# Culture, Art, Digitalisation

## Digital Transformation in Learning for Active Citizenship

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Democracy and Human Rights Education in Europe

BLUE LINES

**Culture, Art, Digitalisation.**

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# Preface:
# Into Digital Transformation

## The social, economic, cultural and political impact of digital change in education and learning

Digitalisation is an essential part of our lives across all dimensions. Many people think that it is a technological process, i.e. it is mainly about computer servers, algorithms, Internet and the like. But that is only half of the truth. For example, it is difficult to separate digitalisation from almost all activities in our lives. When we shop online – are we online or are we shopping? When we play computer games – are we playing or are we at the computer? And when we are active in social media, we are both social and active in an electronic medium. Moreover, our health system is already digitised, the pollution of the planet is, to a growing extent, caused by digital technology, and activities such as navigating a car or collaboration in civil society are increasingly facilitated by digital technology.

This example seeks to point out that what we ultimately understand by ”digitalisation” depends very much on how we look at the topic. It is after all possible to engage in all the aforementioned activities without information and communication technology (ICT). In this sense, we prefer the term *digital transformation*, because it explains a social, cultural or economic process in which things are done seemingly differently – made possible by information and communication technology. In this sense, education for digital transformation is learning about social, economic and cultural processes and about understanding the differences caused by technology. As such, in further exploring the topic, it is important to:

1. Look at both the technology and the nature of economic, social and cultural activities, for example, what we do in different social roles as digital customers, digital activists, digital workers and digital citizens.

2. Take an interest in the difference that digitalisation brings to such activities. What is changing thanks to new technology? What impact does it have on society?

# There is No Overly Complex Issue for Education

A lot of curiosity and increasing concerns regarding digitalisation today have to do with its 'engine room' - the fascinating global infrastructure of the Internet, its enormous costs and hunger for energy, Big Data, AI, and the increasing economic value of digital platforms.

In particular, the growth of new kinds of platforms, fuelled by digital business models successfully capitalizing on users, is a widely visible phenomenon of this new technological and economic configuration. Consequently, their users are at the same time subjects and objects of digital change. They experience the opportunities made available through new, platform-mediated forms of interaction, but also feel uncomfortable since they are also symmetrically affected in their role as autonomous subjects. The right to independent information, privacy and security are, from this perspective, not yet sufficiently respected in the digital sphere.

The migration of substantial parts of working and communication processes to the digital sphere during the last decades is also simultaneously a benefit and a challenge. One aspect is technical mastery – access to current technology and the ability to use it in a competent way. A more fundamental aspect is that the "digital self" is completing people's analogue identity. Their digital traces are accompanying people's lives with related consequences for their various social roles as private subjects, employees and citizens.

Feeling overtaxed by all the associated challenges and concerns is a bad prerequisite for learning and a bad basis for considering future personal and social decisions. It is high time for adult education and youth work to do something about this double-edged sword.

In particular, adult citizenship education has a lot of experience teaching complex social issues and could transfer its methodology and approach to the topic of digital transformation. We know, for example, that nobody needs to be an economist to be able to co-decide on political decisions affecting the economy. We also are capable of understanding the social impact of

cars, despite very limited knowledge of automotive engineering. Considering that it is possible to acquire knowledge about digital transformation, could we not even enjoy learning about Big Data, robotics, algorithms or the Internet of tomorrow similar to the way we passionately discuss political issues such as transport, ecology, or democracy? We should not, however, be blinded by the technical complexity of the digital transformation. It is important that we pay more attention to the social dimension, the intentions behind a technology, exploring its effects and regulations.

Although not familiar with all technical or legal details, most people intuit that it is ill-advised to give out personal information without consent. We suppose what the right to privacy should entail and what distinguishes conscious decisions from uninformed ones, and in our analogue world, we discourage the ”used car salesmen” of our society from taking unsuspecting customers for a ride. After all, most of us have experienced the discomfort of having been deceived as a result of not understanding the fine print.

If we transfer this insight to a pedagogy of digital transformation, we must admit that we should also be willing to explore new aspects of the technical dimension such as data processing or the nudging mechanisms in online platforms. But that is not the only priority! The most important thing is that we know what our *rights* and *ethical foundations* are and how they relate to the new digital contexts and are able to act accordingly. These questions are not solely related to privacy and safety, as seemingly no aspect of social life is unaffected by digital transformation.

Using this foundation, we might further explore the potentials and risks of digitalisation in context, assessing its impact. Personal rights, for instance, entail privacy issues, but digital transformation has also led to new opportunities for co-creating, better information, or involvement of citizens in decision-making processes. On this basis, we are then able to define the conditions and rules under which certain digital practices should be rolled-out or restricted.

E*lectronic* communication has changed the character of *human communication* as a whole. There are fewer impermanent ideas or assertions that go undocumented, to later be searched and rehashed. This change is both positive and negative, for example from the perspective of an employee who may be judged based on past decisions which live forever online. Pedagogy might help people to better understand the risks and benefits associated with electronic communication.

In addition, it will be a creative challenge to imagine the technology we want to develop as a society and what will help us to initiate social, economic and cultural

changes in the future. In this regard, it is also important to develop a view towards the so-called 'skill gaps' and 'digital gaps' people may face when mastering digitalisation. What is the purpose of defining a gap; for whom is the gap relevant; in whose interest is it to argue the risk of gaps as opposed to their benefits?

## Why Democracy and Rights-based Learning Makes the Difference

The essence of a definition of democracy and rights-based education can be found in the Council of Europe's Declaration regarding Education for Democratic Citizenship (EDC), which is "education, training, awareness-raising, information, practices, and activities which aim, by equipping learners with knowledge, skills and understanding and developing their attitudes and behaviour, to empower them to exercise and defend their democratic rights and responsibilities in society, to value diversity and to play an active part in democratic life, with a view to the promotion and protection of democracy and the rule of law" (CoE CM/Rec(2010)7).

Transferred to the context of learning about digital transformation, we extract three core questions from this:

1. *What digital transformation competence* – knowledge, skills, values and attitudes – do citizens need to understand the digital transformation in their society and how it affects them in their different social roles?

2. How are *fundamental rights and ethical foundations* related to the transformation? Where do they shift their nature, what weakens them and what kind of development strengthens their enforcement?

3. What *active civic competences* do citizens need to contribute to the transformation, including participation in relevant public discourses and decisions, self-organisation and social engagement, and the development of social innovations?

Stakeholders from many different sectors have high expectations in education. In particular, they demand from earning for active citizenship a better preparation of Europeans for big societal changes. Only if we implement ideals of democracy "by design" into digital progress will we create a *democratic* digital society.

## Enjoy and Explore

This reader series aims to introduce selected key aspects of digital transformation to educators and teachers in formal, non-formal or informal education. Our perspective is *Education for Democratic Citizenship* and our main goal is to motivate you as educators in adult education and in youthwork or other education fields to dive into the topics connected to digital transformation with curiosity and critical thinking as well as ideas for educational action. In other words: Nobody has to adore technology, but it is definitely worthwhile to become more comfortable with it. Digital transformation is a reality and as such, in principle, relevant for any specific field of education, any subject, or pedagogy.

Together we might work on a broader understanding of what digital literacy is and explore as educators and learners in lifelong learning processes how it affects our lives. With a strong aspect of democracy and human rights in lifelong learning, we should lay the foundations for a democratic digital transformation and empower learners to find a constructive and activea position in this transformation.

We aim to provide basic insights into some of the various aspects of digital transformation as a basis for further exploration. They tackle the digital-self, participation, the e-state, digital culture, media and journalism and the future of work and education. In each of the publications we also present our ideas as to how education might take up this specific topic.

# 1. Introduction: Between Zero and One?

*"Art safeguards a long-term view: not only does it provide a counterweight to the fast evolving world of technology, but also helps to make sense of it."*

Jaroslav Anděl, Artistic Director of the DOX Centre for Contemporary Art,

CoE Platform Exchanges on Culture and Digitalisation

It is often said that few domains of life have been affected as much by the digital transformation as our culture and the arts – from the "production" of art to the enjoyment and "consumption" of it and other cultural expressions. Painting, digital art, film, photography and other visual arts, architecture and design, music, theatre, writing, dance and games and sports – they all seem to have changed or are affected by digitalisation.

Digitalisation is profoundly changing our cultural experience, not only in terms of new technology-based access, production and dissemination, but also in terms of participation and creation, and learning and partaking in a knowledge society.

Is the transformation of culture through digitalisation something new? Culture is something that has always had to cope with emerging technologies, which included the development of new forms of production of cultural work and art as well as their appropriation. We encourage readers to remember the disruptive experience of the invention of photography and the struggles and strong criticisms traditional painters and consumers of the arts led against the new form of reproducing "reality". The invention of the daguerreotype process in the first half of the 19th century as the first form of photography marks a similar change for culture as it coincided with a widely experienced increase in mobility, and widening of horizons for society as the industrial revolution started to gain pace.

Certain parallels exist between digitalisation and the invention of Guttenberg's letter press in terms of widening the horizon of culture beyond the (narrow) frame of art and applying it to a societal system and practice of digitalisation. Guttenbergs invention as one precondition for the Age of Enlightenment was enabling to spread fundamental questions towards the governing norms and structures. However it resulted before in 250 years of chaos, as Michael Seeman points out in his article, "History of Digitalisation in 5 phases" (Seman (2019)).

“Video killed the radio star”. “Everyone can be an artist”. Similar statements mark the rise of popular culture but also state the impact of technical innovation on the production, appropriation and popularisation (in some contexts also a democratisation) of a “higher” culture as a matter of social integration and/or of social distinction.

But let us take several steps back and try to find a way to connect the dots. Is “if it’s done by an artist, then it’s art” also valid in an era of digitalisation, computer supported arts production, and even Artificial Intelligence (AI) arranged art?

In this exploration, we try to identify several spheres where digitalisation interacts with culture and arts. We also try to find some relevant developments that we hope provide an interesting contribution to opening new views and ways to gain experience in digital dimensions for educators. Art offers us an approach to sensitise, interpret and understand the deeper sense of digital transformation. By “us”, we mean: readers and authors as non-media theorists and non-digitalisation natives – as incomplete, erratic and non-holistic cognisers...as non-practicing artists.

## Culture and Nature

*Culture* in its widest sense describes everything that the human being self-creates or self-designs. This in contrast to nature, which describes everything that is not created or transformed by humans.

Following this definition, the transition from the Holocene period to the Anthropocene – where mankind shapes the essence of natural reality itself – poses the question of whether the culture/nature dichotomy is still inherently valid.

In understanding the Anthropocene period as a philosophical and political approach to describe and explain the human-driven changes affecting the global system, digitalisation becomes an all-embracing topic: it is both the result and a part of the problem. And it is said to be part of the solution.

At the start of this consideration about culture and digitalisation we put “the arts” we explore their visions and ideas about the conditions of our societies, from which they arise, mirror, irritate and experiment, inspire and might even mislead. The question of whether the production of arts as such has a societal/political claim or is simply “l´art pour l´art” has been argued for or rejected by producers/artists as well as by consumers/audiences. The question as such has generated debate, not only sociologically, but one that aims at an ongoing reflection about the societal context of the art production process and about the artists themselves.

## Digital Everyday Culture

Since the 60s, so-called "everyday culture", has received "a great deal of attention in the context of semiotic, structuralist, and sociological-philosophical debates, especially through post-structuralist philosopher Roland Barthes. Objects of everyday cultural investigations include cinema, television, cars, bicycle culture, food culture, fashion, design, advertising, sports and objects of everyday use. Themes or objects of everyday culture were read by Barthes as texts that have a surface and a depth of structure, i.e., similar to literary texts, that can be coded and interpreted. One contemporary everyday culture is pop culture. As the defining power of pop culture grew, the dichotomy between 'everyday culture | high culture' was also questioned in public opinion" (Wikipedia: Alltagskultur, 2020).

The investigation and research of everyday culture has become a vital field of scientific interest reaching from sociology to cultural media studies and trend research aimed at better describing, en/decoding and understanding societal systems/subsystems, but also developing prospective analytical capacities.

For understanding the impact of digitalisation on our societies, the everyday culture investigation becomes a relevant field. It is the sphere where appropriation and application of digital tools in everyday habits happens or not, be it the use of social media, smartphone technology, smart home gear, interfaces like Alexa and Siri, car navigation systems or e-readers.

This raises the "chicken or the egg" paradox: "When we´re looking at social media participation, are we looking at the effects of software on culture, or indeed at culture?" (Seitz, 2020, p. 103).

### UNESCO Convention on the Preservation of the Intangible Cultural Heritage

In the field of international law and international cooperation, the **UNESCO Convention on the Preservation of the Intangible Cultural Heritage** deals with the issues of living everyday culture, knowledge and skills of mankind. **Human rights include many cultural rights** such as the right to participate in cultural life and enjoy one's culture.

**UNESCO's seven cultural conventions** are intended to safeguard and nurture some aspect of culture and creativity, from tangible and intangible heritage and the diversity of cultural expressions and creative industries to the fight against the illicit trafficking of cultural goods

(UNESCO: Culture for Sustainable Development).

Reflection, experimentation and application of digitalised systems has in fact resulted in a broad and profound practice of arts production directly in the field of applied media and digital art, but also in other fields such as painting, composition and dance. Code is to be found almost everywhere.

Digitalised generic art (e.g., produced by AI), has an increasing influence on the practice of artists and the arts field as such. It leads to new forms of production, but also stretches and tests the boundaries of digitalised territories and definitions. Often, it irritates and occupies these territories by challenging the self-descriptions and governance practice of "the digital" and its adoptees or promoters.

## Web Culture

> *"[...] Cyberspace consists of transactions, relationships, and thought itself, arrayed like a standing wave in the web of our communications. Ours is a world that is both everywhere and nowhere, but it is not where bodies live. We are creating a world that all may enter without privilege or prejudice accorded by race, economic power, military force, or station of birth. We are creating a world where anyone, anywhere may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity. [...]"*
>
> John Perry Barlow, A Declaration of the Independence of Cyberspace (Barlow, 1996)

Web culture, together with the establishment of the World Wide Web in the beginning of the 90s, has become the term used to describe the culture and deducted habits of the internet. Initially understood as creating its own topics, symbols, habits, currencies, norms and values and unstoppable spread across the globe, we now understand the development of web culture as an attempt at reframing the disruptive processes the Internet posed on existing norms, believed already to be negotiated/settled in modernity. As such, the term points out predominantly the experience of a culture of participation, of sharing and of shifting the individual from the position of the consumer to the potential creator or producer of its content. With the emerging embeddedness of connected and intuitive technology in our everyday life as "ubiquitous computing" with interoperability of platforms, the broad distribution of interconnected mobile devices and through a permanent (mobile) data flow, the differentiation between on- and offline has become blurry or even irrelevant for a growing number of people around the globe. Still, one should be aware that access is distributed unequally. The digital society is reproducing well- known categories of inequality.

From an educational perspective, we need to talk about the how: the way we are building relations and about how we are creating the structures for relating. If the web is the structure of the digital society, we need to explore different ways of constructing webs and networks.

## Characteristics of a Network

At the beginning of the twenty-first century, social theorist Manuel Castells identified in his "Materials for an exploratory theory of the network society", the character of the network society, as a possible new paradigma of societal and economic organising, replacing the classical industrial society. Postulating that "we live in a new economy" (Castells, 2001, p. 423), he defined the network as the predominant form of global organisation, based on electronic communication and information technologies, that enabled people to cope with the challenges of flexible decentralisation as well as with those of effective decision-making.

However, interconnectedness and networks isn't something that is bound to social media or planetary scale computation alone. Also, the internet is not a necessary precondition for networks.

Already in 1982, Robert Filiou, an artist affiliated with Fluxus, stressed with the installation, *The Eternal Network*, the interconnectedness of very diverse everyday actions across the world, in a time of emerging globalisation. Such social, cultural, economic, scientific, and habitual network cultures already existed before the technical reality of what we call network or web culture. They are now co-structured by the machine internet in a digitised world. Digitalisation brings to the idea of networks, mainly the challenge that cognisers of interactions and networks can be other than human: in a digitised network society a sender and recipient of any given information is not necessary human. Both can also be machines, robots or artificial intelligence. For example, the algorithms reading and making sense from the quantified data of thousands of cameras on public places do not require a human cognizer in order to extract a certain behavioural pattern. Moreover, only an algorithm is capable of extracting certain patterns from myriad information, giving sense to it. Also, the surveyor, such as a surveillance camera, cash machine or smartphone linked to mobile data, is most likely not human.

In the Information Age, internet-based digital networks

also offer new ways of organisation: While hierarchy was the operative principle in the age of industrialisation, organissation is now based on decentralissed nodal points (Rifkin, 2011). These nodal connections form an almost unbeatable form of governance organisation, which seems by far to advance hierarchical and other forms of organisations. The effectiveness of networks in a digitalised world leads to heavy challenges for other forms of organising, since no hierarchical decisions are needed, as analysed precisely by Shoshanna Zuboff in her idea of surveillance capitalism (Zuboff, 2015). The nodal points connect and include what is relevant to them in order to follow and reach goals.

