

# Futures shaping art/ art shaping futures



**PICTET**  
Asset Management

**COPENHAGEN  
INSTITUTE  
FOR FUTURES  
STUDIES**

Art is a lens through which we can explore uncertainty and examine both the need for and limitations of human agency in an increasingly complex future. This publication explores the role of art as a unique and invaluable form of futures inquiry and showcases how art and futures studies interrelate and shape each other in various ways, drawing on examples and cases from international contemporary art, curators, art institutions, and futurists.



# SCENARIO **O** reports



# **Futures shaping art/ art shaping futures**

## **FOREWORD**

Pictet Asset Management has been working with the Copenhagen Institute for Futures Studies (CIFS) for over a decade to establish a deeper understanding of megatrends – the powerful secular forces that are changing the environment, society, politics, technology and the economy.

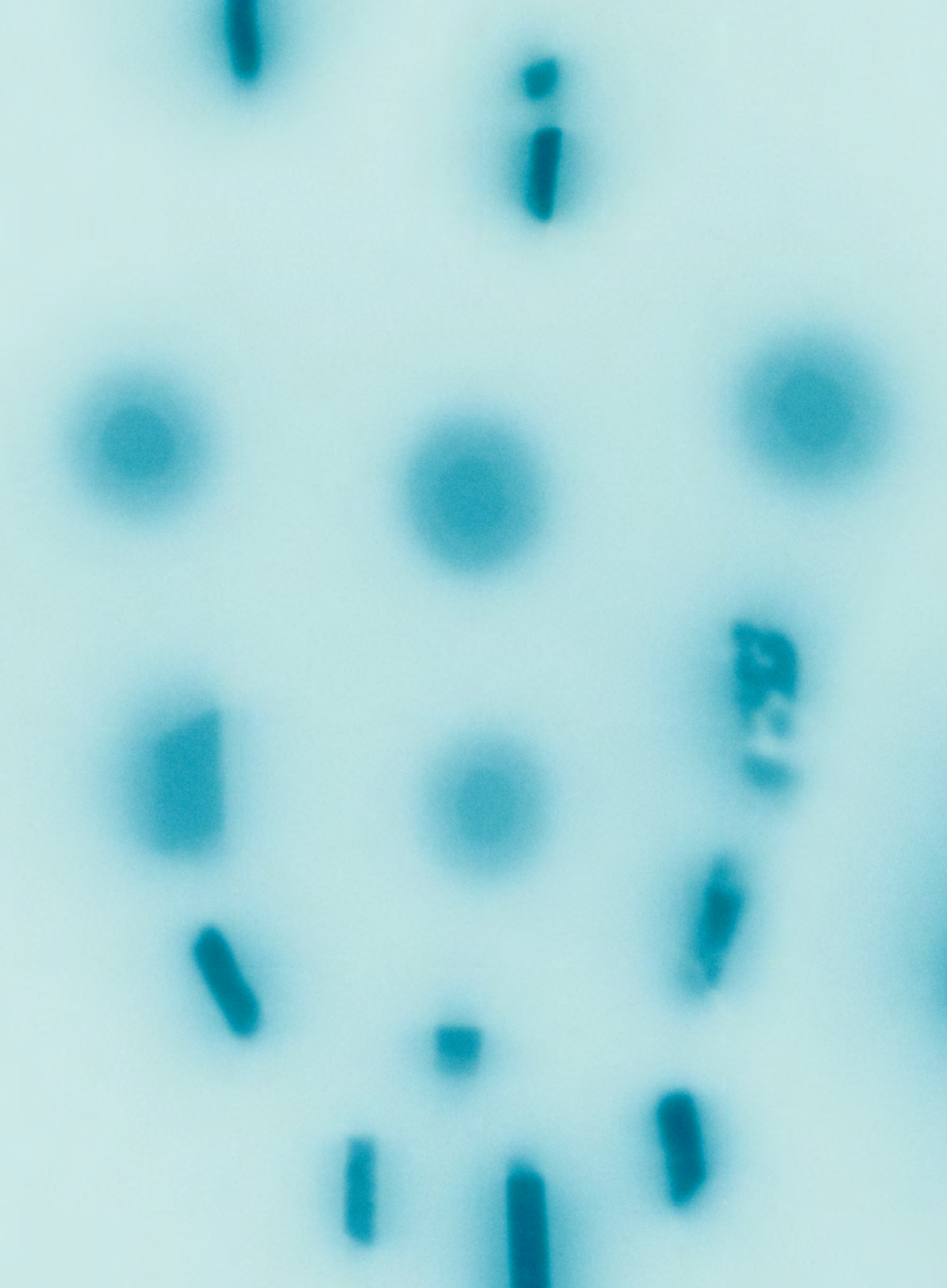
CIFS is a leading global think tank and consultancy. CIFS uses a wide range of research methods, developed over the last 40 years, which include megatrend analysis, scenario planning, risk management, innovation initiatives and strategy development.

Through our partnership with CIFS, we have devised an investment framework that incorporates CIFS' 14 megatrends. The framework – which includes trends such as Demographic Development, the Network Economy, Focus on Health, Sustainability and Technology Development – enhances our thematic equity capabilities and informs the construction and development of our thematic equities strategies such as Water, Robotics or SmartCity.

As CIFS' partner, Pictet Asset Management has access to research into areas not normally covered by the investment analyst community such as changes in societal attitudes and beliefs, the impact this has on the environment and the business sector, and the acceleration of technological development. We are proud to be associated with CIFS and would like to share some of their research with you. We have sponsored this publication and hope you find it as insightful as we do.

### **HANS PETER PORTNER**

Head of Thematic Equities  
Pictet Asset Management





# Content



## Introduction

4

Future of Arts – where and for whom?	6
What Should the Role and Purpose of a Museum Be?	12
Interview: Irini Papadimitriou	14
How Art Exposes Hidden Power Structures	18
Interview: Cornelius Holtorf	26
Interview: Paul O'Neill	34
Harnessing Nature's Blueprints to Respond to Human Challenges	38
(Science) Fiction as Prototyping	46
Caution and Hope - the Twin Necessities of Utopian and Dystopian Storytelling	52
When Art Sets the Agenda for Technological Development	58
NFTs – how do they work?	66
Bringing Futures to Life Through Immersive Experiences	68
Futures at the Royal Danish Academy	80
The Power of Art in Fostering Futures Literacy	86

**Introduction** The pandemic has not been easy on arts institutions and artists reliant on physical exhibitions, performance spaces, or any kind of face-to-face interaction with their audience. Some were able to successfully take a digital leap when faced with the challenge of audiences staying in instead of going out, from Art Basel Hong Kong's physical-to-virtual turn around that featured 2000+ artworks in online viewing rooms, to the CERN Museum's Big Bang experience, viewed through an augmented reality app. Many artists found alternative ways to connect with audiences and galleries through digital channels. The rise of art-on-the-blockchain through NFTs (non-fungible tokens), for instance, has meant that some artists can now monetise their art in new ways. Others, however, were forced into a prolonged period of forced separation from their audiences.

Many are now cheering on the arts, hoping for a quick recovery and a new blossoming post-Covid. From the UN, the OECD, and the European Commission to media outlets like BBC and the Atlantic, many are speculating that we may be entering a golden period – a new 'roaring 20s' – for the arts, characterised by renewed creativity and purpose. The 1920s, of course, were famous for the opulence that characterised the decade's bourgeois culture but also for the rapid pace of social change, technological innovation, and questioning of gender norms and racial prejudices. It, too, came in the tail-end of economic turmoil and a devastating pandemic (not to mention a world war), which had laid bare the fragility of society and the built-in risks in an increasingly global and interconnected world. Many artists at that time felt that things needed to change in one way or the other, and this helps explain the vitality of the decade's artistic output. The comparisons between then and now are many.

While it's impossible to know what form art will take in the future, we can be sure that artists are needed in it. The insistence of art on exploring uncertainty, as well as both the need for and limitations to human agency in an increasingly complex world, makes it invaluable in facing and understanding the interconnected challenges of our time. Art, of course, can also be a lens through which we can explore alternative futures, with its uninhibited form of inquiry being able to operate without many of the constraints that characterise other ways of approaching and imagining the future. While it won't provide us with definite answers, it will help us formulate the right questions.

Through a series of articles and interviews, this publication attempts to showcase how art and the future interrelate in various ways. How, for instance, can art help us understand the possible future trajectories of scientific and technological development? How does art help us to think about the (often hidden) structures of power and agency that affect our lives? Why and how is art (specifically sci-fi literature) being used to future-proof organisational strategy? Why do we need both utopian and dystopian narratives to give us caution and hope for the future? How can art bring futures studies to life through immersive experiences, and what will the future role of museums and cultural heritage be in a more digitalised and interconnected world?

We want to extend a big thank you to Majken Overgaard, Program Manager at CATCH – Center for Art, Design and Technology and Katrine Pedersen, Head of Education & ARKEN art+techLab, who have contributed to the research and investigations into the future potential of the arts for this report.

