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Performative Practices and States of Play: Exploring the Role of Arts and Culture in the Co-Creation of Anticipatory Governance Dynamics

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Abstract. As the question of anticipation moves center stage in design-driven policy and governance development processes, anticipatory approaches to governance have expanded the focus of such exploration to concerns ranging from the co-creation of scenarios to complexity management strategies. Through *anticipate*, a non-disciplinary research network initiated and coordinated by arts and culture organizations interested in collective agency and intelligence, the authors have explored and engaged with this dynamic. To facilitate critical assessments of the paradigms that inform the design and widespread adoption of predictive systems, we have reframed anticipation as a collective intelligence design research agenda. Exploring and engaging with research affirming the centrality of collective, cooperative and co-creative dynamics in the design of socio-technological systems, the *anticipate* network focuses on the aesthetic practices through which such agency and intelligence become tangible. Introducing the OECD's work on anticipatory innovation governance, this essay aims to contribute to these conversations on co-creative systems design by making the case for the inclusion of arts-and-culture approaches in anticipation-oriented policy and governance development processes.

1. Anticipatory Governance and Collective Agency

Our research engages with the widespread concern that the ecological and economic transition of Europe's societies is above all a collective action problem. The tasks ahead of us overwhelm individual agency and call for new forms of collaboration. Since bridging the gap between having to (individually) act now for a future (collective) benefit remains a challenge for many of us, we are convinced there is an urgent need for "futural" approaches to guide the behavioural, social and cultural change for which this crisis calls. We contend that the first step in addressing these collective action challenges is to contextualize the very concept of agency - to understand how different contexts affect what we can do, and how we can best support the individual and collective exercise of such agency. Specifically, we focus on the role of anticipation as a collaborative practice allowing us to expand and explore the temporal horizon of our individual and collective agency, and emphasize the relevance of such anticipatory practices from across arts and culture to the design-driven policy processes currently being established to organize this transformation.

As many of us work in arts, culture, and design contexts, the growing interest in design-driven policy intrigues and inspires us to seek new forms of cooperation with those involved in these policy processes. This centrality of arts-and-culture approaches amplifies complementary research and design-driven policy efforts such as the EC's Enlightenment 2.0 initiative and its critical reexamination of citizenship.[1] In addition to Enlightenment 2.0 research on collective agency and

[1] https://ec.europa.eu/jrc/en/enlightenment-research-programme

intelligence, related initiatives include the Horizon Missions on climate change[2] and on smart cities[3] as well as the living-in.eu platform[4], GAIA-X[5] and the European Data Strategy[6], the work of the EU Policy Lab[7] on future-oriented co-creation methods and the New European Bauhaus[8], and the EU Science Hub's work on education and creativity (Venckutė et al, 2020).

Reflecting this interest in integrative approaches across different domains, the EU Policy Lab has also stressed that a "structured and systemic approach to generate insights relevant for the mid-to-long term future" should "build not predictions but plausible narratives about alternative futures".[9] The climate scientist Hans-Joachim Schellnhuber has frequently made the case for poly-centric approaches to mission-driven transformation processes; the "Bauhaus der Erde" (Planet Home) manifesto that partially inspired the "New European Bauhaus" also stresses the need for "new narratives for the future", where each narrative needs to be "one that doesn't moralize, but rather makes palpable the benefits of ecological change".[10] Our emphasis on narratives also reflects research on "change agents". A first comparative study of global best practices in encouraging "change agents" concludes that "there was only one overarching 'language' that was easily understood by all sectors and disciplines: the use of narratives and storytelling. ... We need a shared learning and collaboration framework that works in practice. Underpinning this whole-system framework is a shared language based on narratives" (Rotman, 2018). The multiplicity of meanings made as vast numbers of people engage in a coordinated process of transformation calls for special attention to these dynamics of meaning-making.

Such observations have been echoed in the *Enlightenment 2.0* and EU Policy Lab approaches already referenced as well as the European Commission's first annual *Strategic Foresight Report, Strategic Foresight - Charting the course towards a more resilient Europe*, presenting the Commission's strategy to integrate strategic foresight into EU policy-making. The report analyses resilience along four interrelated dimensions – social and economic, geopolitical, green and