## UNESCO Internet Universality Indicators

Reflecting on the Internet and the universality of human rights (UNESCO, 2019).
UNESCO's Internet Universality Indicators are a set of 303 indicators that aim to assess the state of internet development at the national level according to the so-called ROAM-X principles.
These principles enable us to check the provision of the following five dimensions as reflective tools to the enactment of human rights on the Internet:

- **Rights**
- **Openness**
- **Accessibility to all**
- **Multi-stakeholder participation**
- **Cross-cutting indicators: gender, children, sustainability, etc.**

ROAM-X indicators reflect the universality of the internet as a cultural good and universal infrastructure where human rights continue to apply and must be ensured, enacted and maintained. The indicators mirror the diverse regulation and legal instruments of the state and of all parties involved in the Internet. They also help to monitor whether the provision of the Internet follows benchmarks such as support of sustainable development, respect of human rights, inclusiveness and involvement of all stakeholders according to their needs.

The nodal points generating networks are held together by means of software: "All social, economic, and cultural systems of modern society - run on software. Software is the invisible glue that ties it all together. While various systems of modern society speak in different languages and have different goals, they all share the syntaxes of software: control statements `if/then´ and `while/do`, operators and data types including characters and floating point numbers, data structures such as lists, and interface conventions encompassing menus and dialogue boxes" (Manovich, 2011, p. 2).

Web and web culture are grounded in the technology of distributed networks. Meanwhile, for many people, their device has become an important interface to the

world. Devices of the Internet of Everything are connecting their bodies to the Internet and spinning a web of relationships with others. Networked individuals work and communicate via social networks, blogs and forums. Cloud-based infrastructures build the backbone of our social organisation, economies and work.

The Internet seems to offer "a virtually unlimited realm for creativity and innovation.... right from its start, art – above all, net art – discovered the Internet and used it as a canvas for artistic and activist actions", which besides creation of "the new" also "represents a cultural practice that modifies and re-contextualises existing material.... multimedia collages emerge that can potentially be viewed and further edited by the entire world. However, the idea that the internet is a colourful playing field on which all can do or not do as they please, and creative expression is the property of the producer, is utopian. Who owns our content on the Web? Who controls and distributes it, and who earns money from it?" (Jochem, 2020). Questions regarding property rights, the status of authorship and ownership connected with creative work have accompanied network society and digital culture from its very beginnings: downloads and sharing in the early days, the discussions on data access, and ownership in the age of big data.

"Web culture has brought forth new forms of solidarity. Knowledge platforms, such as Wikipedia, and movements such as Occupy and Anonymous, are representative of the immense potential (positive as well as negative) of the distributed networks. For quite some time, Web culture has not been limited to the internet alone; a sharp division of online and offline has long been obsolete. Thus, opposition, protests, entertainment events, and social movements are frequently initiated and organised online, but the digital spark flies and ignites in public space, and more and more is answered by shut down of social media or the whole web" (Jochem, 2020).

## Arts

"The question 'what is art?' is really the question 'what counts as art?' and we want an answer to it in order to know whether or not something should be accorded the status of art. In other words, a concern with what is art is not just a matter of classification, but a matter of cultural esteem. There are, then, two fundamental issues in aesthetics – the essential nature of art, and its social importance (or lack of it)" (Graham, 2005, p. 3.).

The differentiation of arts in spheres of high culture (classical music and performance, visual arts, theatre, architecture) and of popular culture (popular music, film, photography, gaming, entertainment) evokes questions about art's leadership, distinction and role in governance. Said in another way by Pierre Bourdieu, art as a matter of underlying social habitus.

As such, the consumption, appropriation and production of arts historically has dimensions of popularisation and emancipation – often claimed as participation or even as democratisation. From this perspective, art is an important driver of social change.

Aside from a classical interpretation of arts providing a projection for distinction, appropriation, reaction, rebellion or emancipation, these interpretations are hybrid and their forms are only recently emerging. Increasingly, the "remix" seems to be a dominant trend in high and popular cultures.

While the art production process (regardless of the discipline/field) itself undergoes these processes of reflective/responsive popularisation, popularisation and participation in the consumption and production have also become a core field of cultural education, often clearly aiming at democratically participating and co-governing the creation processes, with the aim to enable people to grow and gain competences. Examples are museum educational activities, theatre pedagogy, such as forum theatre of Augusto Boal, theatre of the oppressed, the Pablo Freire-pedagogy, or other arts-based initiatives, such as creative writing, music production, etc. Many art-based projects dedicated to the exploration of endless possibility through the power of arts are using cultural expression and art-based learning as tools for cultural and political empowerment and learning.

Within the "traditional" arts field, numerous "education" concepts enabling and widening the access towards culture also exist. For example, the various initiatives of museums, dance companies opera and orchestra.

Other questions enter the discussion, when we have a closer look at the non-production or creation dimensions of digitalisation, arts and entertainment. These include the changes to art as a profession due to changing production and the impact resulting from digitalisation of the market and distribution of arts products. As curator Alina Rezende states (see interview), the internet establishes a forum for the direct contact between artist and consumers. In the case of paintings or music production, the form of direct marketing is increasing.

Basically, one needs to be aware that the topic of this booklet is to write about and provide entries toward digitalisation in the field of art and culture, which are fields inherently tied together and closely intertwined,

but at the same time with inherent differences and divisions, namely regarding cultural industry and the closer field of the high arts.

Following Pierre Bourdieus' often stressed topic of habitus, digitalisation could create ruptures resulting in the emergance of new forms of distinction. For some artists and institutions digitalisation provides a new layer motivating their artwork and igniting critical reflection, as can be seen also in the field of digital arts production. Others would rather make extensive use of the new interaction possibilities, marketing and outreach opportunities. In the wide field of the cultural industry, digitalisation meanwhile applies to all levels, covering production, consumption and their reciprocal conditions. There are also wide spheres where the logics of economic consideration and those of cultural development overlap and intertwine.

## Arts, Culture and Civic Education

Civic education in the broader sense aims not only towards citizenship education and political learning frames, but encompasses the wide opportunities of arts-based, creativity-encouraging learning, as seen in the field of arts-based and cultural education. Civic education includes the methodical approach of creative processes and art production as a vehicle for supporting people in developing cultural expression, thus supporting personal growth and producing art. It also involves the idea of developing specific skills/mastery in various arts disciplines.

As digitalisation as an all-embracing transformation vitally applies to both of the intertwined fields of "higher arts" and "popular arts", it also largely effects the conditions of educational processes in both: the technical, methodical dimensions of producing and learning, as well as the dimension that explores its inherent foundations, reasoning and framing. "Democratic ability, community orientation, the ability to relate to otherness, i.e. a change of perspective and an understanding of otherness from otherness, a transformative habitus, i.e., openness to change versus rigid identity - these are top educational goals in democratic societies. [...] How can cultural education empower [young] people to act in a self- determined way even in the economised illusionary spaces of digital networks?" (Jörissen, 2020).

From a perspective of citizenship education and learning, the emphasis has and is currently largely put on the topic of learning/education within a digitalised culture/society, asking first and foremost for the role of education in designing a "culture" of digitality – making culture a synonym of society. Applied to the dimension of democracy, how can such a culture be designed on the pre-condition of education enabling acquisition of broad digital competences? (Roback, 2020)

From a perspective of cultural and arts-based education, the focus is set a bit differently, as it emphasises post-digitality rather than the transformation aspect. The focus on post-digitality is because we are not witnessing the transformation, yet we

live in a networked world where analogue and digital infrastructures, spheres and dimensions apply and are already interwoven in all aspects of society, economy and the environment – creating its own intertwined, but also distinct realities.

This publication puts emphasis on the latter. First, because it enables us to dig for common ground, accepting the digital as an inherent foundation of reality; second, because it doesn´t theorise the societal challenges to come, but focuses on existing matters; third, a culture and arts oriented view may stimulate creative views and ideas about how to answer and operationalise the not-easy-to-catch dimensions of digitalisation that go beyond the device level, accepting digitalisation from the perspective of an intertwined digital and analogue praxis.

**Post-digitality**: Perceiving digitalisation as an evolutionary cultural process rather than a technical one, emphasizing the equal and simultaneous relations between digital and non-digital cultural practice rather than the disruptive character.

## Conclusion

Thinking about web culture and the culture of networks, we need to reflect on the subject-object nature of our embeddedness in technology. “People act affirmatively at the level of network logic. They don´t want to critically undermine this at all. They have nothing against Instagram as a giant corporation or against algorithms that play up their contributions, but use them and suddenly experience a disproportionate visibility and political effectiveness” (Jörissen, 2020). Where are we creators and where are we subjects? Artists and artworks open and explore paths to autonomy, addressing and expressing these ambivalences. They are experimenting with alternative ways of creating relationship webs. Also, from an educational perspective we have to talk about “ownership“, “authorship” and copyright. How might individual possession be accumulated and appear in an increasingly immaterial reality?

# 2. The Internet Cultures

Sudipto Basu reflects critically in “The Ends of the Network as Frontiers of Extraction” on the conditions of the division of labor between machine and human, possibly thanks to networks. He questions the algorithmic regime and the omnipotent sovereignity of code and points to ideological dimensions of the network and the code ruling our future. In this sense, we could describe parts of the Internet as coined by a specific culture of big data.

Although digitalisation evolved from networks as a horizontal and peer-style form of organisation, he suggests reading it as a process towards a hierarchical governance model, one aiming to draw conclusions (and added value) out of data. A governance model which is based on an infrastructure for extraction: “Contrary to the dreams of a fully automated life run by light, immaterial cloud infrastructures, it is the frontier work of interface labor that ensures that the network functions from end to end [...] our digital network infrastructures are deeply subtended by the deep geological time of rare earth minerals, thorougly imbricated in always intensifying cycles of primitive extracitivism” (Basu, 2020, p. 11).

As such, the dominant picture of the digital transformation’s appearance contrasts with the profane and sometimes dirty foundations of the 5G society. A holistic picture of digital transformation needs to include all of these aspects and ask: What of both is the precondition for digital societies? What role do the resource miner, the programmer, the hardware engineer, the environment and other aspects play in this global network, in the endless cataclysm of oversea and land-based cable infrastructure, servers and mobile networks?

Therefore, doubts are appropriate if the projection is that the Internet will dematerialise society and contribute to the decrease of energy consumption. In fact, the Internet and digitalised processes have become a large and rapidly growing consumer of energy itself. According to estimates, the entire network consumes 10% of global electricity production (de Decker, 2015), with data traffic doubling roughly every two years (this includes the data centres/server infrastructure and also the end users’ infrastructures, the network infrastructure in between both, and the energy required during the hardware production).

Although the overarching infrastructure of the Internet is based on one common

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https://solar.lowtechmagazine.com

code (HTML), the Internet is a multiversity of dimensions, layers and manifestations. Different internets are adapted to infrastructural, social and economic conditions. "The digital revolution is not the same in Europe and the United States than what is it in Latin America and Africa, regions historically defined by the violent extraction of resource that power the global economy" (Pacheco Bejarano, 2020, p. 15). From this perspective, the web culture was always a diverse culture, connected by a common standard and basic principle.

The different Internets are connected and divided from each other at the same time. In a global, diverse and horizontal web, it is also able to create closed islands. For instance, military infrastructure, insular social platforms such as Instagram or Facebook or specific messenger services are often not able to connect to other messengers. Also there are geographically closed internet provisions – the Chinese term "Great Firewall" (GFW) is an appropriate description for that. In effect, these conditions and regimes are cutting off large parts of the world from free exchange. "The use of the worldwide internet such as the regulated networks in North Korean Kwangmyong and as - a more common example - China surrounded by the Great Firewall: without a VPN access, literally all search engines, social media and networks and information....are blocked. As an alternative model, behind the GFW, China has established its own search engine (Baidu instead of Google), social media (Weibo and Wechat instead of Facebook and Whatsapp), e-commerce platform (Alipay), Uber (Didi), and many more" (Lee, 2020, p. 27).

## The UN Covenant on Economic, Social and Cultural Rights

**Article 1**

**1.** All peoples have the right of self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development. [...]

**Article 15**

**1.** The States Parties to the present Covenant recognise the right of everyone:
(a) To take part in cultural life; [...]
(c) To benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.
**2.** The steps to be taken by the States Parties to the present Covenant to achieve the full realisation of this right shall include those necessary for the conservation, the development and the diffusion of science and culture.
**3.** The States Parties to the present Covenant undertake to respect the freedom indispensable for scientific research and creative activity.
**4.** The States Parties to the present Covenant recognise the benefits to be derived from the encouragement and development of international contacts and co-operation in the scientific and cultural fields.

(UN, 1966)

The experience of limitation and control has an influence on the perception of the internet among users and the way they use it, within fenced infrastructures and worldwide. As such, one has to consider that web cultures and cultural practices in the meantime have developed into parallel universes, supported by geo-blocking, limited access and regulation or by using insular platforms and tools such as Facebook, Twitter, Instagram, etc.

## China Channel: Look into WWW from a Chinese Perspective

The Firefox add-on "China-Channel" (www.chinachannel.fffff.at), developed by Aram Bartroll, Evan Roth and Tobias Leingruber, gives an idea about the effects of regulated access to the World Wide Web. It allows access to the Internet and the fenced network of China via one browser by using two screens. Most of the accessed websites and operations conducted will look similar, while specific searches direct to different results and give an idea of what information is available and what is missing within a fenced internet.

While the foundations of the Internet in a specific local or regional context differ, the network cultures created under these conditions vary. Cultural and participation discourses often emphasise the democratic nature of network culture as a result of global connectedness, such as solidarity, creativity and emancipation. However, alongside these we must also recognise the emergence of cyber-nationalism, control and surveillance – all also driven actively by the growth of the Internet. The diversity of intentions, uses and factual formulation of networks and digitalisation of political economies, cultures, power and governance, and social representation of groups or geographic regions leads us to ask whether the Internet is really only one entity. "The utopic vision of interconnectedness of a network should be called into question, as the commonly known available network is only the tip of an iceberg" (Lee, 2020, p. 27).
Perspectives, for example, in citizenship education, ignoring the diversity and ambiguous form of the Internet(s) are at risk of losing the chance for a holistic perspective. "The processes of participation and connection that characterise contemporary hopeful discourses on digital democracies easily becomes a process of violent securitisation and exclusion" (Pacheco Bejarano, 2020, p. 43).

Networked techno-territories are not a new phenomenon, but have been the "main mechanism through which colonial powers have exerted a tight grip on the flow of resources, people and information. The underwater cables making up the internet, follow the similar routes of global trade, historically having their origin in slave trade routes, such create transatlantic bonds that still define many of the global infrastructures of network movement and control" (Pacheco Bejarano, 2020, p. 42). In conclusion the digital revolution is "reshaping political and aesthetic representation, posing new and complex ethical questions that need to be addressed at the frontiers of these networked techno-territories....Can we use these systems profoundly complicit with unequal and unfair practices, in order to think of other possible presents?" (Pacheco Bejarano, 2020, p. 43).

To delve further into Pacheco´s argument, the apparent invisibility of the Web and the Internet may also be interpreted as being a carefully crafted strategy of alienation, which renders the possibility for emancipation from oppressive systems all the more unimaginable, while also covering up the colonial and extractivist practices that fuel the digital economy (Pacheco Bejarano, 2020, p. 44). The practices of the Internet and of digitalisation are infrastructures linked to other ecological, political and social infrastructures through which various relations of power circulate and shift.

Following Basu´s critical reflection about the genuine identities of the interfaces enabling the internet to network, it is of eminent importance to reflect on the nature, physical conditions and basics of digitalisation. His critique directs more towards the physical nature of digitalisation: the raw earth consumption, the carbon footprint, the waste of primitive extractivism, and societal damage as the accepted collateral investment of celebrating our clean, fast and ubiquitous digital world.

Similarly, the acquisition of "'territory' and resources from which economic value can be extracted by capital" was described by Couldry and Mejias as data colonialism (Couldry

& Mejias, 2019). Their research points out genuinely towards the person as the object of economic extraction, further developing the phenomenon identified by Shoshana Zuboff as the "Big Other", namely: the illegible mechanisms of extraction, commodification and control effectively exiling persons from their own behaviour" (Zuboff, 2015, p. 75).