**We hope you will enjoy reading it.**

# FUTURE OF ARTS

*– where and for  
whom?*

TEXT: TAMIRA SNELL & NICKLAS LARSEN  
PHOTO: PETER LUDVIGSEN  
THE SENSUAL WORLD BY ANDERS BÜLOW AT HOLBÆK ART



In an article for BBC Culture, journalist Devon Van Houten Maldonado asks artists and curators for their perspectives on the world of art in 2040. Among those interviewed are curator Jeffreen M. Hayes, who imagines a future where the boundaries between media and what traditionally has been labelled as art are collapsing. Art, Hayes predicts, will become much more representative of growing demographic shifts with 'more artists of colour, more female identified works and everything in between'. Another artist included in the interviews, Moduo Dieng from Senegal, shares the same sentiment, predicting that 'the future of art is black' and pointing to a future where markets and institutions embrace arts and narratives outside Anglocentrism and the Western canon. Other perspectives included are summarised into the statement that 'artists in the future will wrestle with the possibilities of the post-human and post-Anthropocene – artificial intelligence, human colonies in outer space and potential doom'.<sup>1</sup>

PHOTO: FROM THE EXHIBITION WE HAVE ALWAYS LIVED IN THE FUTURE – A SERIES OF ARTIST-LED DISCUSSIONS CENTERING MARGINALISED GROUPS WHO ARE IGNORED OR ERASED FROM SILICON VALLEY'S VISIONS OF FUTURE TECHNOLOGIES.



These perspectives illustrate and illuminate a continuously developing conversation about who the artists of the future will be and what topics and challenges they will need to grapple with. As this conversation moves forward, we will no doubt continue to see struggles over meaning, representation, and purpose play out in the future. And as the democratic and collective debate relating to the role of art and artists moves into new areas and opens spaces for representation, the conversation will also naturally need to include those viewing, experiencing and consuming the art. A key question in the discussion then precisely becomes this – who is art for, and who will it be for in the future? How is the cultural consumer changing?

## CULTURAL OMNIVORES AND LIQUID CONSUMERS

Until the late 1970s, research on the cultural sector focused on defining cultural organisations and drawing a socio-demographic profile of cultural consumers. It was argued that cultural consumers could be characterised in relation to two main groups: one group was the more highly educated consumers interested in arts such as theatre, classical music, and museums (highbrow art), and the other group was comprised of consumers more interested in popular art forms (lowbrow art).<sup>2</sup> This distinction between high and popular culture relates to sociological and economic theories where consuming art and culture requires various forms of capital, primarily symbolic capital, which varies across socio-economic groups.<sup>3</sup>

In the early 1990s, and with the rise of post-modern currents, the notion highbrow/lowbrow began to give way to

1 Devon Van Houten Maldonado: "What Will Art Look Like in 20 Years?" BBC Culture (2019), [bbc.in/3GlfEzj](https://bbc.in/3GlfEzj).

2 F. Colbert: "The Arts Sector. A Marketing Definition", in Psychology and Marketing (2014), doi.org/10.1002/mar.20717.

3 AS. V. Radermecker: (2021), "Art and culture in the COVID-19 era: for a consumer-oriented approach", SN Business and Economics (2021), doi.org/10.1007/s43546-020-00003-y.



the notion of the cultural omnivore, meaning that cultural consumers were seen as having an increased breadth of cultural taste and a willingness to cross established hierarchical cultural genre boundaries. The work of post-modernist, post-structuralist and de-constructivist theorists have paved the way for how we can see the contours of the (culture and art) consumer both today and in the future, describing modern life and consumption as liquid,<sup>4</sup> a reflexive project,<sup>5</sup> bricolage (recombining whatever is at hand to create something new),<sup>6</sup> and the end of the big metanarratives.<sup>7</sup> In other words, cultural consumption then becomes a matter of liquidity; it is flowing, moving in-between definitions of identity, ways of self-representation, and self-understanding. As scholar Anne-Sophie V.E. Radermecker puts it:

‘The experience deriving from consuming the arts and culture is inherently multifaceted.’

She continues: ‘It can be individual or collective, physical or virtual, active or passive, public or private, on-site or in private environments, open-air or indoor, all these categories not being mutually exclusive. Evidently, art consumption is not only concerned with the purchase of tangible cultural goods (e.g., works of art, books, records, movies, video games, etc.). The industry of cultural services and participation in cultural events are part of the broad consumption experience (e.g., visiting exhibitions, attending concerts, theatre plays, traditional folklore, etc.). When purchasing cultural goods or attending cultural events, people simultaneously seek functional, symbolic, social, and emotional benefits, with different degrees of experience. Those degrees of experience not only depend on the artistic discipline in question and on the nature of the goods and services consumed, but also on the configuration of cultural markets that vary in space and time.’<sup>8</sup>

### **Case: Health as a new dimension of cultural consumption**

When culture consumption become liquid and not confined to specific locations, places and spaces, new dimensions are opened for the cultural consumer. In a future anticipated to be characterised by ageing populations and growing disease burdens, health begins to take form as one of these possible new dimensions of art consumption; already today, scientists have recognised the positive impact of art and culture consumption on well-being and mental health for reducing tension, anxiety, and frustration. Several Nordic countries have even introduced ‘culture on prescription’, which includes visits

4 Z. Bauman: *Liquid Modernity* (2000) and *Consuming Life* (2007).

5 A. Giddens: *Modernity and Self-Identity* (1991).

6 C. Lévi-Strauss: *The Savage Mind* (1966), J. Derrida: “Structure, Sign, and Play in the Discourse of the Human Sciences” in *Writing and Difference* (1967).

7 J.F. Lyotard: “The Post-modern Condition: A Report on Knowledge” in *Theory and History of Literature* (1984).

8 A.S. V. Radermecker: (2021), “Art and culture in the COVID-19 era: for a consumer-oriented approach”, *SN Business and Economics* (2021), <https://doi.org/10.1007/s43546-020-00003-y>.

PHOTO: ANNE-SOPHIE V.E. RADERMECKER

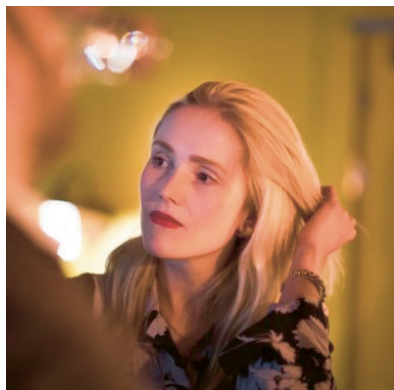




PHOTO: ALBIN LARSSON  
CHELSEA & WESTMINSTER HOSPITAL EXHIBITION (2009)



9 Ibid.

10 C.W. Plus: The Healing Arts", [bit.ly/2ZIMjVa](https://bit.ly/2ZIMjVa).

to museums and other art institutions.<sup>9</sup> Chelsea and Westminster Hospital, built in 1993, was the first UK hospital to lay an *arts and design manifesto* in its very foundations. It has grown to be an evidence-based program of work including all aspects of art and design, which is delivered to support the physical, mental and emotional experience and recovery of patients. By bringing music, performance, and the visual arts into the hospital, Chelsea and Westminster Hospital has created an extraordinary environment and transformed the experience of countless patients, visitors, and members of staff. The impact of the arts program has been manifolded, including positive consequences for patients' recovery – in some cases shortening their stay or reducing their need for pain medication.

Chelsea and Westminster Hospital has implemented their art and culture programme in three different areas of work. The first is 'Arts for All', a performance and participation program reaching 1.5 million people every year including patients, visitors and staff through live performances, at bedsides, in public spaces, and participatory workshops. The second is the 'Design and Environment' programme, which transforms and enhances clinical spaces with bespoke lighting, acoustics, aesthetics, and temperature – all of which, research shows, have a significant effect on patients.

Finally, the 'Future Hospital' identifies, implements, and evaluates the latest digital and virtual technology to benefit patients. Examples include producing bespoke content for virtual reality technology to immerse patients (and distract them from being in a hospital), creating soundscapes, digital moving

artworks, wearable technologies, and robotic companion pets.<sup>10</sup>

The recent pandemic and accompanying lockdowns have likewise underlined the importance of artistic and cultural experiences for our mental health and wellbeing, from people singing from balconies in Italy while being locked down in their homes, to the massive explosion of new digital formats and innovation for art and culture consumption, including virtual exhibitions, online live music festivals, 3D concerts, the opening of material and video archives, and online art sales. This major shift to digital and virtual cultural consumption, which shows no signs of slowing down, allows for new kinds of cultural participation, once again pushing the boundaries of art and cultural consumption.