2 https://ec.europa.eu/info/publications/climate-resilient-europe_en
3 https://ec.europa.eu/info/publications/100-climate-neutral-cities-2030-and-citizens_en
4 https://living-in.eu
5 https://www.data-infrastructure.eu
6 https://ec.europa.eu/digital-single-market/en/european-strategy-data
7 https://blogs.ec.europa.eu/eupolicylab
8 https://europa.eu/new-european-bauhaus/index_en
9 https://knowledge4policy.ec.europa.eu/behavioural-insights/about-behavioural-insights_en
10 https://www.bda-bund.de/2020/05/planet-home, https://www.bauhausdererde.org

digital – and explains its importance for achieving our strategic long-term objectives in the context of the digital, green and fair transitions. The first priority of the strategy is to "build and use collective intelligence to anticipate developments and prepare for new opportunities and challenges earlier and more effectively" (EC, 2020, 4). We aim to link the interest in collective action and intelligence to such a wider vision of futural agency and the role of co-creation activities in anticipating alternative futures. In this paper, we enter this conversation by way of a canvas developed by the OECD to support anticipatory policy-making and facilitate such collaborative sensemaking.

2. OPSI's Innovation Facets Model

Expanding the focus of the EU policy processes featured in the introductory section, one of the most comprehensive efforts attempting to focus on anticipation in innovation governance is the work of the OECD's "Observatory on Public Sector Innovation" (OPSI). Contributing to such a shift, OPSI researchers integrate anticipation into an "innovation facets" matrix that compares and contrasts four different types of innovation.[11] Acknowledging that "[a]nticipatory innovation is the least developed facet, in the public sector and beyond", they also note that this is changing as more actors engage with future developments.[12]

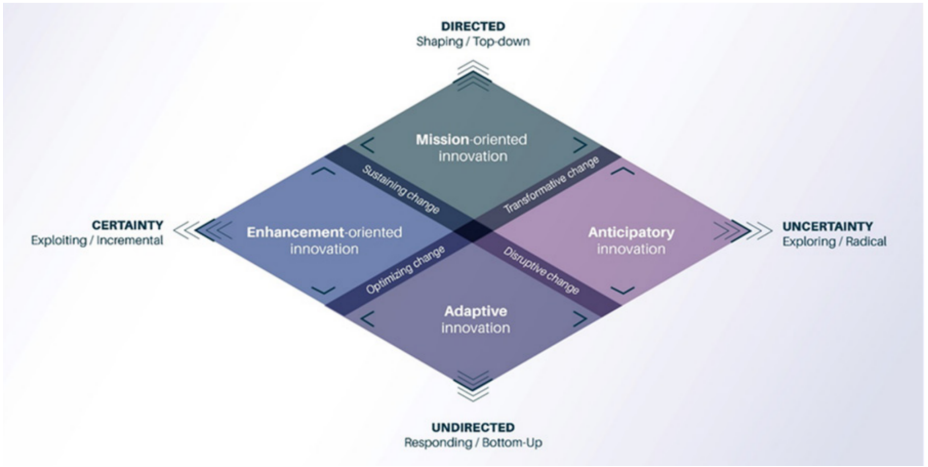

Figure 1. OPSI Innovation Facets Model

[11] https://oecd-opsi.org/projects/innovation-facets
[12] https://oecd-opsi.org/projects/anticipatory

Enhancement-oriented innovation	Mission-oriented innovation
"How might we do X better?" Focus on questioning not what is being done, but rather how it is done and whether it can be done differently, and hopefully better	"How might we achieve X?" Focus on a driving ambition to achieve an articulated goal, though the specifics of how it might be done are still unclear or are not set in stone
Adaptive innovation	**Anticipatory innovation**
"How might our evolved situation change how we do X?" Focus on realisation that things are happening that don't fit with what is expected	"How might emerging possibilities fundamentally change what X could or should be?" Focus on recognising and engaging with significant uncertainty about not only what works, but also what is appropriate or possible.

Figure 2. OPSI Innovation Facets Matrix (summary by the authors)

3. Performative Practices and States of Play

Building on future studies, scenario development, and speculative design, the interest in anticipation as a holistic framework continues to grow (Poli, 2019; Miller, 2018). In this context, authors and colleagues initiated *anticipate* - a collective intelligence design research network. Many of the ideas in this essay have been co-developed in the context of conversations across the research network.[13]

When the network was initiated, the researchers decided not to position the project in the context of a specific academic discipline or research field but to maintain a "non-disciplinary" stance reflecting the shared interest in experimental research methods. This approach echoes critical assessments of the European research system: "[t]he solutions to the complex 'wicked' problems that we face today will be systemic" and "[b]e open to systemic experimentation for innovation in the public and private sectors" (EC, 2019, 7, 13). Such a stance is, in turn, necessarily dynamic (tracking transformations rather than observing final states) and collective (as there can be no single perspective from which the whole of a process or system comes into analytical view).