In her article, "Big Other", Zuboff explores the conditions of new data capitalism. The "Big Other" focuses on the social and economic impact and the logic of big data applied in the current digital economy. It links to the invisible dimensions of the Internet (as also reflected on by Pacheco Bejarano) and the software (as identified by Manovich). It undresses the necessary conditions for a new form of accumulation in "The Age of Surveillance Capitalism" (Zuboff's recently published work about the topic). She sees platform capitalism in the emergence of this data-intensive, unidirectional extraction of data out of user-interactions, turning these into property and drawing value out of it. This weakens Western society's self-image as having important structural reciprocities between firms and the public, which in consequence converts the utopia of the network society into its opposite. In an economic and social environment based on big data, "the populations are no longer necessary as the customers or employees....which in the end eliminates the need for – and therefore the possibility to develop – trust" (Zuboff 2015, pp. 80-81).

Since trust is an essential foundation of the social contract and the rule of law, surveillance capitalism as the dominant pattern of the networked society would substitute the human factor in social trust building and automatise the social contract and rule of law. Why afford trust to strangers when you might better calculate their future behaviour on the basis of past data than by looking in their eyes? "Unlike the centralised power of mass society, there is no escape from Big Other. There is no place to be where the Other is not. In this world of no escape, the chilling effects of anticipatory conformity give way as the mental agency and self-possession of anticipation is gradually submerged into a new kind of automaticity" (Zuboff, 2015, p. 82).

## Artist, Researcher, Educator, (H)activist: Interview with Joana Moll

Conducted on 4. 11. 2020 by Georg Pirker

**Digital activist – digital artist – political digital educator: how would you describe your approach and work?**

I conceive of myself as an artist and as a researcher. But there are a lot of side effects that derive from my work: So I am an educator by some consequences of my work, which is education, working and interacting with people, giving workshops. This is as well another means of research for me, since you learn a lot from when you communicate with students and other people. Of course, there is also a side effect part which is

## Order of Magnitude


Picture of "Order of Magnitude" printed with kind permission from Ben Grosser.

In his work "Order of Magnitude" (2019), Ben Grosser covers the earliest days of Facebook in 2004 up through Zuckerberg's compelled appearances before the US Congress in 2018. These recordings reveal what has changed and what hasn't changed about the way he speaks and what he says. "For ORDER OF MAGNITUDE, I viewed every one of these recordings and used them to build a supercut drawn from three of Mark's most favoured words: "more," "grow," and his every utterance of a metric such as "two million" or "one billion". The result is a nearly fifty minute film that reveals primary topics of focus for the tech CEO, acting as a lens on what he cares about, how he thinks, and what he hopes to attain".
https://bengrosser.com/projects

activism as I am revealing very critical processes that have to be revealed, because they are very, very opaque - especially when it comes to the digitalisation of every single aspect of our everyday live. But it is not that I am an activist or want to be an activist, but you cannot separate it from this.

**What was your way into digitalisation, or how did digitalisation become a topic in your work (and how did you grow into it)? How are you researching and approaching it?**
I think I was not so much interested in digitalisation when I started in my artist work, although environment and technological issues played a role. I was always very interested in how things work and seeing them clean "without noise" – really: What are things? For example, a computer or a microprocessor are very complex entities. But in the end they are a bunch of materials, that allow electricity to flow. They modify

and domesticate electricity, right? So if you take into account, that most of our very transactions are carried out through electronic devices, it is for me the imperative question to answer: what is this and how does it work? How does it effect us? How does it basically take agency from us? How can we gain agency over these processes and how can we gain environmental impact on these processes?

**I see a clear "educational", even political, dimension in your work, which I would describe as "lifting the fog" from the abstract topics, supporting people to have a look beyond the curtain. What do you think makes an arts-based approach suitable to interact with people?**

It's a hard questions to answer. Sincerely, I do not know. For me it is my medium: how I can present what I know, how can I present the outcome of my work and my research. At least for me, the art - and this is a personal point of view - the artist practice allows to view the plasticity of things. And that you can´t just include actual facts like checked facts and transmit knowledge and science approaches, but you can also include sober factors that cannot be quantified or empirically checked. Such things as instinct. Even you can speculate a lot as an artist. And things you find personally relevant, such as felt connections and similar. I think that in my work, the impression that people gets is: "AH, OK this is connected, right?" So it is a little bit of breaking standard narratives and do it in a way that is very effective. But not to create a new narrative but offering another perspective.

So the intention is always also to interact with the other side, to communicate with a broad public. I am not a gallery artist (which is a side effect), but my niche is the interaction with the people and expressing, showing the outcomes of my research. With art it is still hard to understand that most people understand it as a piece, that has to be in a museum.

**Often digitalisation seems to force us into a passive role. It is experienced as something which leaves us an object. In order to overcome this passive role:**
**How should we (civic educators, human rights activists) orient ourselves to claim the territory. And to what "allies" should we make a connection to and learn from?**
**What can we learn from digital arts activist approaches?**

It is first of all to understand the medium, keep on digging and talking to people who are in it. There are such organisations as the tactical tech collective in Berlin, who do a lot of advocacy. Also it is a lot if individuals and researchers. It is about curiosity! If you are in these institutions and work in these centres, that have economic resources it is to invite these people and do seminars and workshops. You will never have it accessed only by plan, as it is complex and it should go beyond doing plans, but exploring it, by experiencing it.

Myself, i am doing a new project which is based on ad tech, although I am an expert in it, still it is super complex and I need again reading a lot and talking a lot to other

people in order to understand it.

**I feel relieved a bit not to capitulate from the seemed over-complexity, but approaching the things by doing them and investigating them as they are and to open them up logically for oneself.**
It's ok not to understand everything and build your own reality of what these things represent for yourself and your community.

**Would you see your work or the work of similar activists/ digital artists as representative for the arts discourse about digitalisation, or is it unfortunately still a wallflower in a field of a widely consumer oriented arts and culture industry?**
I do not see how you can talk about the world without digitalisation. You cannot separate it in terms of practices; simply most of our daily transactions are executed through interfaces that are connected with the internet. So it is just part of how we operate and how we reproduce in a social sphere. Basically we reproduce social models, and it is also a new social new. But it is not so new and it evolves also the current social contract as it involves also machines and very fast communications. It is not that you integrate it on purpose, but it is simply there and you live with it and you create it and you explore it and work with it in any fields, also in education. You use it and learn it: So it is not online-offline, but all merged together.

**What would you expect from our field of civic education/youth work? On what hacktivist/ digitised arts-based approaches should our field definitely participate deeper or explore more?**
I think a first step is really about disclosing how these infrastructures work. Who owns these infrastructures, and what are the geopolitical aspects, the territories? Which is, in the end, Google and a few more. Also, it is exploring and explaining how the systems operate and who owns them. Talk to activists and people about how to try to micro-balance this systemic inequality, that our interconnected world creates. It has to be life-wide and practically understandable. You can get very depressed, but you also need to develop this critical resistance among people and have a flight through these dark grey clouds in order to understand it.

Joana Moll is a Barcelona/Berlin based artist and researcher. Her work critically explores the way techno-capitalist narratives affect the alphabetisation of machines, humans and ecosystems. Her main research topics include internet materiality, surveillance, social profiling and interfaces. She has presented her work in renowned institutions, museums, universities and at festivals around the world, and is the co-founder of the Critical Interface Politics Research Group at HANGAR (Barcelona) and of The Institute for the Advancement of Popular Automatisms. She is currently a visiting lecturer at University of Potsdam and Escola Elisava in Barcelona.
More information: https://crit.hangar.org/

## Coal Fired Computers

British art collective YoHA´s work - led by Matsuko Yokokoji and Graham Harwood - involves the use of art as a mode of inquiry into technical objects. In the installation *Coal Fired Computers*, a laptop is powered by a one-hundred-year-old, 18-ton showman‘s steam engine powered by 2.5 tons of coal. Black lungs inflate during the charging process a database record of miners‘ lung disease which is shown on monitors. It reminds the viewer that what in Europe seems to belong to the past is, in other regions of the world, still an economic motor exploiting now non-European coal-miners.

Critical technical practice and the use of art allows for connections to be remade and renegotiated outside the rhetoric or logics that govern the space made possible by the interaction of technical individuals, humans and the wider environment.
http://yoha.co.uk/cfc

## Phone Story

Picture of “Phone Story“ printed with kind permisssion from Paolo Pedercini.

Paolo Pedercini´s “Molleindustria” develops games to critically reflect on socio-political conditions and question the base for digitised consumerism. *Phone Story* a game for smartphone devices attempts to provoke a critical reflection on its own technological platform. Under the shiny surface of electronic gadgets and behind its polished interface, hides the product of a troubling supply chain that stretches across the globe. Phone Story represents this process with four educational games that make the player symbolically complicit in coltan extraction in Congo, outsourced labor in China, e-waste in Pakistan and gadget consumerism in the West.
http://phonestory.org and https://www.molleindustria.org/

## Everything in Perfect Working Order

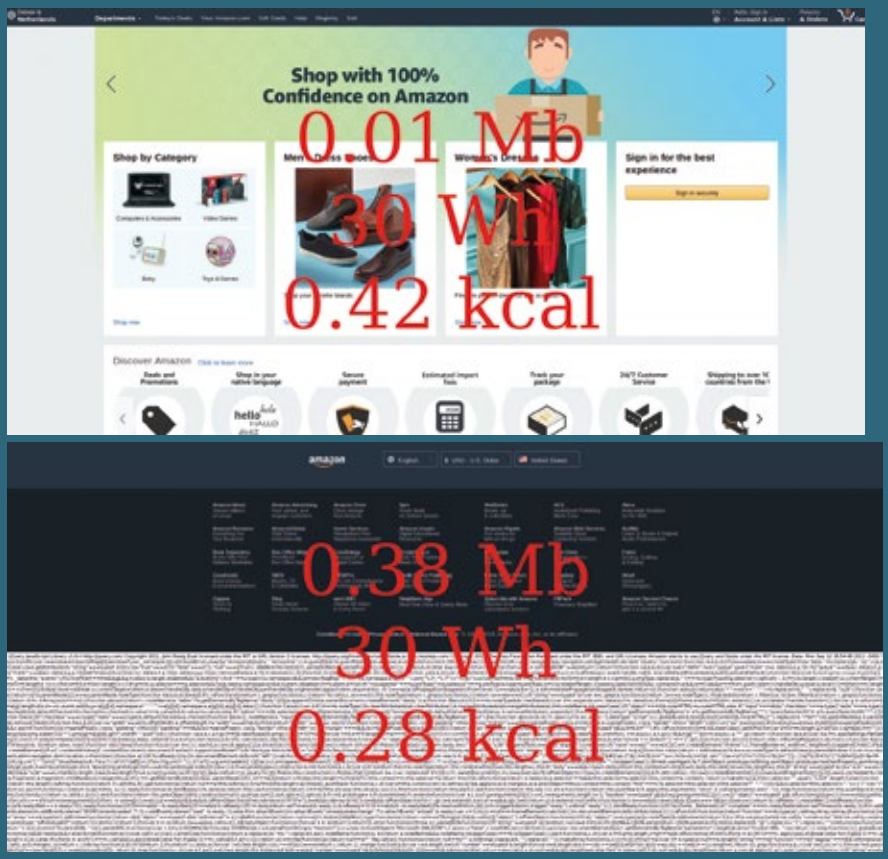
Nathan Gates, in his work *Everything in Perfect Working Order*, makes tangible the sphere of techno-territories with an electronic device (in the form of a USB dongle) that forces you to be facing North with your computer when browsing the internet to properly view websites on your screen.

Facing any other direction rotates the web page and its contents in the browser relative to this northerly direction, emphasizing the North as a reference point in a worldwide network. Facing South displays web pages completely back to front.

The device serves as a reminder of the very physical infrastructure of the Internet that make this "digital" experience possible and its tight coupling to the physical world. Just like the physical world, even a virtual space has concentrations of power underpinned by material infrastructure.

http://www.nathangates.co.za/#everything-is-in-perfect-working-order

## The Hidden Life of an Amazon User




Picture of "Hidden Life of an Amazon User" printed with kind permisssion from Joana Moll.

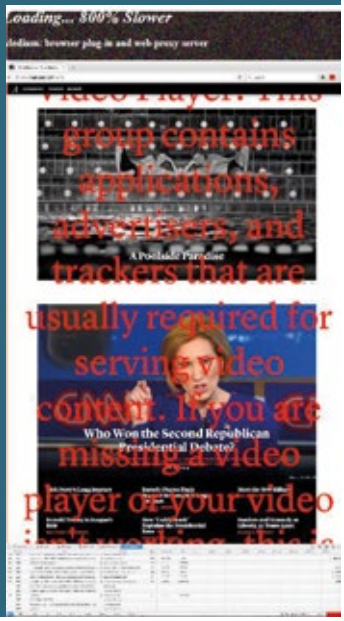
In her 2019 work, *The hidden life of an Amazon User*, Joana Moll visualises the energy consumption of her research and purchase of Jeff Bezos' book, "The Life, Lessons & Rules for Success: The Journey, The Teachable Moments & 10 Rules for Success Cultivated

from the Life & Wisdom". Moll's work narrates the journey she undertook inside the intricate labyrinth of interfaces and code that make the purchase of Jeff Bezos's book possible. Thus, the project allows the user to navigate through the twelve different interfaces that participate in such processes, and explore the vast amount of code that was hidden "behind" them, while witnessing the mounting energy costs that are inadvertently paid for by every Amazon customer. "*The Hidden Life of an Amazon User*" aims to shed light on Amazon's often unacknowledged but aggressive exploitation of their users, which is embedded at the core of the internet company's business strategies. Such strategies rely on apparently neutral, personalised user experiences afforded by attractive interfaces. These interfaces obfuscate sophisticated business models embedded in endless pages of indecipherable code, all of which are activated by user labour. In turn, these strategies have a significant energy cost, part of which is involuntarily assumed by the user. To put it bluntly, the user is not just exploited by means of their free labour, but is also forced to assume the energy costs of such exploitation.
http://www.janavirgin.com/index.html

## Loading...800% Slower

David Gauthier experiments with the hidden aspects/ identities of the Internet. Our digital habits and interactions require fast internet, immediate response and direct availability of goods and services. Aside from the prerequisite material technologies for fast internet (good data connection, high WiFi quality, superb network coverage), the precondition for fast application of services hides in cookies and other small programs that enable direct interaction.

With his piece, "*Loading... 800% Slower*", Gauthier investigates the asymmetry between machine and human deliberation time by making the phase of code interaction between end user device and website audiovisually haptic. Human transactions are now bolstered by machine-to-machine executions, which occur at timescales that completely bypass human consciousness. The work "*Loading... 800% Slower*" amplifies this temporal asymmetry between machine deliberation time and human deliberation time. "By slowing down to an excessive degree the bitrate of an internet connection while a browser plug-in renders




Picture of "Loading ...800% Slower" printed with kind permisssion from Daniel Gauthier.

audible the various invisible and dubious scripts and DOM elements composing a given web page, this project depicts the uncanny temporality of human consciousness in rendering almost still (and loud) the temporal signals of the machine." (Gauthier, 2018, p. 127).
https://gauthiier.info/loading-800p-slower/

## Conclusions for Education

Digitalisation has a deep physical nature of extraction, which uses ecological resources according to long-established patterns of labor exploitation with familiar patterns in our history of colonialism.

Art-based approaches are deconstructing artefacts and assumptions about digitalisation, prompting a wake-up call to look behind the clean, smooth surfaces and its icons. They therefore expose the "invisible" by making apparent the diversity of practices and layers that exist under the dominant rhetoric and images of digital transformation. It is a reminder that the very foundation of Education for Democratic Citizenship and Human Rights Education (EDC/HRE) is to have a thorough look at the controversial character and practices determining our societies. Thus arts-based approaches not only scratch the surface, but actively ask for the structure and logic of the surface and the interface itself.

It also shows us that the recognition and exploration of diversity contributes to a more holistic understanding of networks, webs of relations and their inherent "forms", cultures and structures.

# 3. Between URL and IRL

## Work in the Networked Society

Digitalisation and platforms have a wide impact on work and employment. In reflecting from a practical perspective on "digital workers", we find that they appear not only in well paid tech business as "digital nomads", but also as gig economy workers, using platforms such as Amazon's Mechanical Turk to offer their capacities as a service. This Amazon service (https://www.mturk.com) was set up in 2005 and "is a crowdsourcing marketplace that makes it easier for individuals and businesses to outsource their processes and jobs to a distributed workforce who can perform these tasks virtually" (Amazon Mechanical Turk, n.d.). Some services have turned back into what are called HITs (human intelligence tasks) by virtue of people offering their (physical) work through a bidding system, such as services that are highly complex (e.g., programming) or overly individualised because they go beyond automation. It may also apply to situations where the work is simply too stupid to let a computer do the job or where developing an adequate software/program is likely to be too cost intensive. Digitalised matching services have contributed to the creation of a new generation of "cloud workers". They form the backbone of the clean digital interfaces the user usually meets and are another physical manifestation of digital transactions. The person working behind the interface is usually not visible to the user and often believed to be digital-only. "Most of the workers are from the USA (75%), with India (16%) being second, followed by Canada (1.1%), Great Britain (0.7%), Philippines (0.35%), and Germany (0.27%)" (Difallah, Filatova & Ipeirotis, 2018, fig. 1). Behind the URL *the Uniform Resource Locator*, there is often the human intelligence task that connects us *in real life* (IRL) to the people in the machine room of the Internet.