As a final note, it is worth pointing out that the conversation around art being deployed to actively alleviate societal challenges like loneliness or the burdens on public health systems of course ties into broader discussions of the purpose and role of art in general. This debate is centuries old, going back at least as far as the 19<sup>th</sup> century (and probably further), when the phrase *l'art pour l'art* (art for art's sake) first originated. This viewpoint commits itself to see art as a force on its own, and to see art pieces as results of a process of experimentation rather than as means to fulfil a certain void with meaning or purpose. Like we have in the past, we will discover new uses, applications and mediums through which art can find its way in the future. As we do, the question of how far we should go to 'instrumentalise' it to serve certain ends, instead of recognising it for its intrinsic value, is certain to continue as well. ■

# WHAT SHOULD THE ROLE AND PURPOSE OF A MUSEUM BE?

Museums are not static institutions. The way we think of them and the way they are used has changed since we started systematically collecting and using objects as displays of culture. To this day, the role and purpose of museums is constantly renegotiated by a large group of very different stakeholders such as politicians, foundations, users and interest groups. One of the actors affecting the interpretation of what a museum is today is The International Council of Museums (ICOM), a coalition of 40,000 members representing more than 20,000 museums worldwide. When the ICOM executive board proposed a new definition of the role and purpose of a museum<sup>1</sup> in 2019, it developed into a heated debate among member countries which resulted in a series of resignations, and an indefinite postponement of the vote. What was all the fuss about? Why, exactly, was ICOM's new proposal so controversial?

Some commentators have emphasized how the debate exposed ideological fault lines in the international museum world, with many 'yes' and 'no' voters dividing along progressive and traditional lines, respectively. Some national branches of the organisation, including the US, Australia, and Denmark, welcomed the change. The old definition, the proponents argued, was outdated, and did not speak the language of the 21<sup>st</sup> century or encompass current standards for cultural democracy. Others, including France, Italy, Spain, Germany, Canada, Iran, Israel, Brazil, Peru and Argentina opposed what they argued was ideologically charged posturing with little legal value, which didn't take into account the wide variety and types of museums that exist across the world. The episode came to illustrate and illuminate an ongoing debate about what the role of museums in society is and, additionally, where and for whom the art they contain is created.

### *Old definition*

**A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment.**

### *New definition*

**Museums are democratising, inclusive and polyphonic spaces for critical dialogue about the pasts and the futures. Acknowledging and addressing the conflicts and challenges of the present, they hold artefacts and specimens in trust for society, safeguard diverse memories for future generations and guarantee equal rights and equal access to heritage for all people.**

**Museums are not for profit. They are participatory and transparent, and work in active partnership with and for diverse communities to collect, preserve, research, interpret, exhibit, and enhance understandings of the world, aiming to contribute to human dignity and social justice, global equality and planetary wellbeing.**

**Interview with Irini Papadimitriou, Creative Director, FutureEverything  
by Majken Overgaard & Nicklas Larsen**

# 'I see art-led futures thinking as a form for gentle activism'

Irini Papadimitriou has made a career as a leading curator and cultural creator with vast expertise across museums, art juries, and festivals like Ars Electronica. She draws on interdisciplinary and critical discourse to explore the impact of technology in society and culture, as well as the role of art in helping us engage with contemporary and future issues. We met with her to learn about her curatorial practice, from the Victoria and Albert (V&A) Museum in London to FutureEverything, an innovation lab that uses art and participatory experiences as a lens to explore new ideas for the future.

**PHOTO: RICHARD TYMON**



*Looking back at your decade at the V&A, what has been the most memorable?*

It has to be the initiation of the Digital Design Weekend, which started as an experiment in 2010 and is still going strong today. It started out by bringing different artists who use digital technologies together for an interdisciplinary weekend to address contemporary human challenges. Fast forward to pre-pandemic times, it had more than 25,000 visitors during the weekend taking over the V&A with interactive installations, robotics, performances, workshops, talks, labs, and family-friendly events that provide an accessible platform for new conversations.

*How has it been to shift from the more classic art institution to FutureEverything, an agency that operates without walls across many domains?*

You don't have to be in a building to run into the obstacle of walls. Operating without a box, so to speak, doesn't mean that it's easier. A box tells you what realm you're in, but it also often confines you to continue to do what has always been done. Today, I am lucky to work with a team in a very collaborative and open R&D approach, where we continuously learn and build connections with communities. Recent projects include You and AI in Athens, or Future Libraries in Manchester.

*How do you see the combination of art and technology as a lens to possible futures?*

Both technology and art can be quite alienating and intimidating for many people, so for me it's about turning it around, demystifying these worlds, to enable people to critically explore and ask questions about what is happening around them. I find that it can be less daunting through art if it is presented in an accessible way for people to take part. In that sense, I believe that art and design can open doors to places that might otherwise be difficult for people to enter, such as what the future might look like. There's a quote by Olivia Laing who wrote the book *Funny Weather: Art in an Emergency* that I like: 'We're so often told that art can't really change anything. But I think it can. It shapes our ethical landscapes; it opens us to the interior lives of others. It is a training ground for possibility. It makes plain inequalities, and it offers other ways of living.'

*How can we leverage the transformative role of art in non-art domains?*

By introducing art to spaces where you people don't expect to find it. And I don't mean taking an installation to introduce it in a foreign place like an alien. It's about the conversations that art can initiate in atypical places. When we work with local authorities or the tech industry to explore how AI and algorithms are making decisions about us, who has the power to drive these technologies, who

is excluded and whose lives are impacted, then we use art to deconstruct these ideas to help people think differently.

*Can you give a few examples?*

This place [of mine] is a recent project we developed at FutureEverything with young adults in Greater Manchester. The project gave them space to reimagine their surroundings through art and amplified their voices, so that urban planners could get a better understanding of what is important across the urban fabric. And as mentioned, in Greece I recently curated an exhibition called You and AI, which pretty much took over a public garden with 25 AI artworks to facilitate conversations about the impact of algorithms in the public space and how AI shapes society.

*How was that a way to imagine more inclusive and ethical futures through art?*

Let's be honest, many find that art can be quite elitist, and technology too. So, for the domains to become more inclusive, we need to encourage participation and give people space to use their voice and creativity to imagine and articulate different futures. By taking a step back to look at the bigger picture rather than just being in our own bubble, we often see that there are many realities, just as there are many futures.

*How can futures thinking play an active part in everyone's lives?*

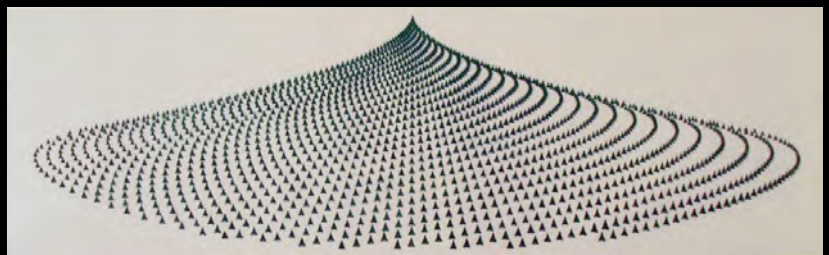
People need to be better at asking questions. We often don't interrogate what's happening around us because things happened in a certain way in the past. This includes realising that the future we might want is not necessarily what we are being fed by a very small group of powerful people. Futures thinking holds the power to foster greater agency as soon as we realise that it is possible to play a role in shaping the future and getting one step closer to where one wants to be. I see art as a way to craft ideas of the future with the public, and in that sense, I see art-led futures thinking as a form for gentle activism.

*How do you see futures shaping art, and art shaping futures?*

Artists have always either depicted futures or presented us with different worlds, narratives, and perspectives in their work. From Thomas More's *Utopia* to the apocalyptic worlds in Hieronymus Bosch's *Garden of Earthly Delights*, or William Heath's satirical illustrations of technological progress in the early 19<sup>th</sup> century in *March of Intellect*, artists have long been interrogating ideas about potential futures. Art questions our obsessions with futurism, while also predicting and inventing new future ideas. Artists, through their work, remind us

how our actions in the present affect future generations in a similar way that current issues or injustices continue from past events. I guess thinking about futures, one would assume positive change, but in challenging times like this it's hard to imagine futures that are better from where we are, so I feel we need art and artists to help us see ways to envision and re-imagine positive futures again. I always think of Agnes Denes' *Tree Mountain* as a beautiful example of work created to benefit future generations rather than the people who actually put the care and labour into it. ■

AGNES DENES' TREE MOUNTAIN  
PHOTO: AMY YOUNGS



# HOW ART

TEXT: KATRINE PEDERSEN

## Exposes Hidden Power Structures



Art sheds light on the hidden narratives embedded in innovation and technology. It shows us that the technologies of today, as well as those of the future, are not value-neutral, but rather value-laden tools. Finally, it helps us to more clearly see the dominant narratives of future exploration and to formulate change strategies. As such, art can help us toward a mental 'de-mapping' of the territories which drawn on our behalf, often without our knowledge.