[13] https://www.anticipate.network

It is through the “anticipatory arts" of play (role-playing, storytelling, dystopian and utopian thinking in cinema, games, literature) and their what-if power that we can develop new ways of engaging in fore-sighting activities on all levels of generative engagement - from the individual citizen to the policy maker structuring the different stages of such engagement (Garcia et al, 2020). In the course of the anticipate network conversation, we have come to embrace a type of play where players change the rules of engagement and exploration as they move through the process using the following principles of engagement:

1. Explore Impact. Rather than solely focusing on a single technology (such as artificial intelligence) as a field of applied innovation, the network makes the question of collective intelligence the focus of non-disciplinary inquiry and experiment. This allows us to approach, explore and comprehend the wide-ranging implications and possible impact of machinic intelligences without locking us into the dynamics of technological development.

2. Imagine Innovation. New imaginaries, new narratives, new horizons - if we are to anticipate worlds in which human and non-human actors become part of collective intelligences, we will need all of these. In imagining alternative futures, the network widens the space of innovation. This goes both ways, as we also need to innovate imagination. New technologies change the way we can arrive at concepts, tell stories, foresee futures. This opens up new problem spaces and calls for new conceptual blueprints to ultimately create new instruments for the organization of change.

3. Co-Create Discourses. We can only find the new if we have a language that allows room for the unknown. Otherwise we may not be able to name the new when we encounter it - or miss it altogether. The network critically assesses the terms we have come to use to talk about the new - and creates new terms whenever we think existing terms won’t do. The co-creation of new languages is one way to anchor technology design in a broader and more holistic conversation about how we want to live and work.

4. Make Worlds. The distinctions we have established in education and research have served us only so well in building new alliances. Rather than struggling to re-connect what we have come to accept as always already separate - IT, SSH, Arts and Culture - we begin with a multi- and even non-disciplinary view of the systems and worlds of which we are a part. In the context of ecological crisis, we need to have a better sense of how the world exists - its interdependencies, its timescales, its spatialities. If technology is to play a role in addressing this crisis, we need a way of speaking about worldmaking that acknowledges that technologies can play multiple roles, and that our ways of exploring impact must acknowledge the complexity of technological agency.

5. Contextualize Agency. The conditions of change frame our agency - as they change, so do our options for individual and collective action. Awareness of contexts directly translates into new possibilities for action. We need to rethink how we can explore anticipatory assumptions, harnessing structures for mutual learning to meet these challenges. By collaborating with a wide range of actors, we can devise new educational formats to properly assess, scope and tackle more complex and chaotic problems.

4. Culture, Connectivity, Co-Production

Given these principles, the "innovation facets" that interest us most in the work of OPSI are "mission-orientation" and "anticipatory". Both stress different types of future agency and serve as a reminder that the future is plural - a banality, but as anticipation research has shown, we often fall into the trap of backshadowing without realizing it: "The stories we tell about the future, including our future selves, must be open, multi-linear, and multidimensional in order to avoid anticipatory backshadowing, which forecasts the future as a continuation of the past and present" (Lively, 2019). Focusing on the experimental approaches of arts and culture to explore the anticipatory assumptions we make, we hope to be able to avoid such "tacit" biases. Methodologically, we have foregrounded approaches that acknowledge the central role such narratives play.

While we welcome that such acknowledgement of the role of culture - identity, memory, narrative - is slowly finding its way into policy perspectives, as exemplified by the European Commission's work on "Enlightenment 2.0" or the "New European Bauhaus", we remain cautious as such insights are all-too-quickly subsumed into a new master narrative of "resilience" (as in the EC's key work on "Strategic Foresight"). It is highly problematic when "creativity" is invoked as the key ingredient of resilience strategies and such creativity is undermined by the conditions of self-exploitation and scarcity management that characterize the life and work of many artists and cultural actors (Polivtseva, 2020). So rather than invoking "culture", we always speak of "arts and culture" to recall the wide range of aesthetic and performative practices that constitute "culture". We contend that an inclusive society offers narratives that allow everyone to play a role rather than narratives whose fundamental assumptions make such inclusion impossible (Costanza-Chock, 2020). In such a process, anticipation is both a concept and a way to act. This is key to the work of *anticipate*, because arts and culture do more than power the cultural and creative industries (which is how many policy narratives position arts and culture). They reimagine cultures of connectivity and modes of human and non-human relation, draw attention to the friction involved in "scaling" local dynamics to translocal (global) levels, and offer forms of performative co-production that allow us to experiment with futural forms of collective agency and intelligence.