## In Real Life

*In Real Life is a movie/installation project of Liz Magic Laser, a multimedia video and performance based artist from New York City. It provides a fascinating multiperspective story of the same people using the same work platforms in very different social contexts.*

Picture of "In Real Life", Liz Magic Laser, 2019, 5-channel HD video with sound (112 minutes, looped); custom seating (dimensions variable). Commissioned by FACT, Liverpool, UK. Courtesy of the artist and Various Small Fires (Los Angeles). © Liz Magic Laser 2019

Set up as an immersive reality show installation, In *Real Life* follows the lives of five gig-workers from around the world who rely on work they find through online platforms such as PeoplePerHour, Upwork and Fiverr. From a telecom voice artist in Hong Kong to a whiteboard animator in Nigeria, the cast members have been hired to produce the show. Each "episode" follows one cast member's life. Laser directs the cast members through a series of challenges with help from a tech-savvy life coach and a psychic advisor, who also work in the online gig economy.

Predominantly filmed via webcams and mobile phones, these reality stars are directed to document their struggles in order to establish work-life balance. Each has been tasked with a 30-Day Biohack Challenge that employs wellness tracking apps and biohacking devices intended to optimise their productivity and health. These "on demand" workers face daunting and sometimes farcical challenges in their daily lives. In Real Life dramatises five workers' endeavors to manage their own minds and bodies as the very nature of work changes around them.

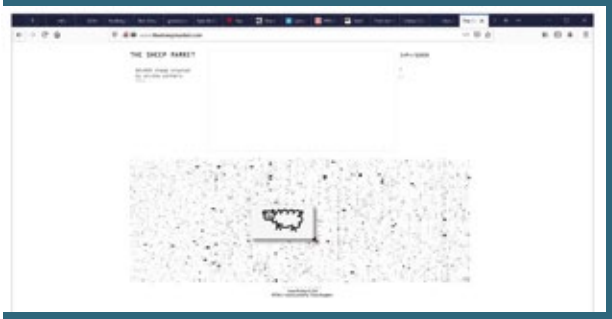
It questions the fantasy of becoming your own boss that's used to draw gig workers to online platforms. This ideology of empowerment through individual choice can be traced back to utopian ideals of the early Internet. In the name of freedom of choice, freelance workers are pressured to assume all risk with little to no security or benefits. Performance metrics demand constant availability, making the laptop lifestyle far more demanding than it seems. On the flip side, freelance gig platforms have enabled young people in developing countries to pursue higher incomes in creative fields.

Visitors enter the installation space and can see five faces on screens encircling them. Each screen is dedicated to one character, and the "episodes" play consecutively around the circle. While each episode plays, the other contestants remain on screen endlessly working at their computers, as seen through their webcam. Their constant presence conjures a virtual "WeWork" space surrounding the viewer. Ambient sounds of typing, fidgeting and phone calls are heard as dogs and children infiltrate the scene of each worker's home office. This equilibrium is interrupted by punctuating moments when all five channels suddenly sync and a voiceover addresses the viewer. At these intervals, the circular design takes on the feeling of a gameshow, with the viewer as a proxy contestant at centre stage.

https://lizmagiclaser.berta.me

## The Sheep Market

In his 2006 work, *The Sheep Market*, Aaron Koblin paid Mechanical Turk users two cents each to draw a left-facing sheep and collected them on a website. The result is mirrored in an online collection of 10,000 sheep. Interested customers can select and buy single sheep with a certificate of authenticity as an adhesive lickable stamp for $20 each. The sheep-market has been one of the first projects involving MTurk workers. Some appreciate that the workers became visible to the broader society thanks to this project, while criticism points out that the project makes unreflective use of the underlying structure of the MTurk platform and is, in the end, just exploiting the platform for an art project, similarly to the way they are used by other contractors.
www.aaronkoblin.com/project/the-sheep-market/



Picture of "The Sheep Market" printed with kind permisssion from Aaron Koblin.

## Middle Fingers Response

Guido Segni´s installation *The Middle Fingers Response* (2013) provides no sheep, but instead a collection of 300+ commissioned, spontaneous self-portraits of cloud workers posing with this globally understood gesture of disagreement. As Segni points out: "All the workers in the selection have been paid about $0.50 in order to take a webcam picture of themselves showing their face, their context and, ultimately, their middle finger response. It's just a cynical but sincere attempt to establish a dialogue between the artist, the public and the crowd dispersed through the new frontiers of leisure, labour and exploitation in the age of the big cloud."
http://crowdworkersoftheworldunite.com

Picture of "The Middle Fingers Response" printed with kind permisssion from Guido Segni.

## Transformative Spaces for Digital Arts: Museums, Congresses, Festivals

Several institutions worldwide are fostering and providing means for discourse and experimentation of digitalisation and the arts. Often applying the tech concepts of labs, makerspaces and festivals, the conceptual approach of hacktivism, programming and tech culture is remixing cultural practice of tech labs. An organic kitchen where research, data analysts, hackers, artists and interested publics discuss, create and connect. Today´s discourse in the arts about digitalisation has a lasting history and has roots in media-arts and critical media reflection but also in social research and digital activism. Therefore, digitalisation in the arts is actively opening up reasoning processes about aspects of digitalisation and in pioneer work developing and using digital tools critically. Art developed under this presumption is not usable as soft commercial "easy digesting", nor fuelling a heated arts market or the wider cultural industry. Many examples of artists and art work represented in this book give evidence that there is deeply embedded reflection about life-size aspects of the digital transformation in the arts production field, going far beyond the technological changes to deeply tackle the societal, ecological, economic and political questions. In this sense, they would offer a couple of opportunities for a combination of digital learning and civic education, if educators and institutions from both spheres were to cooperate. Inline with this vision, the Council of Europe has published the recommendation, "Internet as emancipatory force" (CoE, CM/Rec(2018)10). It recommends to its member states to

"Encourage cultural institutions to co-operate and establish synergies with educational institutions to create digital learning opportunities for citizens by creating incentives that recognise institutions for their co-operation

Encourage cultural and educational institutions to include the internet and digital tools as an integral part of their arts and cultural programmes with a view to fostering citizens' critical thinking and tolerance of different viewpoints

Encourage cultural institutions to be "pressure-free" spaces for creative learning, in particular to facilitate the experimental use of technology and to support e-culture and new media arts;

Support and promote new forms of digital culture and heritage in public cultural programmes."

Aside from transforming traditional institutions such as museums, digitalisation has also inspired new forms dedicated to immersive realities. In Europe, the NXT Museum in Amsterdam, opened in 2020, (https://nxtmuseum.com/) just one of several yet-to-open spaces where digitised territories enter physical realms. Museums are similar

to libraries as institutions and spaces where society ascribes high trust. As a result, they possibly provide the space for a sound exchange about and an experiencing of the digitised world as it is. From a historical perspective, institutions such as the NXT Museum reintroduce a bit the tradition of the chambers of curiosities where one can explore unknown territories in combination with AI (possibly also the spaces of Another Intelligence).

Beyond the spectacle, the following institutions, in particular, exemplarily show how this connection between cultural and socio-political topics under a digital arts-based research and lifelong learning perspective might be done.

**transmediale** creates a space for critical reflection on cultural transformation from a post-digital perspective. For over thirty years, the annual festival for art and digital culture has been bringing together international artists, researchers, activists and thinkers with the goal of developing new outlooks on our technological era through the entanglement of different genres and curatorial approaches. In the course of its history, transmediale has grown from its beginnings as VideoFilmFest to one of the most important events for art and digital culture worldwide. Beyond the yearly event, transmediale is a transversal, dynamic platform with a vibrant community and a strong network that facilitates regular publications and year-round activities including commissions and artist residencies. Among other things transmediale has discussed the role of emotions and cultural emergence in digital culture, the political, economic, and cultural divides of our time and the elusiveness of perpetually transitioning media cultures at the festival.
**https://transmediale.de**

**V2__, Lab for unstable Media**, is an interdisciplinary center for art and media technology in Rotterdam (the Netherlands). V2_ presents, produces, archives and publishes research at the interface of art, technology and society. Founded in 1981, V2_ offers a platform for artists, designers, scientists, researchers, theorists, and developers of software and hardware from various disciplines to discuss their work and share their findings. In V2_'s view, art and design play an essential role in the social embedding of technological developments. V2_ creates a context in which issues regarding the social impact of technology are explored through critical dialogue, artistic reflection and practice-oriented research.
**https://v2.nl**

**ars electronica.** Since 1996, the ARS ELECTRONICA FUTURELAB has constituted the research- and development-motor of Ars Electronica. This section is conceptualise as an artistic-scientific think tank and as a studio lab. Its projects are prototypical future sketches which extend an invitation to discuss and reflect on future concepts and their meaning for society.
**https://ars.electronica.art/news/en/**

**INC - Institute of Network Cultures**, Amsterdam. Interdisciplinary in character, the INC brings together researchers, artists, activists, programmers, designers, students and teachers. The field of network cultures revolves around the interaction between new forms of media and the users of such new forms. With a strong focus on the transdisciplinary nature of new media and its DIY and open source components, the INC gives equal attention to the artistic, political and technical aspects of the internet and other emergent media. As such, the INC's area of research extends to design, activism, art, philosophy, political theory, and urban studies and is not confined to the internet alone. Indeed, the INC maintains that the internet can only be understood at the conjuncture of these various fields and lines of inquiry. Network cultures is seen as a strategic instrument to diagnose political and aesthetic developments in user-driven communication.
**https://networkcultures.org**

**H3K – Haus der Elektronischen Künste,** Basel, is dedicated to digital culture and the new art forms of the information age. It is a place for creative and critical discourse on the aesthetic, socio-political and economic impact of media technologies. HeK shows contemporary art that explores and configures new technologies; it promotes an aesthetic practice that uses information technology as a medium, makes it vividly accessible and actively intervenes in its processes. HeK thereby addresses the pressing issues of twenty-first-century culture and makes an active contribution to their future evolution.
**https://www.hek.ch/en**

**ZKM Zentrum für Kunst und Medien** since its founding in 1998 has critically examined the subject of Web culture. With the »net_condition« exhibition in 1999, artistic focus turned to the conditions of the relationship between society and technology. Ten years later, the user was at the center of attention. The emancipatory move from viewer to designer was the point of departure for the »YOU_ser« exhibition. With it, ZKM offered the first presentation of the contours of then-new user art. The ZKM and Cyberforum e.V. have co-organised the international »AppArtAward«, a competition honoring artistic Apps, since 2011. Focus is on independent developers and their creative potential. Art occurs on screen under the title »ArtOnYourScreen (AOYS)«. AOYS is a virtual window on the Web presenting cross-genre artworks. These works, which display their meaning only on the internet, challenge the user to co-design the Web culture of tomorrow.
**https://zkm.de**

**Greencube.gallery** is a nomadic online/offline artist-run space run founded by Guido Segni and Matìas Ezequiel Reyes. It aims to flow in and out of the digital screen in order to stress the limits and the relationship between virtual and real. In the end,

art is not a collection of objects, it is a collection of events and states. Like states of matter, URL and IRL aren‘t opposite but just two distinct forms in which matter can exist under different conditions.
**https://greencube.gallery/**

## “The Physical and Geographical Barriers Got Much Shorter”

Interview with Aline Lara Rezende, curator, designer and journalist, by Frank Elbers

**How has digital transformation changed the production of art, particularly design and architecture?**
The first thing that comes to mind is everything! From the research to the making process, to how and where your work can be produced and the relationship with clients. Today, it is quite common that an artist deals directly with a possible collector to sell his art, through Instagram and their own website, avoiding the mediation of galleries, for example. This is particular evident within young and emergent artists. The galleries and auction houses, still deal with major artists and markets, but more and more you see their activities also going online. In terms of design, the digital transformation made it much more global than before. Imagine products like the iPhone, for example. It is engraved in each phone, “Designed in California, Assembled in China”. What this means is that, although developed in Silicon Valley, every Apple computer and other gadgets are produced in China. This is only possible because of the digital era we are in. In a smaller scale, any designer or design studio can take up work from different parts of the globe, without too much travelling. With the digital transformation, the physical and geographical barriers, as well as time, got much shorter. Time because the instant communication that allows exchange of ideas and large files seamlessly, facilitating all kinds of work, making distribution transactions.

**Have digital museums resulted in a broader appeal to arts and culture, to more visitors?**
I am not sure. What I can say is that every museum, across disciplines, has gone online one way or the other. In the beginning of digitalisation, the greatest challenge was to bring all the museum’s archives and collections online and accessible to a broader public.

**What has been the impact of digital transformation on copyrights of arts and other cultural productions? Can you say something about that?**
It is a conundrum that institutions must safeguard the works’ originality and rights,and

that praises the physical presence, to see an original object in person is another experience. With time, and with the share-economy and commons aspect of the Internet, this became less relevant. Meaning, it is better to bring your collection online, and interact with the broad public and generate conversations around it, than protect the image rights of these works.

**And finally, how, in your opinion, has art education changed due to digital transformation?**

Nowadays, there is much more focus on educational programs online. From big museums like MoMA, offering even MOOC courses in platforms like Coursera, sometimes led by curators getting deeper into their exhibition topics and research. Other times, museum art educators direct their content to teachers to use in their classroom. This material is largely used and has a phenomenal number of followers, at the scale of 100,000 [participants]. The best part is that such high level content is offered for free, across the globe. But I'm not sure about how much more visitors it brought to the museum. I guess these are more outreach programmes. Getting the museum out of its physical constraints to the world.

Aline Lara Rezende is a contemporary art and design curator, designer and journalist. Brazilian-born and internationally bred, she is currently based in Vienna. She has worked for big museums across the globe including MoMA-New York, the National Art Center, Tokyo, Museum of Contemporary Art Tokyo, Yerba Buena Center for the Arts-San Francisco, Sao Paulo Biennale, and Vitra Design Museum. She holds an MA and PhD in Art and Design from the University of Tsukuba, Japan. Her writings have appeared in exhibition catalogues, museum brochures, magazines and newspapers on topics ranging from Brazilian contemporary art to Japanese fashion and architecture, frican contemporary design and robotics. She currently reports on contemporary design and culture for international media outlets. She is the co-founder of SALOON Wien, with Julia Hartmann.

## Glitches: From Euphoria to Datafication and Control

The development of the World Wide Web and the exponential growth of processing power has evoked reflections mainly on the participative rhizomatic, ubiquitous, simultaneous and egalitarian aspects of Web culture, as shown in the previous chapters. During the 90s, the Internet dream promoted the golden age for all – an egalitarian tool serving the promise of growth of personal individual freedom and offering advanced opportunities for everyone. Some aspects radiating towards certain parts of the social-cultural sphere are the creation of the first online communities such as "the WELL" (the first hosted online community, https://www.well.com) or the creation of ICANN as world governing instance for the IP addresses of the World Wide Web.

The slow infiltration of the digital into everyday digital cultural habits can be observed in the gaming sphere with the introduction of virtual avatars (e.g., second life, Sims). Also worth noting is the beginning of several market transformations in traditional media: from phone to Skype 8and others), from buying to filesharing after platforms such as Napster and YouTube entered the competition for music and TV, and from DVDs and CDs to iTunes. We also have seen search engines, the first tools for sharing (social bookmarking) and the birth of several releases of social networks, leading ultimately to Facebook or regional equivalents – all with unprecented and increasing influence on life habits and cultural practices.

The World Wide Web, as a giant information market place, certainly is a global phenomenon. Surprisingly, we find a reproduction of traditional analogue roles, businesses, jobs and business models starting from development to production to retail of a vast variety of products, which follow their analogue historical tracks as well.

Although the invention of the Internet appears from a historic distance as a revolutionary event, it hasn't necessarily created new forms of interaction for the users, rather it substitutes and adds additional layers to known territories of economic, social and political interaction. In contrast to the "disruptive" language of many startups and of tech-wording, one might speak instead of an evolutionary character instigating incremental change. Markets as well as social organising have developed a vivid culture of copying and remixing, taking up impulses and re-contextualising existing proven forms in a new way.

The interconnectedness of people, things and events at any time and at any place poses the experience of ubiquity and simultaneity and seems to provide a variety of free choice, which the analogue markets seem to have lost; a discourse similar to those arising around dying inner cities, which occurred as shopping malls were established and global brands started playing a mayor role on the market.

One new development during the last decades is the increasing amount of (personal) data produced through platforms and manifold new devices, from smartphones to the Internet of Things. They constitute an invisible sphere related to personal identity. Some speak of "shadow data", which means that such data is stored in proprietary databases and often not visible to the affected persons, but somehow relevant for their future

social relations and actions. Others emphasise the evolvement of a digital appearance of persons, a digital self, which accompanies their analogue public appearances, for instance on social media. Maintaining these online selves is not without stress.