Before Silicon Valley drew the maps of the internet, there were already many, including local, and different maps and entries online. For example, the state-owned Minitel in France, which provided access to over 25,000 online services, ranging from chat, interactive gaming, and online shopping to the remote control of household appliances; Afronet, which, long before the World Wide Web, offered internet services with a special focus on minorities; and the Mexican network, where Native activists created an internet for the purpose of giving power to marginalised groups. It was founded in response to NAFTA, the free trade agreement between Canada, Mexico, and the United States which entered into force in the early 1990s, and based on the same political and activist visions as Indymedia, a multicultural network that has its origins in London and Sydney.

Indeed, we often forget that the history of digital territories is diverse and permeated by politics. But just as map-making was historically a technological tool used by colonial powers to assert dominance over territories in the physical world, the maps drawn by companies like Facebook, Google, Amazon, and a few others have come to form the backbone of global digital world.

Although no one owns the internet, Silicon Valley has paved its streets and, to a large extent, controls its flow of traffic. According to tech journalists Nicholas Thompson and Fred Vogelstein, they achieved this by refashioning internet in a way that made the act of sharing your personal information online appear safe and non-threatening:

'Humans are social animals. But the internet is a cesspool. That scares people away from identifying themselves and putting personal details online. Solve that problem – make people feel safe to post – and they will share obsessively. Make the resulting database of privately shared information and personal connections available to advertisers, and that platform will become one of the most important media technologies of the early 21<sup>st</sup> century'.<sup>1</sup>

The success of data-based business models of Silicon Valley has meant that the diverse populations of the online world have coalesced around the platforms built by a handful of key providers. In the words of French philosopher Barbara Cassin, 'The internet now speaks one language'.<sup>2</sup>

Whitney Phillips, Assistant Professor in the Department of Communication and Rhetorical Studies at Syracuse University, agrees with that diagnosis. She is the author of the book *You Are Here: A Field Guide for Navigating Polarized Speech, Conspiracy Theories, and Our Polluted Media Landscape* (2021). According to Phillips, the fact that we all use the services of a few major corporations has a kind of colonising effect on the online world – comparable to that of the colonial mapmakers who used technology to assert power in the physical world. As a result, a kind of Americanised monoculture is arising, she says:

1 Nicholas Thompson, Fred Vogelstein: "Inside the Two Years That Shook Facebook – and the World", Wired.com (2018), [bit.ly/3uFKv4j](https://bit.ly/3uFKv4j).

2 Barbara Cassin: *Google Me: One-Click Democracy* (2017).

'The design [of the internet] has roots in an American culture and is based on a certain ideological understanding of what the cornerstones of a digital, global democracy are,' she says.

Take, for example, Mark Zuckerberg's now famous quote: 'I don't think it's right for a private company to censor politicians or the news in a democracy.' To this one might reply: 'which democracy?' The question would be warranted, considering that 90% of Facebook's global users live outside the United States.

Zuckerberg's statement is even more interesting when viewed in light of recent news of Facebook decided to change its algorithm to do precisely that – reduce political content in its users' news feed.<sup>5</sup> The social network actively selects what we are exposed to when we browse. It's always been that way, and whether that qualifies as censorship or not, the mechanisms by which this selection functions are hidden from the user. At the end of the day, Facebook – not our democratic institutions – get to decide what content falls in – and outside the realm of acceptable public discourse.

Phillips calls this one-way transmission of cultural values through the global web a 'network crisis' and compares it to the climate crisis, where pollution in the physical world moves seamlessly across geographical boundaries. The only difference is that the online network crisis is by design, based on systems made to spread information in the fastest possible way. Thus, it does not spring from a faulty system, but from a system that works exactly as intended.

## POST-INTERNET

### – deconstructing tech narratives

Whether one agrees with Phillips stark

diagnosis or not, it can hardly be disputed that social media and other of digital networks of power and influence greatly impact our lives, although sometimes in hidden ways. Art can be a tool used to expose them – but how?

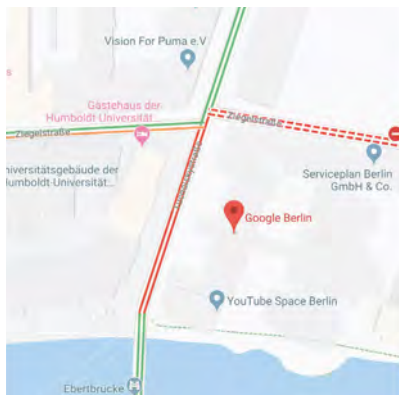
'Post-internet', a contemporary art movement influenced by internet culture and aesthetics, aims to do this by challenging our understanding of digital territories, networks and the way we map and structure them. Think of it as a kind of street art for the internet.

Case in point: in 2020, the Berlin-based artist Simon Weckert staged a happening where he transported 99 second-hand smartphones in a handcart to generate virtual traffic jams. In Google Maps, Weckert's smartphone-filled cart appeared as a massive pile-up because a mass of smartphones in a compressed space is interpreted by Google's systems as a sign of congestion, and so Weckert, simply by dragging his cart through the city, would turn 'green' streets 'red' on Google's navigation service. By tricking Google's algorithms, Weckert would effectively manipulate the flow of traffic in the physical world.

More than just being a creative and entertaining stunt, Weckert's work highlights the blindness that arises when we think of data as objective and interpretation-free. He shows us that maps are not as neutral as we might think but rather systems of power that shape our impression of and interactions with reality. Weckert describes his work as driven by and interest for 'the interaction between how technology shapes human behaviour, and now, how human behaviour can, in return, shape technology.'

Bill Posters and Daniel Howe are two other artists whose art aims similarly

5 Aastha Gupta:  
"Reducing Political  
Content in News Feed",  
Facebook (2021),  
[bit.ly/3mkftL5J](https://bit.ly/3mkftL5J).



to question our blindness to power systems. A series of five AI generated 'deepfake' artworks was created in 2019 and designed to 'hack and subvert the power of celebrity influencers' as the two artists put it.<sup>4</sup> One video features Mark Zuckerberg announcing that he is 'one man with total control of billions of people's stolen data, all their secrets, their lives, their futures', before concluding that 'whoever controls the data, controls the future'. The series, called *Big Dada*, contains the world's first contemporary art deepfakes, created using AI and machine learning technologies to interrogate the power of computational propaganda. The Zuckerberg deepfake, which made its way to major global news, TV and radio outlets across the world, forced Facebook and Instagram to release official statements and question their internal policies regarding deepfake videos on their platforms.

## THE MATERIAL FOOTPRINT OF DIGITAL TECH

Beyond exposing the hidden networks of power and influence embedded in online platforms, art can highlight the connections to the physical world made by technologies we tend to think of as only existing digitally.

During his keynote address at the Worldwide Developers Conference in 2011, Apple CEO Steve Jobs unveiled the iCloud, Apple's new wireless data sync service: 'Some people think the cloud is just a hard disk in the sky', Jobs told the attendees. 'We think it's way more than that. And we call it iCloud'.

Of course, the iCloud, despite what the name suggests, in anything but a hard disk in the sky. But because the infrastructure that powers it is hidden

from plain view, one could almost get the impression it doesn't exist. This is true for much of our digital technology; the same can be said about a lot of consumer electronics which, after having lived out its use, typically ends up on landfills out of sight (and out of mind), often in developing countries.

The British artist Louis Henderson, who works with exploring the future material trace of digital pollution, exposes this sleight of hand in his film *All That is Solid*. Here, the artist shows the very material and physical reality of tech waste and pollution for people situated on the periphery of the tech industry and Western consumer culture, in this case Ghana. In what the artist himself calls a 'technographic study of e-recycling and neo-colonial mining', the video constructs a *mise-en-abyme* (placing a copy of an image within itself) as critique in order to dispel the myth of the immateriality of new technology – thus revealing the mineral weight with which the cloud is grounded to its earthly origins. Apart from showing how the production and consumption of tech affects the climate and less privileged populations across the world, it is also an attempt to deconstruct metaphors in tech lingo – in this case, the 'cloud' as something immaterial – and expose the hidden structures of the digital economy and how they connect to global systematic inequalities.

Amalie Smith is another artist whose work relates to creating new mental maps of the future by showing the interconnectedness of nature, technology, and privileged consumption. Her work *51 Years after The Last Oil* (*51 e.DSO* (2018)) is a dystopian tale told through AR and sound, and set in a future with accelerated climate change and de-

4 Bill Posters:  
"The Zuckerberg  
Deepfake Heard  
Around The World"  
(2019), [bit.ly/3a5xFCQ](https://bit.ly/3a5xFCQ).

population. The setting is the Danish art museum ARKEN, which in Smith's future scenario has been surrounded by dangerous unmanned drones and mutated animals. ARKEN is no longer the museum we know today, but a storage site for objects worthy of preservation such as art. The work asks what kind of art should be kept for posterity, how it should be categorised, and how the history of mankind can be communicated to a future without people.

