore in helping humanity see and negotiate (or refuse) the transition.

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More recently the work of Irwin (2017) and Wahl (2016) has focused on the challenges of creating and sustaining a viable future for humanity. This work acknowledges design as complicit in contributing to consumption and material culture, and that addressing our current state of an overpopulated planet in crisis requires all of us to collaborate, across generations, ideologies and nations (Wahl, 2017). The theories of both transition design and regenerative cultures transcend sustainability or innovation and even social innovation, and instead seek to inform design that influences social change and societal transition towards more sustainable futures.

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The solutions to the world's 'wicked problems' (whether linked to design or not) are more likely to be new processes, lifestyles and changes in meaning, rather than purely material or promotional artefacts. Sustainability is an emergent property of appropriate interactions and relationships among active participants in the complex cultural, social, and ecological processes that constitute life in this century. The necessary shift towards more appropriate and sustainable modes of participation requires that design and education contribute to a widespread increase in social and ecological awareness through transdisciplinary design dialogues.

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Discussing the role of strategic management consultancies in anticipating more socially, environmentally and economically sustainable future(s) - a case study

Considering the exponential speed and range at which new technologies are fusing the physical, digital and biological worlds, with many far-reaching impacts on all disciplines, economies and industries (Sardar & Sweeney, 2016; Schwab, 2017), discussing the major impacts of these changes on governments, businesses, society and individuals has become more important than ever (Schwab, 2017). At the same time, it has become a lifeline for companies and organisations of all size and of interest to challenge themselves with new strategic approaches to organisational renewal and growth.

According to recent studies on corporate foresight, companies with a high level of futures preparedness may well even double their economic growth (Rohrbeck & Kum, 2018; Rohrbeck et al, 2018; Hojland & Rohrbeck, 2018). This is well in line with another study demonstrating how investments on the continuous development of future growth options clearly support the long-term vitality (i.e. competitiveness) of organisations (Reeves et al., 2018). However, identifying and exploring the growing complexity, chaos and contradictions is no longer enough (Saffo, 2017). And still, the majority of organisations tend to be focused on very narrow, short-term, forecast based assumptions about the future. This is a challenge for Europe: More than 80% of the world´s fastest growing large companies are based either on the Chinese east coast or on the west coast in USA, with European companies seriously lacking behind (Reeves et al., 2018).

When organisations fail to challenge their fundamental anticipatory assumptions about the most probable future (Miller, 2018; König et al., 2014), the risk of not being able to promote the creation of productive futures, yet unforeseeable, increases accordingly (Marion & Uhl-Bien, 2001). From the European perspective, there is a high risk of 'losing the game' by not finding the perspectives and tools that enable the adoption of new, more dynamic strategies and business models (Reeves et al., 2018). Or, even more importantly, as stated by futurist Amy Webb, it could happen that the biggest global corporations would inadvertently build and enable vast arrays of intelligent systems that would not share the European motivations, desires, or hopes for the future of humanity (Webb, 2019). With this in mind, having the capabilities to analyse the large-scale impacts of global decision-making are an equally important part of organisational futures preparedness. The greater the futures consciousness is, the better organisations understand *why* and *how* they can use the future, eventually giving them more perspective on what they can and might do. (Miller, 2018). Finally, enhancing the organisational futures preparedness is a major element in ensuring the welfare of the global society.

In order to understand these totally new kinds of operating models that extensively bring together various sectors and organisations, and the processes enabling their operations (Ketonen-Oksi & Valkokari, 2019), several both public and private organisations now draw upon the services of strategic management consultancies to support their strategic renewal. From this perspective, one could say that the strategic management consultancies play an important role not only in directing individual companies and organisations, but in anticipating more socially, environmentally and economically sustainable future(s) regarding the entire world economy. But how obvious is it?

This abstract and the presentation are built on the grounds of a 2-year long, action-based case study in a strategic management consultancy wanting to develop their futures preparedness. The corporate foresight assessment model by Rohrbeck et al. (2018) is applied to aggregate the different views, experiences and knowledge that form the case company employees´ evolving capabilities and understanding about foresight creation and anticipation during the study. In addition, series of timely managed interventions are initiated: participating in customer work as a futurist-in-residence, supporting the use of foresight in service development, presenting and sharing foresight-based

information and knowledge etc. These interventions have resulted in novel insights about the major change drivers impacting the future of work, and about the structural and cultural changes supporting foresight creation and anticipation within the consultancy business.

The topics of my presentation are:

Introduction: 1) Few words about corporate foresight, 2) Key facts about the case study

Main observations: Discussing the importance of strategic management consultancies in anticipating more socially, environmentally and economically sustainable future(s) a) within the consulting industry and, b) within their client organisations. Key challenges and possibilities?

Concluding remarks: What is the role that consultancies can take in delivering futures-oriented services? Who ensures the quality of these foresight activities? How should they connect with professional futurists in leveraging the needed capabilities and competences? What next?