## Excellences & Perfections

In 2014, Amalia Ulman conducted a five month, scripted social media performance, *Excellences & Perfections*, via her Instagram and Facebook profiles. As part of this project, Ulman underwent an extreme, semi-fictionalised makeover, evoking a consumerist fantasy lifestyle, and matching her profiles to exactly what social media seems to demand. https://webenact.rhizome.org/excellences-and-perfections/

Broadly available smartphones have entered the communication sphere and are connecting private and public life, especially in urban spaces. A massive growth of opportunities for data storage in clouds and permanent ubiquitous processing of data are the parameters of this fast and rapid technological growth and social change, but also cause what tech sociologists describe as a loss of control. According to Zuboff they have shifted the character of sociality: The “subjectives of self-determination found expression in a new networked individual sphere characterised….as non-market forms of ´social production” (Zuboff, 2015, p. 79). That social production is the tool to creating economic value and leads to new forms of accumulation is perhaps the decisive difference. The new economic model of data-capitalism is a key driver of these developments, technology-related business models aiming to gain from this digitised social sphere and individual datafication through the appropriation of social and personal data. In particular, they gain by refining this diverse data to better monetisable information about (future) social behaviour. Although it is obvious, that this way of datafication has a huge impact on social relationships and the character of web cultures, a specific characteristic of data capitalism is usually to refuse any social or ethical responsibility for the usage of algorithms and databases, often hiding behind an attitude of “radical indifference” (Zuboff) towards the exterior/environment. Therefore, it’s the role of culture and civil society to yeld a discourse on the social impact of technology-driven change to the public debates, and in particular to explore how datafication is affecting the ethical foundations of our social web.

## The Internet as an Emancipatory Force

The Council of Europe recommendation on "strengthening the internet as an emancipatory force", recommends we:

draw on culture and cultural players as vital elements for strengthening the internet and digital media as democratic and emancipatory forces, underpinned by respect for human rights, diversity, pluralism, transparency, reliability, independence, tolerance, inclusion, gender equality and solidarity; enlarge the scope of critical digital media and information literacy programmes in the education and lifelong learning of children, young people and adults to boost their creative talent and make use of it in order to be able to rise to the challenges to democracy in the digital era;

create guidelines on culture's contribution to strengthening the internet as an emancipatory force;

draw on culture, cultural players and public sector cultural programmes as vital elements for strengthening the Internet and digital media as democratic and emancipatory forces.

Additionally, it states that "member States are encouraged to recognise that the internet and digital media have become part of the shared public space for new forms of culture, increasing the accessibility and exchange of cultural offerings and activities, including those of public service cultural actors and institutions, and allowing citizens to benefit from them in greater numbers.

Member States should specifically:

highlight the importance of public service and public interest in the internet in cultural policymaking;

strengthen the presence of creators and providers of cultural content on the internet to help them engage with citizens and facilitate access to cultural content;

support the providers of cultural infrastructures in their efforts to promote digital co-creation and co-production, mindful of the need to protect intellectual property;

promote and facilitate the use of open-source tools, commons and related open working methodologies for cultural and research activities by citizens and by public sector and public service actors and institutions;

highlight the crucial role of culture and education in debates on the regulation of private digital platforms;

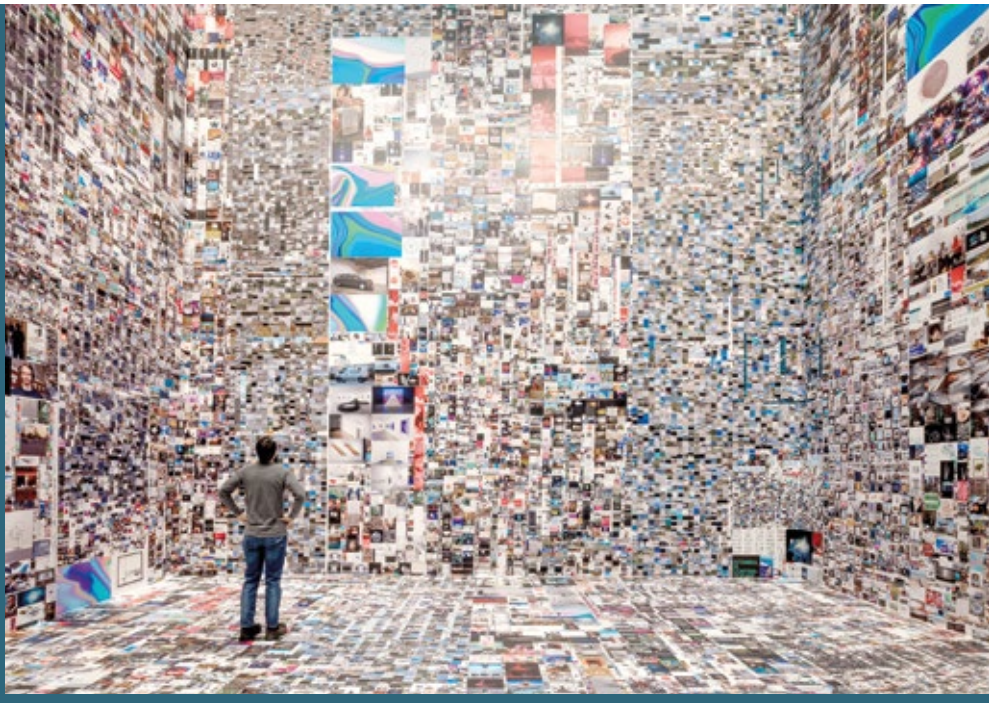
encourage independent actors to provide citizens with reliable platforms for checking the source, validity and authorship of digital content of uncertain origin;

ensure copyright protection in the digital environment in which authors can develop their creativity in a safe and equitable manner;

educate citizens to be culturally and democratically savvy and creative

use digital culture and arts as a means of fostering digitally and democratically competent and creative citizens."

Source: CoE, CM/Rec(2018)10



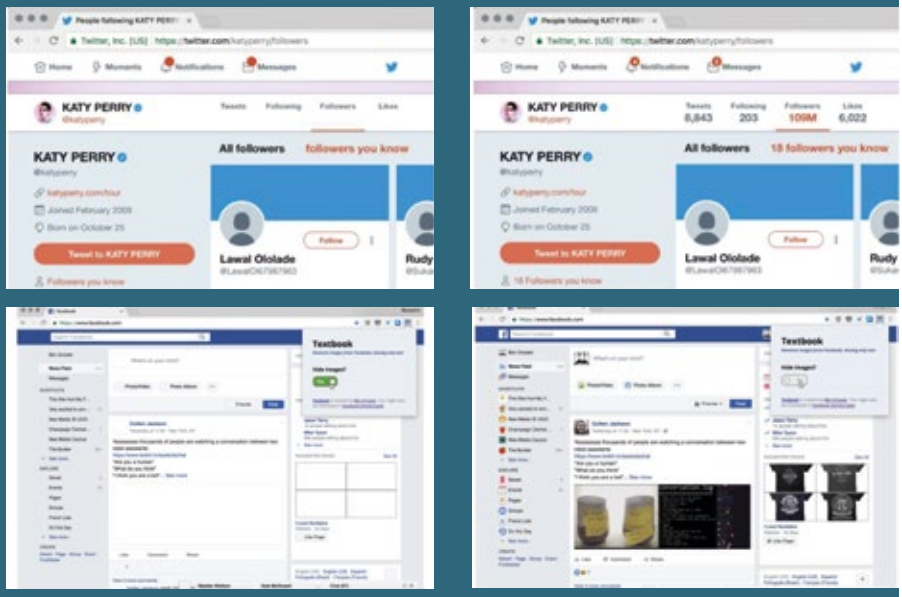
(Photo by Doug Eng, courtesy of the MOCA Jacksonville)

## Since You Were Born

Evan Roth´s installation, *Since You Were Born*, is a print-out of all data stored in the cache of his smart phone. It presents an introspective view of his own internet browsing data to create a dynamic site-specific installation of saturated images that are both personal and universal. Filling the Atrium Gallery entirely, Roth's internet cache captures four months of search history. Faces of "friends" from social media exist alongside corporate logos, fragments of Google Maps, family photographs, and banner advertisements – lost narratives left behind in Roth's interactions online. Engulfing the viewer, the uncensored stream of images present memories that were never intended to be saved, archiving the seemingly incidental into something more permanent. In this way, Since You Were Born presents an alternate form of art-making, memory-making, and storytelling in our ever-more technologically obsessed world.
http://www.evan-roth.com/work/since-you-were-born-2019/

The saying of the so called loss of control however needs to also be carefully examined; During the first decade of the new millennium, to what extent did larger groups in societies around the globe really pilot the Internet and own the process of digitalisation? Don´t we speak in a global context still about a rather scattered tech, brain and market community, with some hotspots pioneering the development e.g., in Silicon Valley or in the cyber-techno-political-security spheres in certain countries.

## "Twitter Demetricator" and "Textbook"




*Twitter Demetricator* and *Textbook* are browser extensions, which allow you to cut-off functions elementary to the platforms.

Textbook is a web browser extension that removes images from the Facebook interface. Whether it's a linked article preview photo, a friend's profile selfie, or a "love" reaction icon, every image is hidden from view. Left behind are the blank boxes and white space where they used to be. Are certain kinds of images leading us to click on content we might have otherwise scrolled past? Does the layout and/or content of images on Facebook influence the way we read the site? Finally, what role might images play in the proliferation of fake news, the virality of propaganda, or the effectiveness of clickbait? Textbook enables Facebook users to test questions like these for themselves, to see the site without the images and thus experience its content in a new way.

The Twitter interface is filled with numbers. These numbers, or metrics, measure and present our social value and activity online, enumerating followers, likes, retweets, and more. But what are the effects of these numbers on who we follow, what we post, or how we feel when we use the site? Inviting us to consider these questions through our own experience, Twitter Demetricator is a web browser extension that hides the metrics. Follower, like and notification counts disappear. "29.2K Tweets" under a trending hashtag becomes, simply, "Tweets". Through changes like these, Demetricator lets us try out Twitter without the numbers, to see what happens when we can no longer judge ourselves and others in metric terms. With this work, I aim to disrupt our obsession with social media metrics, to reveal how they guide our behaviour, and to ask who most benefits from a system that quantifies our public interactions online.
https://www.bengrosser.com

Picture of "Twitter Demetricator and Textbook " printed with kind permisssion from Ben Grosser.

## Market and State-driven Surveillance

The development of data extraction and analysis capacities of the data economy is boosted by the expectation of extracting information for social and individual foresight. To stress this, Shoshana Zuboff writes, “the quantity of user data is much more important than quality. As long as an action online can be converted into data, it can be utilised in predictive behavioural models”.

The aim of the private big global players is in this sense to monetise their behavioural modes. This works for instance, by selling data to other parties which have an interest in behavioural insight, by influencing future behaviour of individuals (for example, voting or buying a product) or even through control (such as insurance companies aiming to reduce their risks, or states aiming to control activities of citizens).
Therefore, aspects of surveillance, control, transparency and privacy have meanwhile come to dominate the discourse influencing web culture, but also as part of our everyday social practices. While these issues were for a long time mainly discussed in regards to the state power and the danger of political misuse of state control, today with every new data scandal, the private actors slide into the focus of the debate with their surveillance capacity, privacy breaches or with violations of other rights.

In consequence, both developments of state and of private capacities re-introduced the aspect of data control, security and privacy to the agenda. The exponential growth of computer-driven data evaluation and AI-supported data analysis allows governing developments and processes at a large scale. The dominance of the tech companies also results in a high level of connectivity with state structures, making the topic more than delicate.

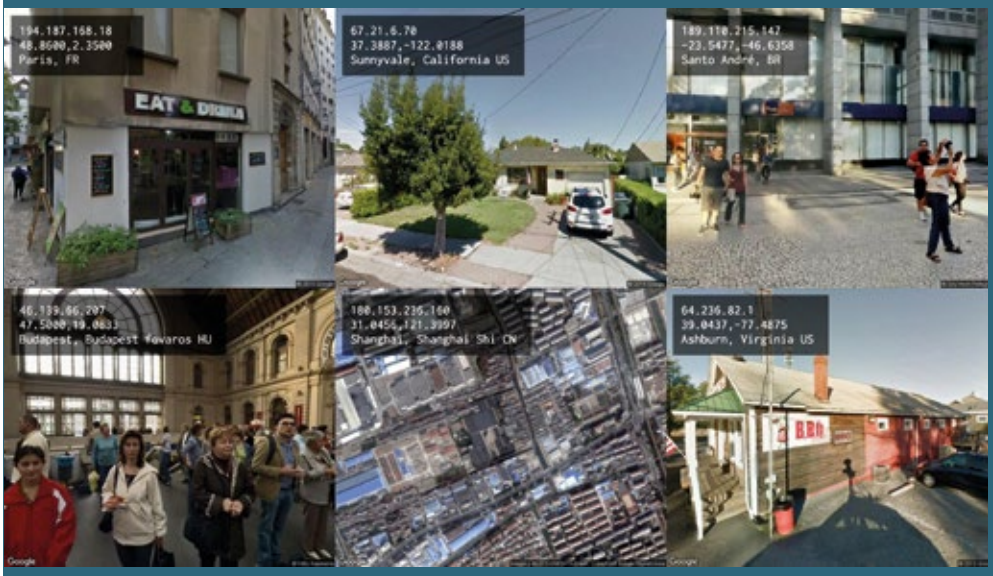
Most recently, Edward Snowden’s spectacular escape from the US after the NSA leaks raised the question of how dangerous an intransparent and uncontrolled cooperation between these two actors, which represent different interests in surveillance, is. In fact, the cooperation between big tech and the state is a driver or even a condition of the digital transformation, displayed by direct and indirect state investments in enterprises such as Palantir, and also by single political actors using services such as those that Cambridge Analytica offered. Snowden’s autobiography, “Permanent Record” (2018), is an insightful book, offering deep views and explanations, even for a non tech-affine community. Growing concern about the monopolising power among the Big Five tech companies - Google, Apple, Microsoft, Amazon and Facebook - relates to the companies’ economic interwovenness with the military and security complex. This is similar for their Chinese counterparts, Tencent, Alibaba and Baidu.

Whether under the conditions of a democratic society or the authoritarian Chinese model, these companies co-establish power, which enables them to influence all spheres of social and private life in dimensions as yet unknown. Fenced networks such as the Chinese Great Firewall enable control of web access and meanwhile result in completely parallel internet structures and services.

Digitalisation and data exploration have become for some, the decisive tools to

intentionally gain full control over the life and actions of people, be it their political surveillance, economic exploitation, or peoples' voluntary use of the tools and platforms provided.

## Tracing You




Picture of "Tracing You " printed with kind permisssion from Ben Grosser.

*Tracing You*, a computational surveillance system developed by Ben Grosser (2015), presents a website's best attempt to see the world from its visitors' viewpoints. By cross-referencing visitor IP addresses with available online data sources, the system traces each visitor back through the net-work to its possible origin. The end of that trace is the closest available image that potentially shows the visitor's physical environment. Sometimes what this image shows is eerily accurate; other times, it is wildly dislocated. What can a computational system know about our environment based on the traces we leave behind? Why might it want to see where we are? How accurate are the system's data sources and when might they improve? Finally, what does this site's attempt to trace its visitors re-veal about who (or what) is reading the web? By showing how it sees us in real-time, Tracing You provokes these questions and more.
https://tracingyou.bengrosser.com/

## Datafication and Immersive Art Approaches

Many digital art productions are trying to connect arts and artists with new forms of activism (commons, tribes, civil organising) and with the sphere of tech, data and AI. A favoured approach to exploring the impact of digital transformation and datafication

on the social and the culture is inter-disciplinary cooperation between research, artists, (h)acktivists and audiences. The works of Joana Moll, of Guido Segni, Paolo Pedercini, Lauren McCarthy and Ben Grosser present a mission of arts and culture understood as a counterpart to commercial entertainment, aiming to instigate social change and empower citizens for social participation.

An example of immersive approaches, which mix different sorts of media and acting with social activism is the "Supernerds" (2015) production, a collaboration conducted in Germany in 2015 between public broadcast (radio and TV), theatre, documentary film, social media activism, and immersive game. The production reflected on the digital dissidents, Chelsea Manning and Edward Snowden. It has created a long-lasting, disturbing, real-life experience for those participating voluntarily, reflected on in an article by Christiane Enkeler about the theatre performance. The immersive approach of the production was the connection of several digital and analogue (sometimes staged) realities with the real digital and analogue life of the immersive game participants, the theatre and broadcast (TV and radio) audience. It allowed for an unveiling of the invisible dimensions of the quantified self and of datafication: interventions into real life, data extraction and analysis, letting people experience concretely what they may have formerly perceived only as an abstract technical, intellectual issue.