In conclusion, can art redraw the maps drawn on our behalf by others? It can certainly help us do it. In the words of author Adrienne Marie Brown, 'the world we live in right now is someone else's imagination'. Art can help us find a way out. ■

51 YEARS AFTER THE LAST OIL  
(51 E.DSO (2018)) BY AMALIE SMITH  
PHOTO: DAVID STJERNHOLM



**'The world we live in right now is someone else's imagination. An imagination that told us white is superior, men are superior, being straight is superior. We are in imagination-battles when we choose to live our own truths which go against those contracts. When we deconstruct these concepts in our lives, in how we love, in how we interact with other people, we are already imagining other futures into existence with every choice we make that is about being our whole unbridled, unfettered, and post-oppressed selves.'**





PHOTO: THE LAURA FLANDERS SHOW

*Post-nationalist writer,  
doula, activist, and feminist*

**ADRIENNE MAREE BROWN**

**Interview with Cornelius Holtorf, UNESCO Chair in Heritage Futures  
by Nicklas Larsen**

# **HERITAGE FUTURES: An Intergenerational Perspective**





1 UNESCO:  
"Index of development  
of a multidimensional  
framework for heritage  
sustainability",  
[bit.ly/3zRX0dP](https://bit.ly/3zRX0dP).

What objects and stories from the past and present should we leave behind to future generations, how do we decide what to (and not to) inherit from the past, and who can or should do this remembering on behalf of generations yet to be born?

These are the kinds of difficult but vital questions that arise when we attempt to make systems and rules for how we preserve our common *cultural heritage* – defined by UNESCO as ‘a product and a process, which provides societies with a wealth of resources that are inherited from the past, created in the present and bestowed for the benefit of future generations’<sup>1</sup>.

Although some might associate the work being done by those working to preserve cultural heritage with a kind of static custodial archiving of old objects and artifacts, the field – both its theoretical and practical dimensions – is undergoing significant shifts today.

As a professor in archaeology, Cornelius Holtorf holds a UNESCO Chair in Heritage Futures, and he recently co-edited (with Anders Högberg Professor of Archaeology at Linnaeus University) the book *Cultural Heritage and the Future* (2021), which seeks to put this emerging field on the radar for a wider public.

Holtorf describes current thinking in the field of cultural heritage as driven by the preservation paradigm, wherein **‘it is challenging to talk about cultural heritage without mentioning potential future threats to preservation like war, political, ethnic, and religious conflict, illicit trafficking of cultural property, deterioration, and climate change’**.

Yet risks like these, Holtorf says, also make it clear why the future and heritage are so strongly connected. Indeed, they are the reason why cultural heritage is often protected, both through national legislation and via UNESCO’s World Heritage Convention, which defines the kind of natural and cultural sites that can be considered for inscription on the World Heritage List.

Yet despite all the good it does in preserving human legacy for future generations, this kind of stewardship of the past also comes with challenges. Holtorf points to how acting with the best intentions according to present preferences and beliefs may not always align with those of the future:

**‘This is a highly disputed area, which we can navigate by trying to minimise presentism, which means to assume that what we believe today is going to be the norm for decades or longer’, he says. ‘To curb that, we can borrow the long view from foresight to imagine impacts of future transformations such as climate change or increased migration to start questioning present heritage practices’.**

As examples of how our practices and beliefs around cultural heritage may change in the future, Holtorf points to trends like population growth, urbanisation, and migration and how these might impact our values – and thus also our priorities when it comes to preservation in the future:

**‘Heritage futures questions many things, including notions of land ownership linked to cultural heritage. As populations grow and migrations increase, land may become more precious in the future, with more diverse groups needing to make a living and a place to feel at home’, Holtorf says. ‘We also see that the reliability of demographic trends like ageing,**

**urbanisation, and better health is relatively stable for the foreseeable future, and as more of us will live in cities, future heritage matters will increasingly become urban matters. Maybe not forever, but for a time. Considering this, we can question the heritage sectors' strong focus on conserving stone walls and historical buildings in the countryside'.**

For Holtorf, a key set of questions arises from this. These include how we can change nationalistic perceptions of heritage ownership into concepts of shared heritage in the future; how heritage can connect more people from all walks of life, particularly the new and urban generations; and how, in contemporary circumstances, uses of 20<sup>th</sup>-century heritage can respond to memory loss and imaginatively engage across generations.

### **(DE-)COLONISING THE FUTURE**

In his recent co-edited book, Holtorf describes three common approaches to preserving for the future. The first approach rests on the idea that the future is a continuity from the past, with traditions being handed down through generations. The second approach considers the risk of a collapse in the future, which means that we cannot continue as usual. The third approach to preserving for the future is oriented towards gradual change, with constantly evolving heritage lists being an example of how some things can be categorised as important until they are not and something new takes their place.

**'There's essentially no right or wrong, and there are variations of the mentioned future preservation perspectives that may fit given circumstances better', Holtorf says. The point he strikes is that 'we need to discuss heritage more openly rather than assume that everything will continue, and to remember to question if perceived present value really is future value as well'.**

To Holtorf, 'decolonisation' is a good example of an agenda with strong headwind throughout the cultural sector today, which has given rise to many initiatives seeking to change preservation practices. Museums in former colonialist nations are under pressure to return the spoils of empire and deliver back ancient artifacts to their places of origins. Recently, the German Minister of State for Culture announced that 1,130 bronze artefacts that had been looted from Benin (located in modern day Nigeria) and kept in German museums would be returned to the African country to address the wrongs of the colonial past.

**'If this trend continues, it will indeed be interesting to see what's eventually going to be left in institutions like the British Museum',** Holtorf remarks. Yet despite our current fixation on issues relating to decolonisation, he explains, there is no guarantee that it will last into the future.

**'For all its merits, decolonisation might mutate into something else, as our big issues tend to do every 10-20 years, and in that sense, decolonisation is perhaps more of the present than the future',** he says.

**'What we should avoid as much as possible is to colonise the future',** he continues. **'This means making decisions today that will predetermine what will have to happen or what cannot happen in a given area in the**



**future. It's comparable to building structures today that are difficult to remove or repurpose or that contaminate huge amounts of land in ways that are very difficult to clean up again. But it's more complicated than that, and of course, colonising the future can be a positive thing as well',** he explains.

How so? As an example, Holtorf points to protecting future generations from exposure to nuclear waste or pollution as a form of positive colonisation. **'We can't completely avoid colonising the future, but we must be aware of what we leave behind to ensure as much opportunity and possibility in the future as possible',** he says.

## REVIVING THE PAST FROM THE ASHES

Like many other fields, the heritage sector is undergoing great changes due to digitalisation, with new technologies making it possible for the past to come alive in ground-breaking ways.

On 2 September 2018, a devastating fire destroyed Brazil's oldest science museum, Museu Nacional in Rio de Janeiro. Both the museum building along with 90% of the approximately 20 million artifacts housed there were demolished in the blaze. The objects lost included folk art, Indigenous artefacts, and biological specimens.

While the horrible event came with terrible loss, Holtorf highlights the opportunities it also presented for the Museum: **'I saw it as an opportunity to renew practices and thinking that could become more valuable, an opportunity to transform the way we look at heritage today, and to rethink the museum in digital and virtual ways',** he says.

And digital and virtual tools are indeed being deployed to revive and preserve the memory and experience of the Museum. In 2020, a group of designers and artists joined forces to restore parts of the lost collection. By using 3D scans of the artefacts and digital fabrication techniques like 3D printing, art pieces could be recreated using the ashes of the former collection and building as printing material.<sup>2</sup> Additionally, towards its expected reopening in 2022, the Museum now offers a virtual walk around via Google Street View so visitors can see how it looked before it was destroyed.

<sup>2</sup> Lizzie Crook:  
"Museu Nacional uses  
3D-printing to recreate  
lost artefacts", *dezeen*  
(2020), [bit.ly/3kK2svd](https://bit.ly/3kK2svd).

## LOW- AND HIGH-TECH TOOLS TO CONSERVE THE PAST

As the fire in Brazil reminds us, preservation efforts have to factor in destruction and collapse – both on a local and global scale. Digital preservation in online archives is a way to future-proof cultural heritage that might otherwise be lost in such scenarios. Yet this approach, as Holtorf points out, comes with a new set of challenges:

**'With the emergence of data centres, it is not controversial to talk about the carbon dioxide emissions that data stored by big tech companies, organisations and individuals is causing collectively. If you add this up, it's currently twice as much as global air travel. As the digital world grows, it is perhaps only a matter of time before we will have to**

**limit what is being preserved digitally, or reduce size, quality, and perhaps alter resolutions in all the online archives for environmental purposes. This would undoubtedly have a great impact on personal, industrial, creative, and artistic practices. Just imagine a future with limited online storage per capita’.**

Holtorf is involved with The Memory of Mankind (MOM) project, which he explains seeks to combat a phenomenon known as ‘Global Alzheimer’:

**‘Today, the predominant way to publish is online. Stories reflecting our present such as blogs and online-journals will vanish comparatively fast. The digital age bears the risk that future generations may be able to recall events prior to the 21<sup>st</sup> century, but not their most recent past’**, the initiative states on its website.