5. Research Contexts and Outlook

If the concept and practice of anticipation is referenced in HCI research, much of it occurs in the context of autonomous and intelligent systems and focuses on anticipating user behaviour or designing virtual agents. Our research is more in line with Steinhardt & Jackson (2015) as they advance three basic claims:

> "first, that long term technological development and sustainability in science is guided by complex and distributed forms of futurism; second, that all actors (both individual and collective) orient towards the future (at both temporally close and distant scales); and third, that actors engage in complex and skilled forms of anticipation work - individual and collective, formal and informal - that guide and shape the present character and experience of collaborative life" (ibid.).

Research in CSCW has played a key role in advancing our comprehension of media in facilitating cooperative agency (Schuettpeltz, 2017). As noted by Suran et al (2020), "Collective Intelligence (CI) platforms have become a vital resource for learning, problem solving, decision-making, and predictions"; research by Draheim (2019) has also stressed the link between current collective intelligence design approaches and the history of cybernetics, specifically the role of Stafford Beer's Viable Systems Method in organizational development; and Grunewald et al (2019) have called for more research on collective consciousness to better understand the motivations and outcomes of collective intelligence dynamics. Our own research on the role of co-creative and collaborative formats of sensemaking has explored anticipation as a matter of cooperation and collective intelligence design from the very beginning - anticipatory practices framed by these platforms for collaboration, inspired by systemic design approaches, and aiming at broader dynamics of worldmaking.

Following our interest in exploring artistic practices that reimagine citizenship and democracy for an age of autonomous systems and artificial intelligences, we now intend to engage with anticipation in the context of context-specific triple loop learning formats - formats that link individual and organizational learning - by developing modules for *anticipate academy*, a follow-up project to the anticipate research network. Along with OECD research on systemic design (OECD, 2021), the OECD-OPSI work on innovation facets will be an important reference in designing such learning modules, and we plan to work with public sector actors to explore how anticipatory innovation governance concerns might best be made tangible in different local contexts.

Exploring our shifting sense of "socially embedded technology" via terms such as collective agency and intelligence, the authors are convinced that such changes include the concept of the social itself - when machines are part of cooperative dynamics, "the social" extends beyond the domain of the human and human-machine interaction to include new forms of distributed agency and intelligence. The adoption of distributed intelligent systems by public and private actors, driven by the interest in reorganizing human-machine collaboration and informed by a range of values, cannot but raise concerns regarding the ways in which we imagine the future of human-machine relations. Focusing on the central role of language - the way we describe and discuss these systems - in framing the kinds of agencies and intelligences we imagine, the IEEE has recently called for a "de-anthropomorphizing" of machinic intelligences to create space for new visions of collective intelligences and address the full range of ethical implications of co-designing such intelligences (Kostopoulos, 2021). Given the centrality of the question of the human in this context, one would imagine that arts and culture have played a central role in such exploration. This has not been the case. But as discussions of innovation increasingly involve holistic approaches to ideation, implementation, and impact assessment, we engage with the "arts of anticipation" to stress the role arts and culture have played and will continue to play in anticipating multiple futures.

This is about more than calling attention to arts and culture as a sector rarely considered in innovation policy, or its structural precariousness aggravated by the current crisis. We see arts-and-culture-inspired anticipation as part of a broader conversation about the redesign of socio-technological systems and regenerative economies, whilst at the same time expanding our historical awareness of the ambivalent role artists have played in the development of such systems (Beck and Bishop, 2020). We are beginning to imagine machines as actors in democratic societies by giving "automated decision-making systems" an ever-expanding role (Algorithm Watch, 2020), the European Parliament has already (and passionately) debated whether or not to grant machines independent legal status (EP, 2016), and philosophers are exploring how the plasticity of machinic intelligence might affect how we imagine human-machine communities (Malabou, 2019). Through the collaborative analysis and assessment of embodied experiences across the arts, we aim to facilitate our comprehension of contextual agency in embedded systems and human-machine-networks more generally, to couple such technological

visions with the distributed non-human agency of ecosystems, to support the co-creation of new interfaces to these systems, and hence to foster the future-oriented engagements with societal challenges that are needed to comprehensively analyze and effectively address them. Embracing the arts and cultures of anticipation helps us to rethink the ways in which we want to live and work. And makes sure we don't fail to explore a future just because we struggle to imagine it.

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