## "Supernerds" - A Monstrous Surveillance Evening at the Schauspiel Köln

Article by Christiane Enkeler –
originally broadcasted in Deutschlandfunkkultur / Sendung "Fazit", 2015.

"Supernerds - Conversations with Heroes" is the title of the book that director Angela Richter hands out at the Schauspiel Köln as a kind of programme booklet for the performance. Inside there are, among others, interviews with Daniel Ellsberg and Thomas Drake, Jesselyn Radack and Edward Snowden - "digital dissidents", above all whistle-blowers, as the TV documentary portrays them in the classic documentary format following the evening of theatre and TV.

Here, the theatre acts as a hub for a transmedia super-project that deals with omnipresent surveillance. On stage there is a small radio studio and a booth with a glass pane from which a radio reporter for public broadcast, WDR3, comments on the performance as it is also broadcast on the radio. Next door, journalist Bettina Böttinger broadcasts live from a studio for WDR television, but every now and then she enters the stage for commentaries and interviews just as an actor wanders from the theatre stage to the television studio.

**Registration in Advance**

At the beginning of the evening, the dramaturge Thomas Laue and Bettina Böttinger present the play and announce that the audience may leave their mobile phones

switched on. Since the audience provided a few, not-too-secret details in order to pre-register for the event-name, address, e-mail, mobile number, various Facebook accounts and the like - it's possible that the show has already begun. Even those without a ticket could register on supernerds.tv for a "Suddenlife Game", an immersive social media and interface game that intervenes in everyday life and intertwines reality and fiction. Various game modules, still available, were designed to provide, for example, an "NSA perspective". All this describes only the initial situation for the time being.
[...]
Under the overarching theme of "surveillance" many other topics are discussed: self-censorship, the cult of national security with an omniscient, omnipresent "God", heroism and normality and an "apocalypse" that one grows accustomed to.

**Fidgeting Actors between Mannequins**

Using a multimedia approach, the question of what all is possible is answered by describing how live in a TV studio, the mobile phone camera of a theatre audience member could be coerced. Julian Assange speaks as a razor-sharp 3D hologram on the Cologne stage in an interview with german TV journalist Bettina Böttinger (looks like it's switched on, but it's not really) of a "secret service cancer", similar to director Angela Richter in a WDR talk show in the run-up to the show.

But the evening on stage is also monstrous, and not only in the good sense: too much commotion is put together too quickly and too hectically. On stage, the actors speak between mannequins, cardboard figures and mute extras in the roles of whistle-blowers or the interviewer, Angela Richter. In doing so, they wriggle and move almost constantly, or the static figures move ever closer to them. The result is that you can hardly listen to them. Overstimulation is always part of the program, and it fits the topic, but given the abundance of content, it is a pity how much narrative is surpassed. But then: actress Judith Rosmair stands in the spotlight as whistle-blower Chelsea Manning, with a blue jacket over her little dress, the hood pulled far over her face, her hands shoved deep into her pockets, like a goblin, and says: "I just want to stay out of it as a person". And this figure, a person most of all, finally sits on the floor, with her back bare and crooked, swaying back and forth quietly.

**Trivialising Show Character**

For the theatre audience present, the TV was always an added layer, providing statistics or service, to deeper explain: How does that work? The resulting nature of the show made the experience less harmful than was actually intended. It may be that it looked completely different from the viewpoint of the television viewer (watching the broadcast). Or sounded different on the radio.

By the way, all this is foremost sequential seeing and hearing. You cannot rewind your visit to the theatre. However, you can change the perspective afterwards, non-sequentially, when individual modules are made available online: "click" on the TV evening broadcasted with Bettina Böttinger, take a quick or maybe a longer look around and notice that the TV viewers have obviously voted on how we were treated as test

group in the theatre hall? [...]

Particularly interesting is that the "Suddenlife Game"using the technical devices (cell phone, mails, of the people who signed up as participants via www.supernerds.tv has been live for weeks. [...]

**Listening and Other Surprises during the Immersive Game**

One of the possibilities, the "wiretap hotline", lets the caller take part in an intimate conversation and asks, somewhat surprisingly, whether he or she is also willing to participate. If so, soon a text message is sent with the info that the phone is now being bugged. And in the end is a debriefing.

You can "surprise" friends, but you have to ask them beforehand grant consent on the surprise, because you pass on their mobile phone number. You reveal a detail of their life, which is incorporated into a confidential and conspiratorial SMS. They are called - and here, too, at the end of the immersive game there is provided a debriefing.

A longer story is the "NSA perspective" or contact by "suspicious" persons. Several people are said to have contacted the developers of the game before the premiere, who were worried whether they could still travel to the USA without any problems - although they must have known that they were playing a game.

This mixture of reality and fiction is reminiscent of "War of the Worlds", the deceptively real radio play by Orson Welles, which many listeners tuned into when the supposedly real coverage of a Martian invasion was already in full swing. They believed that there really was an alien attack.

**A Tradition of Data Collection**

That was 1938 and fully fiction. "Supernerds", on the other hand, is based on interviews. The TV documentary "Digital Dissidents" by Cyril Tuschi ends with "Digital Dissident" Thomas Drake visiting the Stasi Museum in Berlin in the Ministry for State Security. The focus is on the tradition of data collection.

Theatre traditions may also come to mind: Augusto Boal's "Invisible Theatre", in which the viewer does not even notice that a situation he stumbles upon in everyday life is actually theatre that is actually performed, implicitly calling on him to intervene. Or Boal's "Forum Theatre", in which the audience is supposed to vote on the course of action. Boal was concerned with the mature audience. Equally interesting is the question of the character of the play and the play community. To virtually expand a group of spectators is not so far-fetched.

One may also think of social sculptures. The development of figures and characters, which plays a role in "Suddenlife Gaming" and in the theatre, is also an interesting aspect. The theatre came up a little short here - but it's certainly worth thinking further.

How nice that television celebrated theatre in this way!

The whole experiment of transmediality is a bit much, but aesthetically it was certainly not in vain. A good starting point for many, many considerations. What more could you want.

## Conclusions for Education

The utopic idea of a people-driven, democratic and participatory governance of the web is a creative and non-centralised digital transformation, but even more, a form of digitalisation that serves our democratic and cultural needs. Another idea is represented in what we have called here data capitalism, characterised by appropriation, centralisation and power. Both are worthy of deep consideration in terms of their consequences, as they concern core premises of democratic governance, democratic societies, democratic life and individual rights.

"If we look into digital cultures, there are networks and not free spaces. These networks are always corrupted in terms of dominant network logics such as ranking algorithms. It is important to know what happens there and to understand which aesthetic discourses play a role" (Jörissen, 2020).

In this sense, education could raise the question about proprietary control and different aims of forecasting and surveillance, of ethical behaviour, fair governance and decisions about communication culture and also about the rules of the game for the state, companies, users and civil society. In other words – education might explore how digital transformation is affecting the democratic culture of our societies, including the way we want to shape and structure common discourses and decision-making processes. Digitalisation ignites for a new generation the necessary condition for a seemingly old discourse about public commons, individual and common aims/goods, rights and responsibilities, in the form of access and participation, privacy, inequalities, power and governance, ecology or others.

For the individual citizen in multiple roles as consumer, user and practitioner who integrates digital tools into everyday cultural practices, the increased likeliness of expected conform behaviour and action is becoming apparent (the term social cooling describes these processes). Also, this raises the question of how social interactions are shifting. For instance, the phenomenon of social cooling has been on the agenda for quite a while. The term describes the growing danger of citizens censoring themselves as they are part of a society in which scores and likes determine social creditworthiness. Arts-based approaches are inspiring civic education to facilitate this exploration and discussion, because they advocate for a utopic, just and egalitarian look at these disruptive processes. They are interested in the purpose, by asking "what for". They invite a cultural-historical view of developments and uncover the anthropological constants often ignored in other fields.

# 4. Artificial Intelligence

Reflecting on the field of culture and arts with the entry of Artificial Intelligence (AI), might raise initial questions about “what is nature” and “what is culture” and whether our assumptions of the human character, of creative processes and of culture are still valid. How far will AI challenge a traditional understanding of “culture”, and will our basic assumptions about nature and about “natural” normality undergo further change? The above developments and exponentially growing opportunities to gain control and influence of our lives are connected with the development of Artificial Intelligence (AI). The next is Artificial General Intelligence (AGI) of self-learning machines. Both offer the means to extrapolate and connect data and (independently) generate subsequent actions, which have implications for social life, since AI is applied today in many different big data processes. It intervenes in life-planning and social and economic decisions, whether through ratings on Tripadvisor, scoring-reward apps or walking and health apps. The known systems now collide “with overwhelming amounts of data, spun out of control globally, and with a hitherto unknown faculty for the organisation of people and information. It is only consistent that this radically questions power structures without prior knowledge of the structures replacing them” (Seman, 2019). The challenge of the existing system through the opportunities of control, surveillance and exploitation has no known predecessor.

The most spine-tingling, dystopian example is perhaps the often-referenced social scoring system applied in China (whether it really works or not), where, seemingly, the management of a whole society is built on algorithmic processing.
Obviously, art as the traditional domain of creativity feels challenged by Artificial Intelligence and AI already impacts various fields of cultural and arts production.

An artists’ response is to transform the crucial questions into experiments, unveiling connected dilemmas, as described by a CoE expert commission:

How can culture maintain its important human imprint and guidance role in a time where AI already heavily impacts creativity?

Can it contribute to a human- and citizen-centred technological future by proposing and developing alternative concepts?

How does AI impact the perception of human uniqueness, especially the role of artists? How does digitalisation change the character of intellectual property?

Can culture still represent a mirror of society in a time when AI blends with human creativity? (COE, 2018).

## Creativity or Not? The Next Rembrandt

*The next Rembrandt* (https://www.nextrembrandt.com/), a completely AI generated new Rembrandt painting is the result of a cooperation between Microsoft, TU Delft, the Museum het Rembrandthuis and ING. The painting was produced with artificial intelligence that was trained to think and paint the same way as Rembrandt. The discourses following its release and exhibition in 2016 were to a certain extent predictable: enthusiasm about what AI can already create (the tech field), pointing out the human factor developing the code (the traditional higher arts critics field) while at the same time classifying the work as non-art. No Art, because: never ever Rembrandt would have painted a nose without a light point on it! :)

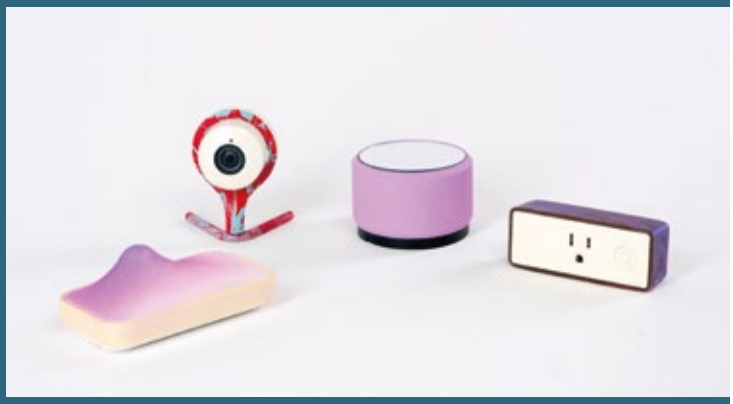
As an article in the Sueddeutsche Zeitung about the revealing of the image explained aptly: if arts needs to evoke reactions and emotions, then both reactions - the harsh rejection of arts experts as well as the enthusiasm about the work shared by the audience - classifies it as art. This exposes a space to explore the relation between arts and AI (Kreye, 2016).

The question of who owns the copyright (law field) for the painting that has been produced by a computer has resulted in a dilemma of competing views. While the reactions of the first and second group were to some extent expectable and follow patterns of arguments that also can be studied in historically similar debates where competing fields of arts production meet, the question about the copyright unveils the inherent logic of the arguments of the other two parties. De facto, the dimension of finding an answer on who is the holder of copyright for the work did not answer the question of who is the author, but found its answer in the question of who commissioned the work and contracted the contributing parties, namely the bank, ING.

But honestly, can it be that the legal opinion of a law firm defines whether a work is art or not?

## Lauren - Exploring Algorithmic Living

“I attempt to become a human version of Amazon Alexa, a smart home intelligence for people in their own homes. The performance lasts up to a week. It begins with an installation of a series of custom designed networked smart devices (including cameras, microphones, switches, door locks, faucets, and other electronic devices). I then remotely watch over the person 24/7 and control all aspects of their home. I aim to be better than an AI because I can understand them as a person and anticipate their needs. The relationship that emerges falls in the ambiguous space between human-machine and human-human. LAUREN is a meditation on the smart home, the tensions between intimacy vs privacy, convenience vs agency they present, and the role of human labor in the future of automation” (Lauren Lee McCarthy).
Lauren becomes your smart home robot: www.get-lauren.com



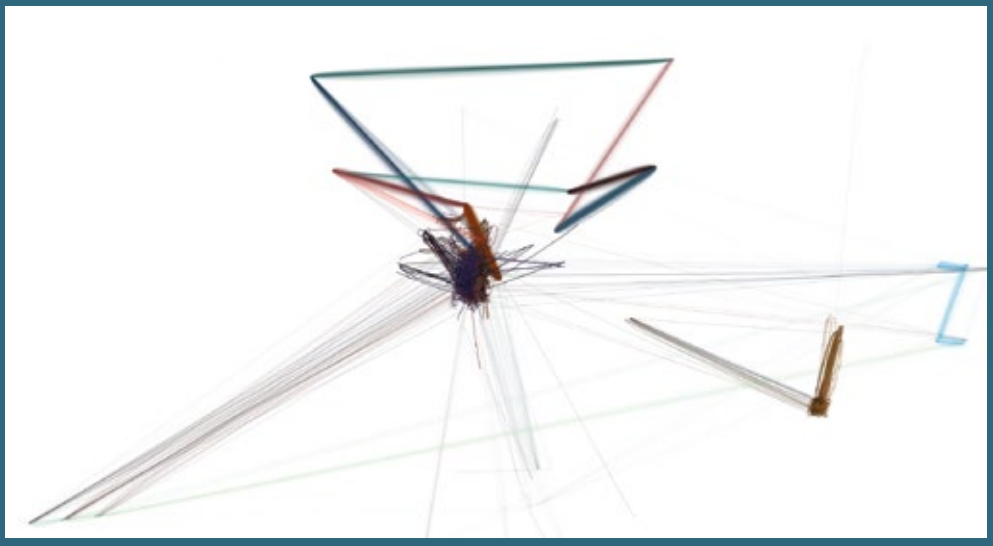
Lauren Lee McCarthy examines social relationships in the midst of surveillance, automation, and algorithmic living. She is also the creator of p5.js, an open source programming language for learning creative expression through code online. She is co-director of the Processing Foundation, a non-profit whose mission is to promote software literacy within the visual arts and visual literacy within technology-related fields - and to make these fields accessible to diverse communities.
https://lauren-mccarthy.com

Picture of “LAUREN” printed with kind permission from Lauren Lee McCarthy, Still from LAUREN Testimonials, directed by David Leonard

The debates around “the next Rembrandt” demonstrate the two types of questions that characterise the relation between AI and the Arts. The first asks whether computers can be creative, stressing parameters of authorship, mastery, originality, expertise and taste. The second asks, as Joanna Żylińska in her 2020 book on AI Art investigates, whether the humanist foundation of the concept of intelligence is still sufficient: does Artificial Intelligence make a post-human centered view on intelligence necessary? “Accepting that traditional moral paradigms with their religiously inflected transcendent notions of good and evil cannot be unproblemtically applied to AI issues... Such an application of traditional moral theory, with its discrete rational subject, is also most likely going to be futile – as well as intellectually inadequate – given that it frames the AI agent as a mere extension of the human, without allowing for the possibility that AI´s intelligence may take the form that is not only superior to that of the human but also unrecognisable by humans as intelligence” (Zylinska, 2020, p. 34).