MOM consists of global contributions and is for instance seeking to store 1,000 books from our time in an active salt mine in Austria. Conserved in ceramic data carriers, analogue text and images are kept for unlimited intervals of time, as a gift to deeper future civilizations far beyond our age; the point is to leave more than nuclear waste and coke-cans behind. The universality of the internet, Holtorf believes, is not enough of a safeguard: **‘The way we perceive the internet as an eternal archive indeed has its limits’** he says.

In spite of this, digital tools, if used right, can be incredibly useful in ensuring we remember critical historical events that are in danger of slowly being washed away from the collective memory. Holtorf points to the Holocaust in which millions of people perished as an example of such an event, and he explains what is currently being done with digital tools to make sure the memories not only live on in history books.

A new exhibit combines the testimonies from thousands of Holocaust survivors in the largest audio-visual collection of its kind. It is composed of 50.000+ WWII era testimonies of Jewish survivors, political prisoners, Sinti and Roma survivors, Jehovah’s Witness survivors, survivors of eugenics policies, and LGBTQ survivors, as well as rescuers and aid providers, liberators, and participants in war crimes trials.<sup>3</sup> The creator of the exhibit, Heather Maio, wanted to make an interactive experience where conversation could take place. While she was met with push-back, with many fearing it could cheapen or even lead to a ‘Disneyfication’ of the Holocaust, many readily signed up to share. The first participant in the project was Pincas Gutter, a survivor of six Nazi concentration camps. His digital rendering can now be met at museums in Dallas, Indiana, and Illinois for a conversation about his memories from the concentration camps, where he was sent to at the age of 11.

We are now also seeing digital renderings of dead actors and aging music stars (like ABBA) appearing in new settings in film or on stage. To Holtorf, such cross generational perspectives give rise to a range of philosophical and ethical questions, including ones that touch on the very essence of being conscious human beings:

**‘It makes you wonder what it means to be a person’ he says. ‘Is it defined by consciousness, by what you look like and how you move with your body, or the things you used to own? How do we reconcile these types of**

3 CBS News:  
“Artificial Intelligence  
Project Lets Holocaust  
Survivors Share Their  
Stories Forever” (2020),  
cbsn.ws/3oi3YH0.

**digital immortals living-on in an appreciated context with how hard it is to die online for all of us, with some Facebook profiles of the diseased turning into virtual tombstones?’**

The preservation of heritage, clearly, is about more than keeping objects from the past intact. It is about preserving the memory of ourselves and our ancestors as well:

**‘Things and people are still with us as long as we remember them. You may have your father’s nose; you may even laugh like him. I have a painting of my great grandfather. I’ve never met him, but he’s still here. I don’t know very much about him, but he hasn’t died, as his memory is still around.’ ■**

**'What we should avoid as much as possible is to colonise the future. This means making decisions today that will predetermine what will have to happen or what cannot happen in a given area in the future. It's comparable to building structures today that are difficult to remove or repurpose or that contaminate huge amounts of land in ways that are very difficult to clean up again. But its more complicated than that, and of course, colonising the future can be a positive as well.'**



MEMORY OF MANKIND TOKEN OF HALLSTATT  
PHOTO: MARTIN KUNZE



**Interview with Dr Paul O'Neill, Artistic Director at PUBLICS**  
**by Majken Overgaard & Nicklas Larsen**

# Dissolving the Curatorial Power

What happens when audiences become a part of the curatorial process, and how can curatorial power be dissolved in the future? To find answers to these questions, we look to PUBLICS, a Helsinki-based curatorial agency punching above its weight. Under the creative direction of Paul O'Neill, PUBLICS explores the relationship between critical social thinking, contemporary art and 'publicness'. We met with O'Neill to learn about his outlook for the future of art intuitions, audience involvement, about breaking down boundaries, and how the library he took over four years ago became the centre through which a new type of art organisation would emerge.





*How is PUBLICS different from other participatory art initiatives?*

Co-creation sessions on a given topic, or an exhibition, often happen within confined and controlled spaces within established institutions. PUBLICS differs by not only being participatory, but by continuously renegotiating its space with the audience that essentially gets to impact and develop the institution. As such our curatorial programme is created alongside the evolution of PUBLICS itself through, for instance, *Parahostings*, where we provide space for other people, bodies, and ideas, and allow ourselves to be taken over. We might help with the programmes or funding but it's the Paraguests' projects.

*How do you facilitate such conversations?*

When we commission public art, we do it in a way that engages the audience to transcend the so-called 'art world' while still being in dialogue with it. This could take the form of listening or reading sessions or conversations about fearful futures where something meaningful emerges – for instance, centred around questions of climate crisis, increased volatility around national borders, the refugee crises, and how COVID exacerbated economic and social divisions.

*Would it have been possible to dissolve the curatorial practice if you weren't an artist yourself?*

For me, the possibility of contemporary art playing political and social roles within culture was always important, regardless if I was an artist or a curator or a writer. It's the constant questioning of what constitutes the role, function, and position of the art producer, the exhibition producer, organiser, facilitator, author, and so forth. Like art education often does, mine emphasised the learners participating in a way that enables education in more informal and challenging ways, so when I had my studio-based practice, I was very committed to blurring boundaries and sometimes even breaking them down completely.

*What does the future hold for art and its audiences?*

It's important to acknowledge that future generations are already here, cohabiting and living amongst us. What we need to do is to use our skills, knowledge, networks, and expertise, to engage with those young people who we at PUBLICS call the *public of the present future*. What are the needs of the current generation of young people between 17 and 23, and what is it that they're interested in?

*How do you engage future generations at PUBLICS?*

We are currently developing a Youth Advisory Board of teens, where the public of the present future will be paid to curate with PUBLICS and participate in the

development of the institutions and its programmes. We also organise an intersectional and transdisciplinary festival called *Today is our Tomorrow* in a mix of discussions, talks, workshops, installations, screenings, events, performances, DJ sets, curatorial projects, and live music across interconnected venues. This festival is a very important aspect of how we draft professional coalitions, how we think about who the *future public* is, and how we cater to the future audience for art.

*From your perspective, how are traditional art institutions struggling with this?*

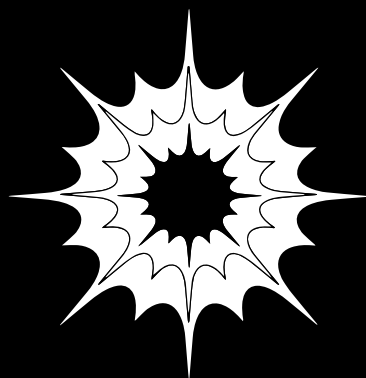
There's always been this contradiction within contemporary art, where the idea of artistic autonomy exists on two levels. At one level you have art, which is the romantic tradition, separate from the world. At the other level you have another version of artistic autonomy, where art is completely dissolved into the social fabric or becomes political currency of the world. I think we're still struggling with these two ideas. For art to be vital and important and urgent to this generation it must compete with video games, social media, noise, popular music, right wing rhetoric, consumer culture, hyper capitalism, and fashion. But rather than being in competition, all these things are ultimately still part of contemporary art in different ways.

*How do you see the future art audience being digitally influenced?*

I subscribe to Legacy Russell's (American writer and curator, ed.) idea that there is a glitch between the digital self and the physical, embodied self. But this glitch is not a separation anymore. We need to understand how the online identities of young generations are integral to how they see themselves in terms of identity politics, and their relationship with the world. It's tricky to capture their attention. The time young people can spare is scarce because they're very busy and have their own take on what constitutes creativity – perhaps they often find that traditional art institutions are not for them.

*What does the future art institution look like to you?*

It's inclusive and transdisciplinary. The moments of education, of display and of participation, are equal. It supports diverse practices, is less white, and certainly queerer and more feminist. It listens more than it speaks and when it speaks, it's aware of how it speaks for and on behalf of others. It works in contrast to continuous monoculture by constantly being in dialogue with others than its patrons and ticket holders. It sees beyond the wealthy and the people attending to large mega exhibitions, who often do not view the experience as being something which can transform, change, or challenge the culture they live in. ■



# Harnessing Nature's Blueprints to Respond to Human Challenges

TEXT: NICKLAS LARSEN  
PHOTO: LA SAGRADA FAMILIA

While human creativity and imagination have been fueled by nature since ancient times, using nature's blueprints has become an increasingly widespread approach to contemporary art, science, and technology alike. Though the aims and work methods of these domains are widely different, they all share a propensity for looking to natural processes and patterns for inspiration in formulating responses to human challenges in sustainable ways.