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The presentation will discuss work in progress from a two-year research project (Sept 2018—Aug 2020): 'Imagined Futures of Consumption' (Funded by the UK's Economic and Social Research Council – project ES/R007942/1). Imagined futures of consumption here refers to both lay expectations and to models and visions of futures of consumption produced and circulated by corporations, think tanks, consultancies, political parties and public agencies, NGOs and social movements. Since the end of the Second World War, the imagined future of consumption played a critically important role in the wider social imaginary (underpinning common understandings of the economic and the political), in the form of the promise of 'prosperity for all' realised through mass consumption in the consumer society. The project explores the significance of "imagined futures of consumption" in the context of the contemporary crisis in political and economic imaginaries. The presentation will focus on the first of three core empirical components of the project which analyses lay expectations of the future of consumption through a Mass Observation Archive (MOA) 'Directive' (www.massobvs.org.uk). MOA 'Directives' consist of written questions and prompts concerning an area of research that elicit rich, unstructured free text responses from MOA's panel of volunteers. The panel is not demographically representative. A Directive on 'The Future of Consumption' was sent out in Dec 2018 which asked the panel to respond to questions and prompts concerning expectations of their own future consumption, and elicited speculation about change and continuity in different domains of consumption (e.g. travel, housing, food) for future generations, and in 50 and 100 years' time. 128 responses were received and analysed using Nvivo 12. Analysis was conducted by combining inductive coding with coding developed from Mische's (2009) concepts of "dimensions of projectivity", which specify cognitive dimensions of future projections, such as "Extension" (e.g., utopian movements' vision of long term transformation; or short term of business and electoral cycles), "Contingency" (i.e. degree to which projections are imagined as predetermined or uncertain), "Sociality" and "Volition" etctera. The aim of analysis is to relate the "dimensions of projectivity" to imaginaries of future consumption, where imaginaries are understood as affectively-charged "representations of how things might or could or should be" which may be enacted within actual social practices as "materialisations of discourses" (Chiapello and Fairclough, 2002: 195).

Visions of collective futures embody expectations of future states, pragmatic beliefs, and beliefs about the 'the common good'. They play a critical role in critique and processes of problem-solving and in processes of social and political mobilisation (Mische 2009). Faith in the providential future of consumer society as the "realm of freedom" beyond the sphere of production has been fundamentally challenged: firstly, through loss of faith in "mass utopia"— "that the industrial reshaping of the world is capable of bringing about the good society by providing material happiness for the masses" (Buck-Morss 2002:3); the profound challenge of the ecological crisis to the horizon of limitless economic growth on which the twentieth-century democratic imaginary was founded (Mitchell 2013); and critically in the wake of the global financial crisis, with the collapse in faith in expectations of continuously rising living standards in the USA and Western Europe (Ipsos Mori 2011, 2017; Pew Research Centre 2013); as well as with elite fears of secular stagnation (Gordon 2012) and profound geopolitical reconfiguration (Arrighi 2009). This collapse of a hegemonic imagined future of consumer society opens up cultural and social space for both competing capitalist imagined futures of consumption and alternative or anti-capitalist imaginaries. It is within this context that the wider project seeks to explore the role of imagined futures of consumption in processes of social and political contestation and legitimation, and how such futures shape, and are shaped by, social processes (Mische 2009). The presentation will contextualise the analysis of the MOA Directive data within this wider context.

Anticipation Conference 2019

Paper Proposal

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Title: Theatre Arts and Futures Literacy: anticipating an approximation

Abstract

In this paper, we draw a series of parallels between the disciplines of Theatre Arts and Futures Literacy. We posit that many aspects of theatre practice are concerned with becoming aware of and examining one's anticipatory assumptions in (often, but not necessarily) fictional situations. Rehearsal techniques, devising tactics, improvisation, and applied theatre methods; all contain elements of both 'Anticipation for the Future' and 'Anticipation for Emergence' (Miller, 2018) and may open interesting avenues in terms of a productive interdisciplinary dialogue between theatre and Futures studies. We speculate, in particular, about the potential compatibility of specific theatre and performance practices with the design principles and objectives of Futures Literacy Labs. To that effect, we will offer a case study on the design and implementation of a Futures Literacy Lab that took place in Greece in July 2019 involving asylum-seeking unaccompanied minors. Tools from the theatrical arsenal of Brazilian practitioner and theorist Augusto Boal (Image Theatre, Forum Theatre) were adapted and deployed, in an attempt to foster responses from participants that were not only future-oriented, but also aware that they were so – in other words: fomenting futures literacy. As such, Futures Literacy may become a key point of impact Theatre Arts may have on Futures Studies.