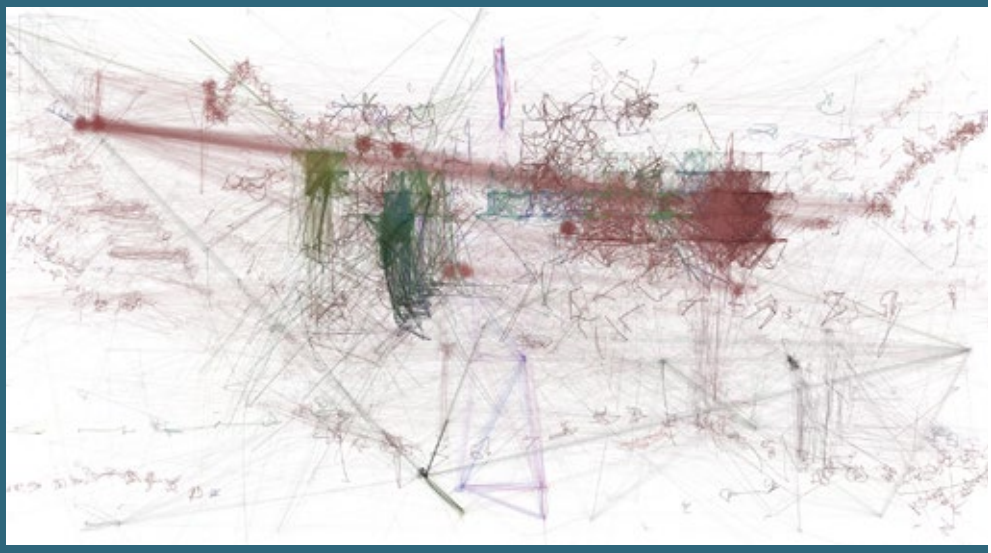
Is AI art then a further development of the already established computer generated art or does it raise fundamental questions? When “the digital worlds bring forth their own new aestethics, increasingly algorithmic, produced by artificial intelligence, following non-human principles”, what is the very purpose of Artistic production (Jörissen, 2020)? What are art, photography and other forms of image-making and any creative production for? Does art exist outside the human cultural practice? Will AI create new conditions and new audiences for art?

## Computers Watching Movies



Computers watching movies: 2001 Space Odyssey

Picture of “Computers Watching Movies “ printed with kind permisssion from Ben Grosser.



Computers watching movies: The Matrix

Who is the programmer? Who is the interface? And who is the cognizer? Ben Grosser's film Computers watching movies (here: the Matrix) gives us an impression of how the visual cognition of computers/AI functions. The processor in the camera enables a human to see the human pictures while a computer extracts the information in other patterns? What is real and from whose perspective? Depending on the nature of the cognizer, several answers are possible. Is the data extract of "2001: Space Odyssey" or that of the Matrix not closer to the message of the film itself?

A closer look at technical images shows that they are not images at all but rather symptoms of chemical or electronic processes. "A photograph shows a chemist how specific molecules of silver compound have reacted to specific photons. A television image shows a physicist the paths specific electrons have taken in a tube. Read in this way, technical images are objective depictions of events in the particle universe. They make these processes visible, just as a Wilson chamber makes the trace of a particle visible. The objectivity of this visibility does present certain familiar problems for the theory of perception, however. For since the particle can only be seen when specific instruments (media) are in use, such as sensitive surfaces, cathode ray tubes, or Wilson chambers, the question whether these instruments themselves affect the phenomenon they seek to make visible becomes a problem. Technical images are only images at all if they are seen superficially. To be images, they require that the viewer keep his distance" (Flusser 2011, p. 35).

https://bengrosser.com/projects/computers-watching-movies/

Besides the field of digital art as its own discipline (as a new discipline or as one of media art), there are vast discourses and consequences asking for the social role of art and culture in a digitised society, as a group of Council of Europe experts formulated:

> Arts & Culture need to be part of the dialogue about information society (be it about digital transformation at large, or AI in particular).
>
> Arts & Culture provide essential contributions to the deliberations about our common technology-influenced future, both in terms of realistic insight (through critical media art) and sense of direction (reflexive and holistic approach).
>
> Arts & Culture stimulate active engagement and creativity in citizens and hence diversity in production, against the odds of global cultural standardisation and homogenisation.
>
> Arts & Culture are an irreplaceable means of expression of the human genius, its innate inventiveness and creativity, its power of self-determination and its manifest human rights.
>
> Arts & Culture are key vectors in generating the necessary social intelligence and emancipation to accompany new life practices marked by increasing human-machine interaction" (COE, 2018).

Following the initial distinction between culture and nature, the development of AI and AGI challenges also the concept of the artistic space. Artistic space is the intimate space where insight and creativity direct the artist's hands, and as such, AI-generated art seems to be (at least partially) questioned or even invalid, since they are electronically mediated and untraditionally crafted. This can be seen in the debate about the genuine character of The Next Rembrandt.

Art production from its very beginning has been based on the use of instruments which have further influenced the technical, the work/oeuvre, the art and its inherent discourses and philosophy about arts itself. The underlying question AI poses to us is to deeply re-think what creativity is in its essence? Is it a human-only concept? What do humans perceive as creativity? Coming back to the consideration about the nature of artificial intelligence and thinking through it further, what do humans recognise as mastery, originality or intelligence?

Zylinska asks whether we shouldn´t rather question what machines see, feel, communicate and exchange, and what the story of AI itself is. This is also a shift inside the cultural discourse, which very often sticks to the "hyped" appearances and products of AI and digital art, but is not interested in their conditions, impact and technology.

"In recognising that the reception of technological art, especially of the kind that uses

or at least engages with AI, requires some technical competency, it asks what is being unveiled and obscured by the current artistic discourses around AI. Going beyond aesthetic experience and the sense of "fun" that is often associated with technology-driven art, it considers art´s role in demystifying new technologies while highlighting some socio-political issues - but it also explores the limitations of art as a debunker of techno-hype" (Zylinska, 2020, p.14).

## Conclusions for Education

The discussion about authorship, creativity and about intelligence as introduced through the Rembrandt picture provides an example that with Artificial Intelligence and with Artificial General Intelligence (in its various applications) there arises a need to question some foundations of our basic assumptions about culture and intelligence. Education can make use of the example in order to start a debate about the basic humanistic foundation for a democratic life. What counts as valid and what doesn't? How aware are we in our assessments and our decisions about society and societal life in the Anthropocene?

We need to understand the processes and models we apply to the assessment of Artificial Intelligence which follow the perceptions and conditions of human intelligence alone. We also need to see what the alternatives are, for example by "becoming" the AI as in the human-driven application developed by Lauren Mc Carthy in her LAUREN work.

Arts based interventions and approximations may help to develop, on one hand, a more haptic and on the other hand, a more holistic view towards the topic, which is in imagery so far dominated by a discourse of negative impact on or , ultimately, the extinction of mankind. Following a logic of citizenship learning, an important aim of educational processes would be to understand the consequences of the inherent premises of our thinking models for our worlds of ideas about democracy.

# 5. Inside and Insights of the Cultural Industry

In cultural production, digitalisation and increasingly AI have already started to leave strong footprints on music and movie production, writing, gaming and museums, whether by virtue of the technical aspect of the production process or in methods for reaching out to audiences. Also important is the inherent topical focus of developing an image and a projection of digitalisation in their oeuvre. Having a more detailed look into the field is important as it vitally affects the wider field of everyday cultural practices and the indistinct spheres of high and popular culture. As such, there are emerging practices deeply worth considering for a citizenship education approach.

Furthermore, the fields of cultural industry and arts production seem to offer a playground for testing AI applications and training AI concretely, as can be seen in the activities of openai (www.openai.com). It is not a coincidence that the big digital companies provide arts and culture labs, scholarships, fellowships and tech festivals.

"Due to the digital expansion of analogue living worlds and the further development of digital technologies and AI, activities and cultural techniques are increasingly shifting to digital contexts without any reflection on whether this is desirable" (Keuchel (2020) in: Kreativ und Digital, p. 28).

## Algorithms and the Creative Industry

Christopher Steiner, author of "Automate This: How Algorithms Came to Rule Our World", has identified a wide range of instances where algorithms are being used to provide predictive insights – often within the creative industries. In his book, he tells the story of a website developer called Mike McCready, who developed an algorithm to analyse and rate hit records. Using a technique called advanced spectral deconvolution, the algorithm breaks up each hit song into its component parts – melody, tempo, chord progression and so on – and then uses that to determine common characteristics across a range of No 1 records. McCready's algorithm correctly predicted – before they were even released – that the debut albums by both Norah Jones and Maroon 5 contained a disproportionately high number of hit records.

The next logical step – for for-profit record companies, perhaps – is to use algorithms to replace the human songwriter. But is that really an attractive proposition? "Algorithms

are not yet writing pop music," says Steiner. He pauses, then laughs. "Not that we know of, anyway. If I were a record company executive or pop artist, I wouldn't tell anyone if I'd had a number one written by an algorithm" (HICKMANN, How Algorithms rule the world, in: THE GUARDIAN, 2013, https://www.theguardian.com/science/2013/jul/01/how-algorithms-rule-world-nsa).

Similarly, there are predictive programs in beta testing that estimate, for example, the financial production of Hollywood movies, predicting the commercial breakthrough interlinked with the story and the cast of actors.

## Music

Electrical devices such as the looper and sampling machines technically have been initiating the "classical conflict" of authorship and copyright between artists since the 70s, mainly rotating around the question of creatorship and authorship. As a cultural side-effect, the "remix" and the mash-up were introduced. Sampling was made possible by the invention of (first analogue, then digital) sampling machines, which became with the *Ensoniq Mirage* affordable for the wider masses; subsequently the genre of rap/hip hop became one of the most influential and lasting fields of popular culture production. During the late 90s and early 2000s, the question of ownership and copyright emerged as a result of the appearance of online filesharing platforms such as Napster, which was one of the fastest growing internet communities at the start of the 2000s and showed potential for decentralised community building/organising by a digitalised community.

Digitalisation and digital music production underwent a revolution itself when Apple bought the small german enterprise, *emagic*, at the beginning of the 2000s. As with the subsequent development of the software, *Garage band*, the whole music production process was in the hands of musicians themselves.

AI, such as *Jukebox* generated by openai, is meanwhile proving to successfully compose small music pieces, and has even had several performances on Twitch channels. However as openai states: "While Jukebox represents a step forward in musical quality, coherence, length of audio sample, and ability to condition on artist, genre, and lyrics, there is a significant gap between these generations and human-created music" (https://openai.com/blog/jukebox).

## Performing Arts

Digitalisation even does not stop at traditional fields of performing arts, it actively shapes several spheres, as can be seen in various tools such as the *RAM dance toolki*t (Kyle MacDonald 2013, https://special.ycam.jp/ram/en/) supporting dancers to communicate with each other in virtual environments. The programm includes functions to access, recognise and process motion data to support creation of various

scenes and to provide realtime feedbacks to dancers with code.

*Discrete figures* (Kyle McDonald, Rhizomatics, Elevenplay, 2018) is an internationally touring dance performance. "Exploring the relationships between the performing arts and mathematics, it depicts mathematical entities that engage with the bodies of human dancers onstage. It uses a custom dance dataset and trains a new network for generating abstract dance-like movement. Discrete figures unites the performing arts and mathematics in a dramatic exploration of the relationship between the human body and computer-generated movement (simulated bodies) born from mathematical analysis. As an additional layer of complexity, the performance piece utilises drones, AI and machine learning in the quest for a new palette of movement to foster undiscovered modes of expressive dance that transcend the limits of conventional human subjectivity and emotional expression" (Rhizomatics, Discrete Figures, 2019).

The vast projects and concepts of researcher, artist and coder Kyle McDonald makes himself a human interface for understanding and exploring digitalisation on a broad scale for various artists, researchers and interested organisations and people. A mention of all his projects and collaborations is worth its own book. We recommend a deeper investigation of his work: https://kylemcdonald.net/.

## Literature and Writing

In the literature field, digitalisation has been an ongoing topic for many years and has successfully contributed to the development of an imagery of what digitalisation looks like. Science fiction in literature and films has largely contributed to our ideas of the digitalised future, be it in the form of machines or technical developments, starting from the pioneering work of Isaac Asimov, who formulated the three laws of robots.

The novel *The Circle* by Dave Eggers has developed dystopia for the 21st Century comprising surveillance, transparency and social control as it is maintained today by services of the so-called "GAFAM". Both novels largely influence the public imagery and the discourse about digitalisation, one more utopic and the other more dystopic.

Literary review widely uses platforms developed by amateurs and replaces professional printed reviews. Amazon, the worlds largest online retailer, has fundamentally changed the logic (and logistics) of the literature market itself.

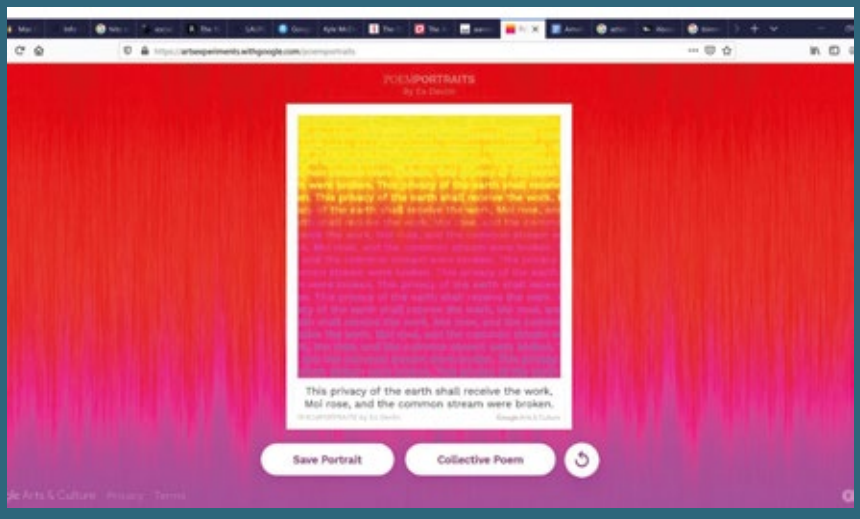
Writing fiction so far has been only rarely discussed as a field where AI holds stock: however, Richard Lea, a writer for "The Guardian Books", rightly asks, "if a novel was good, would you care if it was created by artificial intelligence?", and subsequently discusses the first attempts of using AI for the development of screenwriting (Lea, 2020). Deeper insight into what is possible in using AI for writing is explored in the art project, *https://thisarticledoesnotexist.com/*, which shifts attention to the field of journalism, fake news and the existing practice of fake bots, generated content and its impact on

our societies already today. The question of creatorship for fiction seems to lead to the conclusion that there is a clear difference between art of writing a novel and of generating content. But for how long will it remain this way?

While the examples shown offer a rather playful and funny take, they don't really provide a deeper sense. Open Ai´s *GPT-3*, released in beta version in early 2020 and meanwhile licensed to Microsoft, an autoregressive language model that uses deep learning to produce human-like text. It is the third-generation language prediction model in the GPT-n series created by OpenAI, a for-profit San Francisco-based artificial intelligence research laboratory. GPT-3's full version has a capacity of 175 billion machine learning parameters (Wikipedia contributors, 2020).

"A robot wrote this entire article. Are you scared yet, human?" (Wikpedia: GPT-3, in: The Guardian, 08.09.2020.) is a landmark article which demonstrates the quality of the AI. "Because GPT-3 can `generate news articles which human evaluators have difficulty distinguishing from articles written by humans, GPT-3 has the potential to advance both the beneficial and harmful applications of language models´. In their May 28, 2020 paper, the OpenAi researchers described in detail the potential "harmful effects of GPT-3" which include "misinformation, spam, phishing, abuse of legal and governmental processes, fraudulent academic essay writing and social engineering pretexting" (Wikipedia contributors, 2020). Visit GPT-3 here: https://openai.com/blog/openai-api/

## Poemportraits




Es Devlin developed in Google Arts & Culture the Poemportraits project which offers an AI-driven poem generator, where an algorithm creates a poem using a word "donated" by a human. It is also a wonderful example how data tracing works: https://artsexperiments.withgoogle.com/poemportraits

source: https://artsexperiments.withgoogle.com/poemportraits

## Film

Few thing have influenced our idea and the prevalent imagery about digitalisation as much as movies: Kubrick's *2001 Space Odyssey* introduced Hal 9000, the error-free smart home facilitator, 50 years ago already, while the Star Wars universum largely stressed the image of the friendly and supportive robot via R2D2 and C-3PO and, in the newer movies, BB-8.

Spike Jonze´s fictionary dystopia, *Her,* put the ubiquity and simultaneity of the female software, Samantha, at the centre of their relationship. Kathryn Bigelow's cyberpunk dystopia *Strange Days* is one of the movies that introduced the processor brain port, which nowadays, one can find in the discussions and projections about wearables. Finally, 1984's *The Terminator* as the evil android/cyborg has provided the negative projection of a future where machines take over. This found its climax in *The Matrix* trilogy, which put dichotomic human-machine software at the heart of the story- with Agent Schmidt as the replicable super program wherein super-intelligence manifests and reproduces itself.

While these stories allow for an exploration of a potential future, the horizon provided is anticipative, puzzling, disturbing and, for the most part, biased.

Since the late 90s, movie production itself has entered technically new spheres by virtue of digitalisation, as the production process itself allows for developing completely digitisesd and digitally generated stories. This started with animated movies, led to the Lord of the Rings and eventually the fully augmented Avatar. The opportunities provided by digital rendering and 3D animation partially introduced us to a brand new visual spectrum and viewing habits, which, to some extent, merged with the world of computer games.