While we long have studied and imitated nature's structures, no formal terminology existed to encapsulate the approach before the 1960s, and it wasn't until the late 1990s that the term 'biomimicry' (a portmanteau of 'bios' and 'mimesis' (or mimicry/imitation)) was coined. The term first appearing in the book *Biomimicry: Innovation Inspired by Nature* (1997), written by Janine Benyus, co-founder of the Biomimicry Institute.

In the realm of science and technology, examples of biomimicry in action include the study of birds to make human flight possible,<sup>1</sup> Japanese bullet trains inspired by the kingfisher, and underwater sensor technology that imitates the frequencies used by dolphins to communicate effectively in deep waters.<sup>2</sup> Many giants of art history, including Gaudi and Da Vinci, have also famously taken inspiration from nature.

In fact, an entire art movement from the 1930s, *biomorphism*, was famous for modeling artistic design elements on naturally occurring patterns or shapes reminiscent of nature and living organisms.<sup>3</sup> It can be observed in the Sagrada Família Roman Catholic church in Barcelona, Spain, the interior of which is designed to mimic tree trunks and branches.<sup>4</sup>

Evidently, biomimicry in art is much more than just painting trees or sculpting animals. Today, with climate change having become the foremost challenge facing humanity, the exploration of biological structures, material properties, cycles, and dynamics rooted in the laws of nature can be a way for art to highlight pressing issues like sustainability, regeneration, solidarity, and community. We present a few examples below.

## MATERIAL ECOLOGY

The Israeli-American professor of media arts at MIT Media Lab, Neri Oxman, fuses biology, technology, and nature to explore solutions for issues we often don't yet know we will face in the future. Along with MIT's Mediated Matter group, Oxman combines sophisticated technology with tools from nature<sup>5</sup> to develop new design possibilities for the future. Oxman, whose works have been on display in art institutions across the globe, is quoted for saying that 'novel technologies start out as art forms'.<sup>6</sup> At The Museum of Modern Art in New York, her 2020 exhibition 'Material Ecology' explored how to extract silk without destroying the cocoons of silkworms through a bio-digital design that enhances the distribution of over 6,500 worms while they metamorphose. 10-days of co-creating between silkworms, humans, and technology resulted in a silk pavili-

1 [medium.com/@olivia.sanchez/the-biomimicry-revolution-innovation-inspired-by-nature-4b166ff72824](https://medium.com/@olivia.sanchez/the-biomimicry-revolution-innovation-inspired-by-nature-4b166ff72824).

2 [modernartoxford.org.uk/biomimicry-blog-johanna](https://modernartoxford.org.uk/biomimicry-blog-johanna).

3 [en.wikipedia.org/wiki/Biomorphism#History](https://en.wikipedia.org/wiki/Biomorphism#History).

4 [medium.com/copenhagen-institute-for-futures-studies/building-futures-with-josef-hargrve-dc262b4464c1](https://medium.com/copenhagen-institute-for-futures-studies/building-futures-with-josef-hargrve-dc262b4464c1).

5 [ft.com/content/143dcdde-afad0-11e8-8d14-6f049ad06439c](https://ft.com/content/143dcdde-afad0-11e8-8d14-6f049ad06439c).

6 [arts.mit.edu.modeling-mimicry](https://arts.mit.edu/modeling-mimicry).







on, made up of threads longer than the diameter of the earth. It can be considered an example of how we might effectively and sustainably do interspecies collaborations in the future.<sup>7</sup>

## EVENT HORIZON

The contemporary Argentinian artist, Tomás Saraceno, is known for proposing new, more sustainable ways for humans to inhabit their environment by linking art, life science, and the social sciences. For more than a decade, Saraceno has been working in a junction of natural structures. In what the artist himself calls 'an unorthodox collaboration with cosmic webs, the air, spider-webs and indigenous communities', he imagines a new practice of solidarity and a world free from what he describes as 'CECPF', which stands for carbon, extractivism, capitalism, patriarchy and fossil fuels.<sup>8</sup> His installation 'Event Horizon', located in Copenhagen's historic water reservoir Cisternerne, is experienced by boat and designed to resemble a future marked by a refiguration of Earth's water system. While being essential to life itself, water becomes more foe than friend due to rampant natural disasters. Change is inevitable, but as we stand at the edge of Event Horizons (the edge of black holes threatening to suck us in), Saraceno asks 'what will our new normal be?' and suggests that the only way we will survive is if this new normal is anything but the past.<sup>9</sup>

## SYMBIOTIC ECOSYSTEMS

'We Are Museums' is an expanding network that aspires to shape the future by empowering a global museum community of changemakers. Referring to the 18<sup>th</sup> century's Enlightenment, which

advocated for reasoning as a source of knowledge, the network draws parallels to the Anthropocene, and how we once again need new sources of knowledge, inspiration, and leadership.<sup>10</sup> In a research project launched in collaboration with Biomimicry Academy, the network explores how cultural institutions of the future can imitate nature to foster social innovation. Their research has explored how the properties in a forest ecosystem could act as a guiding principle for how museums can connect with their neighbors and foster co-creation,<sup>11</sup> with a guiding principle being that the institutions become more 'porous and open and not merely big blocks of stone' as We Are Museum's founder Diane Drubay explains it.<sup>12</sup>

What do these examples tell us? For one, they say something about the transformative power of art and its ability to promote awareness, provoke dialogue, and inspire action. They also remind us that the structures and ideas we need in the future often already exist in the natural world. ■

7 [oxman.com/projects/silk-pavilion-ii](http://oxman.com/projects/silk-pavilion-ii).

8 [studiotomassaraceno.org/about](http://studiotomassaraceno.org/about).

9 [studiotomassaraceno.org/event-horizon/](http://studiotomassaraceno.org/event-horizon/).

10 [wearmuseums.com/about](http://wear museums.com/about).

11 [wearmuseums.com/towardsasymbioticesystematthemuseum](http://wearmuseums.com/towardsasymbioticesystematthemuseum).

12 [bespokecph.com/futureculture](http://bespokecph.com/futureculture).

PHOTOS: COURTESY OF NERI OXMAN AND  
THE MEDIATED MATTER GROUP









**'As we stand at the edge of Event Horizons (the edge of black holes threatening to suck us in), Saraceno asks 'what will our new normal be?' and suggests that the only way we will survive is if this new normal is anything but the past.'**