Discussion

In this paper, we draw a series of parallels between the disciplines of Theatre Arts and Futures Literacy. We posit that many aspects of theatre practice are concerned with becoming aware of and examining one's anticipatory assumptions in (often, but not necessarily) fictional situations. Rehearsal techniques, devising tactics, improvisation, and applied theatre methods; all contain elements of both so called 'Anticipation for the Future' and 'Anticipation for Emergence' (Miller, 2018) and may open interesting avenues in terms of a productive interdisciplinary dialogue between Theatre and Futures studies. We briefly outline some of the 'anticipatory' aspects of these theatre practices, and focus our attention on the potential use of applied theatre methods in relation to futures literacy.

Over the last decades, a growing number of foresight practitioners and researchers focus on the potential of futures work for social change, transformation and emancipation (Inayatullah, 2013), (Kahane, 2012), (Slaughter, 1996), (Miller, 2018), (Milojevic, 2002).

From as early as mid-nineties, Slaughter wonders, “how can future possibilities be made real enough to stimulate present-day responses?”(Slaughter, 1996). A decade later Candy argued that, the so-called ‘experiential gulf’ between abstract notions on possible futures and everyday experience impedes futures thinking from entering the mainstream culture (Candy, 2010). At the same time Theatre Arts as a discipline has a heritage of social engagement and has been theorized and practiced as a means to challenge underlying assumptions about the world (Brecht’s ‘Epic Theatre’) and even change the future of participants (Boal’s ‘Theatre of the Oppressed’).

Over the last decade, there has been much experimentation in futures work with the use of several media and arts ranging from storytelling and role-playing to gamification and design. An indicative and well-documented example of this effort is Candy’s work on experiential futures. Experiential futures allows for the use of different media and arts, without focusing or prioritizing a particular one as long as a high-quality engagement can be achieved (Candy & Dunagan, 2016).

Although performance has been used in the context of futures work such as the experiential futures, and many futures games such as the Sarkar Game or the Scenario Exploration System entail role-playing dimensions, their interconnections have not been examined sufficiently at theoretical level or documented at a practical level. A preliminary mapping of the various parallels between futures studies and drama has been offered by Sabina Head. Head suggests, among other things, that drama can offer ‘rich, layered, concrete visions of the future through performance” (Head, 2010).

In this paper, we speculate about the potential application of theatre and performance methodologies to Futures Literacy Labs as one tool for developing Futures Literacy (Miller, 2015) acknowledging that some ‘translation’ may be necessary across the vocabularies of each discipline, so that overlapping and diverging epistemological fields may be more clearly demarcated. Futures Literacy Labs are carefully designed workshops (customized to time and place specificities) where collective intelligence knowledge creation processes and learning by doing approaches are deployed to enable participants to reveal, reframe and rethink their anticipatory assumptions, to become futures literate (Damhof, 2018).

In particular, we would like to examine whether theatre and performance practices as the ones mentioned above are well suited with the design principles and objectives of Futures Literacy Labs , focusing on their potential:

i) for enhancing the revealing of anticipatory assumptions,

ii) for fostering a collective process of rigorous reframing by challenging underlying assumptions and co-creating alternative future scenarios based on new sets of assumptions and;

iii) for fostering introspection and reflection in order to generate new questions and rethink the future of a selected topic of concern.

To that effect, we offer a case study on the design and implementation of a Futures Literacy Lab, involving asylum-seeking unaccompanied minors that took place in the island of Lesvos, Greece in July, 2019. In this workshop, tools from the theatrical arsenal of Brazilian practitioner and theorist Augusto Boal (Image Theatre, Forum Theatre) were adapted and deployed, in an attempt to not only foster future oriented responses from participants but also to be sure that participants were knowningly responding about the future -in other words: fomenting futures literacy. As such, Futures Literacy may become a key point of impact Theatre Arts may have on Futures Studies

Applied theatre practices often deal with communities and individuals in a transformational manner, which is, by definition, future-oriented. Boal's notion of theatre as a 'rehearsal for revolution' and for life itself, turns the act of theatre-making into a political act (Boal, 1995), that of taking control of one's own future. With their focus on communities outside traditional 'theatre' settings, applied theatre practices offer a framework for our approach in bridging the two disciplines. In this respect, the work undertaken with asylum-seeking unaccompanied minors serves as a first case study for this potential interdisciplinary collaboration: tools derived from the arsenal of the Theatre of the Oppressed were adapted and put to use, with the aim of de-naturalising the participants' everyday somatic bahaviours and releasing creativity. Through Image Theatre techniques, anticipatory assumptions were not only revealed but also embodied and made 'real' (i); Forum Theatre techniques were used to challenge and reframe assumptions revealed in the first phase (ii); and Rainbow of Desire approaches were used as a means of fostering reflection (iii).

This paper will discuss some of the challenges, pitfalls and successes of this process - including theatre's ability to help overcome linguistic barriers among diverse groups - and point towards future avenues for joint exploration.

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