Another, economist, effect of digitalisation in the movie production chain is the often-stressed death of classical cinema. Since emerging streaming opportunities have increasingly stressed the limitations of the classical owner-led cinema structures.
However, similar to other fields of entertainment/arts, the integration of digitalised technology in the production market meant not the end of the classical cinema and film world, but also the addition of another aspect entering the game. Aside from the technical aspects of having developed a new technical chain and the subsequent classical professions dealing with movie productions with digitised technology, it mainly impacts the market offered through digitised means. It has significantly changed the business model from screening originals to platform-based production, retail and user models. The platforms and on demand services themselves step nowadays into the role of producers.

## Gaming as Learning Space, Games and Art

People love to play at all ages. Through play, they appropriate reality, enter social relations and experiment and experience in manifold roles and worlds. Digitalisation has brought play in new form into our everyday lives. The video game has been, since the early days of the home computer, an indicator for technological advancement and a mirror of our culture: enthusiasm seems unbroken. Apps, smartphones and tablets make gaming today even more comfortable. Already in 2014, 40 percent of 16-74-year-old Europeans used the internet for games, music or movie streaming or download (during the last three months of the poll). The tendency points upward (Eurostat tin00032).

The average age of gamers in Germany in 2018 was already 36.1-years-old and the group of those 50+ is already the largest, according to the games industry. In line with this trend, the smartphone is replacing the PC as a gaming device. Digitalisation is bringing up new payment models in the form of micropayments, subscriptions, and memberships (and connecting them with the gaming persons who become users, whereas before they were owners). Digital transformation has helped gaming to realise a breakthrough. Adult civic education might reflect on gaming-related competencies as well as aligning our perception of adult learners with gaming realities.

The potential of games and play is transferred increasingly to other contexts. The word "gamification" describes the implementation of game elements in other social interactions. The game mechanics and gameplay are expressing a behavioral expectation (competition and consumption) or are shaping incentives for players to act (by "nudges", badges, scoring, bonuses, or leaderboards).

Referring to Huizinga, one could point out that gamification seeks to utilise the human play-mood as the extraordinary emotional experience in order to enrich the user experience somewhere else, for instance in an app: "The play-mood is one of rapture and enthusiasm, and is sacred or festive in accordance with the occasion. A feeling of exaltation and tension accompanies the action, mirth and relaxation follow" (Huizinga, 1949, p. 132). Therefore, a lot of apps and data extraction mechanisms include gamification elements which users are usually not aware of.

Particularly today, network games and apps are most popular. Depending on the attitude of the gamer, one might study both the glory and misery of human nature. Some learn participatory teamwork even in bloodthirsty scenarios, some get ripped off by micropayments. And data colonialism is no theory when European or North American gamers pay Asian professionals for playing their character through several levels. Such gold farming is organised by companies but seems also to take place in Chinese prisons (The Guardian, Vincent, 2011).

In this sense, it could be an option for civic education to talk less about the game mechanics or scenarios and more about the globalised economy of gaming. The gaming experts Pedersen and Plass-Fleßenkämper indicate a unique feature of modern games distinguishing these from movies: "They are remarkably longer than a two hours movie. During the past years the average gaming time has increased and double-digit playing

times are today quite normal. However, instead of focusing on credible stories and complex characters, there is more brute action or there are game worlds with boring sub tasks" (Pedersen & Plass-Fleßenkämper, 2017, p. 142).

Video games seem to support addiction and intellectual regression as well as the development of intellectual abilities. They seem to amplify analogue behavior. Possibly, the "dark side" becomes more visible at the forefront because problematic social behavior is corrected or sanctioned in a game setting. Others say that conflict and violence are necessary ingredients in many good stories. In civic education, such approaches become interesting when the plots and game mechanics try to reflect democratic principles or try to implement elements of learning to play cooperatively and fair. Instead of gamification, playfulness would rather step into the focus of such game designers. The idea is connecting people by playing in order to socialise, to follow their playfulness, to overcome everyday hurdles in an exceptional playing experience and to co-define game mechanics open for social curiosity. From this perspective, playing might be conceptualised as a collective and participatory process.

Games seem to be a vital part of everyday culture, but are they art? Cheered by the gaming industry, Pac-Man and 14 other games were included in the MOMA´s architecture and design collection in 2012 (distinct from the arts collection).

## The Great Art Upgrade

By Paolo Pedercini,
Retrieved from: https://www.molleindustria.org/blog/the-great-art-upgrade/

Like it or not, the job of most artists boils down to fill some empty space, to take advantage of and justify the existence of the art infrastructure. These white, clean rooms where civil and educated people hang out. I'm personally not interested in creating work for these institutions, because I'm not interested in entertaining the mainly privileged people who hang out in these spaces.

And I believe the most interesting art now happens outside of the white cube: net art, social practice, creative activism, performance. These practices are rarely mentioned in the "Art vs. Games" discourse, because we are obsessed by museums, and yet they have a lot of things in common with games and play. But I also believe these traditional art spaces are interesting and important because they have unique affordances; they allow you to have a complete control of the environment and the players. You can do illegal stuff, you can do very impractical stuff, you can do grandiose and insane stuff without fretting about game systems or distribution platforms.

This is very different from the museification process that got gamers and industry so excited.

When I look at this artsy MoMafication of Pac-Man: grey, dry, walltexted with headphones, I start to think that maybe Pac-Man doesn't need to be there in that space.

Maybe the importance of Pac-Man is self evident. And maybe the role of the art system is not to validate already successful commercial works but to enable the existence of works that could not exist anywhere else. Another question worth asking is: should games with artistic ambitions be more exhibition friendly? Should they be short, easy to learn, arcadey to deal with the short attention span of art consumers?

Games may need to disrupt the exhibitions space, like performances and time-based art had to before them. In the early nineties, black boxes were created to accommodate video art, for example. Festivals and events can be the best ways to bring together performance or socially engaged artists. We may need to bring some couches, snacks and drinks in the museum. Because you just can't play Cart Life in 5 minutes while standing.

In conclusion, here's the problem: all these approaches and questions I just posed did not matter in the "games vs. art" debate. Because that exciting, pedantic, fractal, never-ending dispute we call "art" was never the point of this debate. The point was to upgrade the cultural status of videogames as a whole: as a medium and as an industry. For gamers, it was a retroactive validation of the countless hours spent moving pixels around.

For the game industry, it was a chance to snort some of that fancy art dust without accepting the responsibilities that come along with working in that special area of culture. And critics, game makers, and scholars like us, people in this room who know about art and know about games, failed to propose a different narrative, a narrative that highlights the richness and the variety I just outlined.

I don't have a note for this keynote, but I do have a proposal, a desperate plea: Let's stop identifying with the game industry. Let's stop being academics/fans and glorifying consumer products that were never meant to be more than consumer products. Instead of being advocates for the medium as a whole, we can be advocates for good games and good art. Because we cannot have an art history of games without an art criticism of games." (Pedercini, The Great Art Upgrade, Retrieved from: https://www.molleindustria.org/blog/the-great-art-upgrade/

## Robots - Imagery of Digitalisation

by Nils-Eyk Zimmermann

The ambiguous feeling of curiosity, thrill, euphoria and discomfort connected to AI and digitalisation is rooted obviously in the uncertainty of how the relation between individuals to data will be codified in the future and to what extent this might lead to control, rights or new opportunities as human beings.

In particular, it's not the machine but the underlying computation raising concern. Turned off, a robot is just a bunch of metal. But when a system works, it is possible that

an algorithm, for example, decides if someone becomes employed or is let go, can do some activities or is prevented from doing them. Unfortunately, algorithms don't look so spectacular.

In contrast, over the last decade we have developed a rich imagery of robots. Some are critical and dystopian, but also relishing, funny and creative. Robots are a world cultural heritage and in our perception of robots, our expectation regarding the digital transformation finds expression.

Already in the Arabic Islamic Renaissance, people enjoyed humanoid machines. The Greek goddesses slipped into human bodies (Capurro, 2019). Karel Čapek is the inventor of the term "robot". His creatures from the 1923 published theatre play, "R.U.R. – Rossum's Universal Robots", have more in common with a Roman army of removal men. "In the prelude the robots are dressed like humans. They are scarce in movements and speech, expressionless faces, staring glare. In the actual drama they are wearing blue linen blouses, belt around the tail, and a brass number on the breast".

Later the cyber-creatures became more funny, intellectual, cruel and technically advanced. Between Robocop and R2D2 we might not see a lot of technical progress but we do notice diametrically different ethical attitudes of their designers (and screenplay authors). The cyborg added a new model already expressing the vision of machines physically connected to our bodies.

Because of robots' and cyborgs' huge popularity, opportunities for education are opening up for coming into conversation with learners and the broader society on the aims, forms and ethical implications of machine ethics or (wo)men-machine ethics. Learning about and with robots as cultural and technical concepts could tackle the social visions regarding the digital transformation, and also help to enter into specific topics related to AI or automatisation. Also, the way in which robots are embedded in a cultural and social context could be explored – are they part of a dystopian or utopian society? A more creative approach to facilitate the topic could help us also in exploring and prototyping alternatives to existing narratives and constructions, exploring what kind of robot would be worth it to develop.

## Conclusions for Education

"We live in a post-digital world....the analogue and the digital cannot be separated anymore, but we think and act in a sphere of analogue-digital possibilities and realities, in which the analogue and the digital complement each other, merge and blur....Cultural education in the 21st century per se is neither analogue nor digital. Current cultural education makes use of the possibilities that are available in a digitalised age to enable people of all ages to experience aesthetics, self-efficacy, cultural and social participation and thus educational processes" (Reinwand-Weiss, 2020, p. 15).

The developments affecting the field of arts and culture show the intertwined character

of digital and societal contexts. The post-digital has become part of our daily life since we experience digitalisation as concrete application in cultural everyday life practice and habits. Almost all music we listen to and movies we watch are digitally edited, processed and stored in digital media or streamed directly from platforms. “Installations in the field of visual arts work with digital media and point to social and political dependencies, but also to undiscovered possibilities. Museums put their collections online, make entire museums digitally accessible and democratise - at least in theory - cultural participation. Video, games and film have long been recognised art genres and are themselves in turn being used to develop new forms in typically analog art genres such as theater and dance. Artificial intelligences are used to create innovative art forms that do not require the generation of human ideas and are therefore no longer distinguishable from a man-made work of art” (Reinwand-Weiss, 2020, p. 15).

Questions abound as to what digital gadgets and instruments mark certain lifestyles, or the question of social status and codes, what digital norms and codes are socially applied, accepted, and also how these are read and interpreted: as inventory of progress, greeness, etc.

The transformation has opened chances for innovation and new alternatives, since it is not necessary unidirectional. Multiple web cultures are resilient, although one web culture, which is often perceived as a synonym for “digitalisation”, is dominant.
What digitalised culture means can be investigated in the question of how people do or don’t apply certain habits and whether they do it consciously. Everyday cultural (but also the wide field of popular culture) processes and interactions offer a wide realm for investigation and experimentation. It is also seemingly the fields where digitalised means have massively impacted our networked realities.

As educators, we could be encouraged to explore where digitised instruments naturally integrate into cultural life and what people are afraid of?

Why is digitalisation in certain fields of arts and culture easily accepted? We see this, for example in music production, gaming, film production, but also for ticketing and streaming services, while for crafts like writing and painting, we face debates about creativity, authorship and ownership, especially when AI conducts the creative processes?
What do the effects of ubiquitous computing and datafication in our lived realities look like, and in what artwork can we explore how creativity surfs the multiverse of seemingly conflicting areas?

The examples shown here offer for education a wide horizon to explore the emerging fields of practice, mirroring our everyday evolving digital practices. When is old practice simply “putting on a new robe”? What ideas are replacing existing practices and which are creating new forms of practice? Where are the connecting developments we see within our societies (in the market, economic models, networks and social practices)? Where are existing limits approached and left alone? Where are horizons created, and can we imagine what lays beyond them?

# 6. Motivation and Outlook: What Can we Learn from Arts-based Approaches?

Explained in a clear cut way: Where other forms and mediums fail or do not dare to go, the arts opens up the discourse and creates alliances through interdisciplinarity. There is an offer of kind of “new activism”, using a new medium to create an invitation for interaction, discussion and communication. A siloed view can be avoided, and narratives that are too simple and interest-driven can be critically examined and unveiled. We can learn that in order to understand the process of digitalisation, one needs to take on and conduct these processes actively, by conducting research, by becoming a programmer and using p5.js, by transforming our educational spheres themselves into a digitalised practice, by developing curiosity about our inventory of practice and by being open to new possibilities.

The digital arts as a practice combining research, art and social engagement, is the field to critically investigate and accompany the processes of digitalisation with new forms of practice. It is about curiosity casting a fresh eye on processes, experimenting with creative digital interventions as they occur and restructure our post-digital world. This counts for the dimensions of resource extraction and exploitation, for the underlying economic models and the consequences for democratic governance, as well as for questions of privacy and data. It also counts for unveiling the abstract processes of digitalisation and opening the machine to look at its instruments (the processors, the infrastructures, the software, the energy and electricity consumption).

What can be read from it? Digitalisation and data extraction are already set in place and work today. They are not an assumption about a yet-around-the corner or distant future. It is important to see that the technology and instruments are already widely in use. Technically, the premises and instruments for data collection and analysis are set-up, functionable and being implemented. Even more importanty, a growing share of societies worldwide seem to be dependent on an economic model whose basic premise is dependent on economically mastering the evolution into a digitalised economy. How will these technical and economic pre-conditions be used? Who decides their

configuration? We can name them as global challenges, but we need to understand that the essence of what the developments challenge might not easily find an answer from a human-centred perspective alone.

From a cultural-societal perspective, the question remains: what underlying consequences does this have for the formation of personalities, for the lived experience of culture, for the application of cultural rights, of cultural and social life? Do we have to prepare for an age when the protection of private data is a discussion disconnected completely from life habits – regardless of what system and society people live in? Does living in a post-digital era mean we have to prepare for a post-private society? What aspects of the individual and of the social need to be protected? For how long will the discussion and the consideration last as to what kind of principles our globalised and networked societies will follow? Are we standing in front of yet another 250-year long discussion? Will it be peaceful? Will there be severe conflicts? Will the discussion be led by the few, or will it be a discourse involving all needs? Will the decisions to be taken be decisions by a minority, or will these involve the maximum amount of actors and voices? Will non-human expressions and opinions be involved or not? Will these be considered relevant?

Art and the work of artists, hacktivists and researchers as shown help us vitally explore these topics to be decided upon in our societies, ranging from individual responsibility to global challenges. “Cultural education will only be able to contribute its potential if the actors learn about the complexity of digitalisation and the very rapid social transformation dynamics” (Jörissen, 2020).

Civic education might help to gain more clarity in regard to the functioning of various aspects of digitalisation, of robotics or AI, to gain an overview over the actual business practices, to analyse the underlying interests and income models. Critical thinking would allow us to identify opportunities, limitations or alternatives to them. “Who gains?” is a suitable guiding question. The answers allow us to understand, how it is possible that a device might be so cheap or available. How do producers, services and clients gain? How will their outcome be paid out? In what kind of mediums is the transaction taking place – money, relationships, influence, time, power? Is digitalisation a new technical standard enabling the powers who can afford it to perpetuate pathways of resource extraction, social exploitation and even colonialism?

The civic response to social challenges is manifold: engagement, awareness, protest, control, regulation, rejection, punishment, active change – to name some forms. Therefore, in regard to digitalisation, we also need more empowerment to active citizenship and civil engagement - more active citizenship education.

Thinking about the immersive character of arts-based education, cultural education or education using cultural techniques, Susanne Keuchel identifies several dimensions framing the topics, tasks, and activity fields of education in a post-digital era:

“

Accepting responsibility for analogue and digital cultural participation

Anchoring of education, cultural education in analogue-digital living conditions

Taking up contemporary artistic-aesthetic analogue-digital forms of expression

Generating aesthetics as a discourse space for the design of analogue-digital living realities

Generating inclusive social discourses and spaces in advocacy for learners or people lacking access" (Keuchel, 2020, p. 28).

It requires openness to interdisciplinarity, going beyond our educational contexts and discourses of practice. Education has to explore digitalisation as a new "New". We can learn from the arts field that one discipline itself is not able to formulate a profound answer, nor is it able to grasp the interconnected and ongoing developments. It would be good if emancipatory citizenship and human rights education would try to research more and not stick to the position of being the neutral observer and educator but rather strive - as postulated within the field of cultural education – to actively enrich our inventory and imagery about an analogue-digital practice

From the perspective of post-digitality

From the perspective of a learning discipline

From the perspective of open mindness, openness, curiosity and and impartiality

From a perspective of generating an own position through research, practice and activism

Active Citizenship Eduation in Adult Learning should actively seek a position towards its role in digital transformation. Only then will criticism end up not in challenges, but anable to take a proactive and generative position. Between 0 and 1, there is plenty of space for transformative approaches!

## Link List: Art and Resources

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