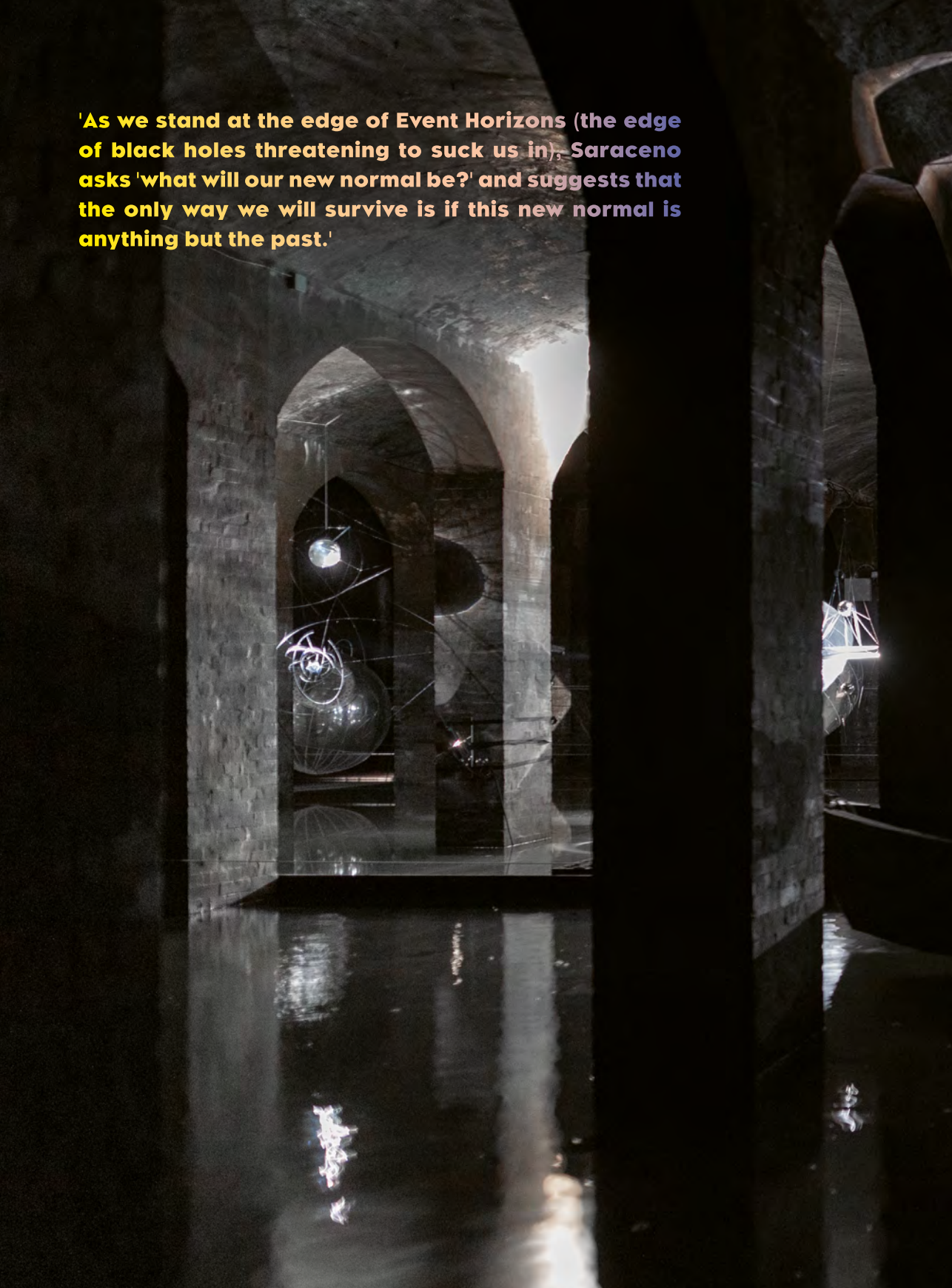




PHOTO: TORBEN ESKEROD



# Imagining the Future – the Danish National School of Performing Arts

The National School of Performing Arts in Denmark has launched its new Master of Fine Arts in Performing Arts with the Copenhagen Institute for Futures Studies as a proud partner. Emerging artists are enrolled to “Imagine the Future” and explore the current circumstances influencing the changing socio-cultural and demographic profiles of audiences and their communities. The Institute will act as an anchor of applied futures studies methods in the creative and artistic fields. Through workshops, talks, guest lectures, futures literacy laboratories and artistic productions, we will equip and inspire the artists to actively contribute to the creation of new stories that catalyse society to engage with and participate in new adventures, and in co-creating the future.





PHOTO: VERONIKA VIDO



# (Science) Fiction as Prototyping

TEXT: CASPER S. PETERSEN

The poet Oscar Wilde famously believed that the things we find in the world are not really there. Instead, they are things that art has taught us to see. Although there had always been fog in London, Wilde said, the city's residents only noticed its beauty and wonder because 'poets and painters have taught the loveliness of such effects'. Put differently, art shapes our view of the material world surrounding us – including what we notice, value, or ignore.

The same is true for how we view and give shape and colour to the future, perhaps even more so than the material present. Unlike fog in London, the future doesn't exist, and the concept of the future(s) being multiple rather than singular is not a fact of nature, but something that futurists have taught us to believe.

Yet futurists are rarely the ones who get to decide how our conceptions of these different futures are given colour and shape. As much as they might like the opposite to be true, they don't have that kind of influence on the collective imagination. Art, on the other hand, does. Ask anyone to describe the future and most likely, their answer (whether hopeful or pessimistic, or a mixture of the two) will include predictions of technologies and concepts that have been explored in fictional worlds. Parallel digital dimensions, alien visitors, radical social change, humanoid replicants,

utopian societies, or dystopian breakdowns – whatever their hopes or fears are, it is likely that their ideas, or at least parts of them, were informed by creations of art and media.

When it comes to the future, art rarely predicts, but it has a profound ability to expand our understanding of the realm of possibility. And the most impactful of these future images have incredible staying power in the collective psyche. While this is true for a lot of art, few art forms have bent our conceptions of what is possible as consistently and decisively as science fiction, a genre that is situated between current reality and future possibility.

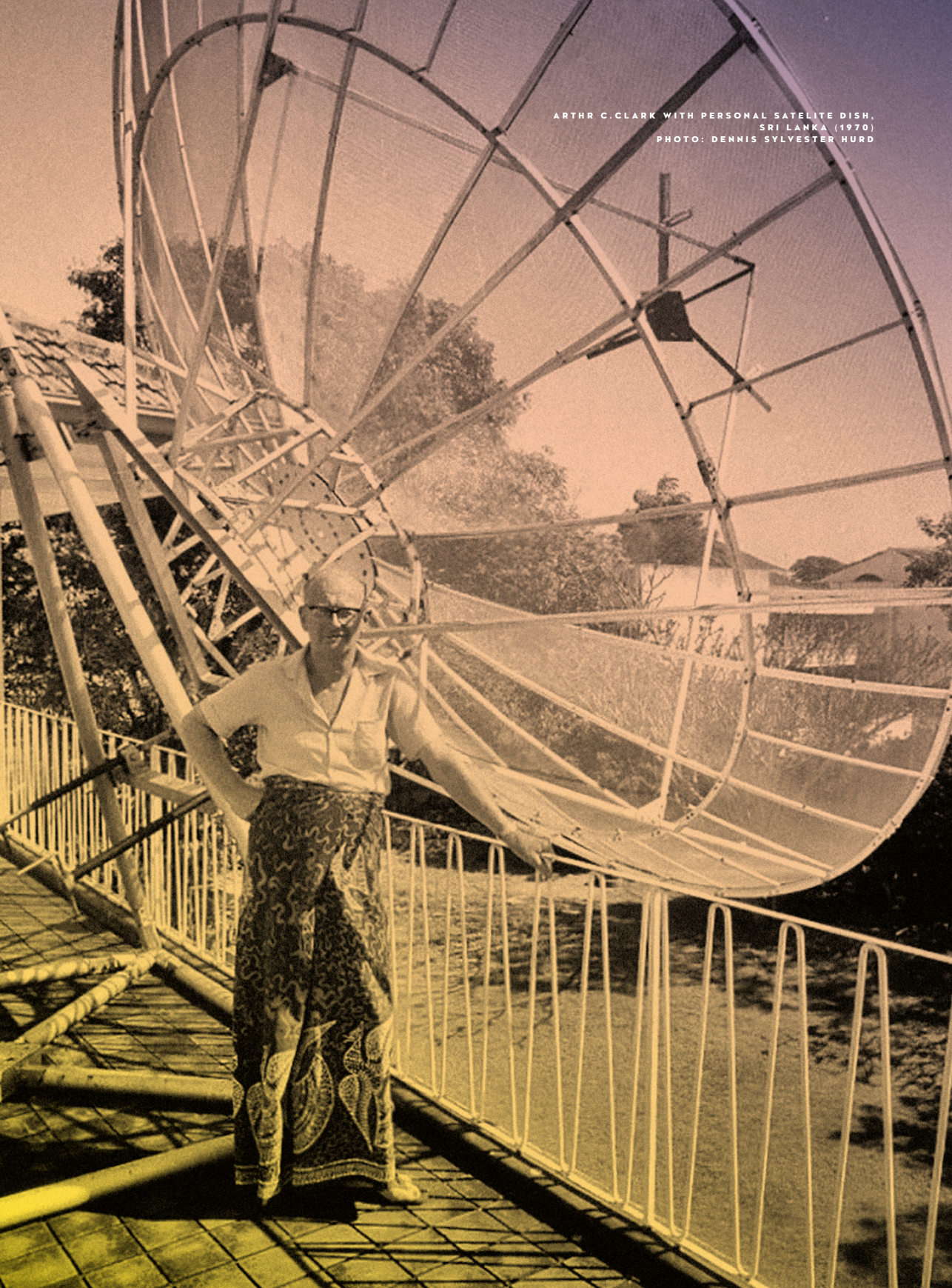
The examples of this dynamic in action are many. Tim Berners-Lee is famously said to have found inspiration for his invention of the World Wide Web in science fiction author Arthur C. Clarke's short story *Dial F for Frankenstein*, in which a network of telephones develops consciousness and takes over the world. Supposedly, reading the story as an adolescent created such an impression on Berners-Lee that he developed an interest in technological networks which persisted into his adult life, where he would eventually enrol at MIT and, later, lay the groundwork for the World Wide Web while working at CERN in Switzerland.<sup>1</sup> After becoming reality, the web then led to a new wave of speculation among writers including Neal Stephenson, whose novel *Snow Crash* coined and described the concept of a 'metaverse' and is now required reading at the Facebook-owned virtual-reality company Oculus.<sup>2</sup> Mark Zuckerberg, of course, recently announced his plans to transform Facebook from a social media company to a 'metaverse company', with a fifth of its employees

1 Robert Wright: "The Man Who Invented the Web", *Time* (2001), [bit.ly/3Cz9s42](http://bit.ly/3Cz9s42).

2 Yazin Akkawi: "Science Fiction Has Helped Predict the Future of Technology. Here's Why We Should Be Worried", *Inc.com* (2018), [bit.ly/3ENNmww](http://bit.ly/3ENNmww).



ARTHUR C. CLARK WITH PERSONAL SATELLITE DISH,  
SRI LANKA (1970)  
PHOTO: DENNIS SYLVESTER HURD





reportedly working to make that happen.<sup>3</sup> And Stephenson, by the way, now works for VR-developer Magic Leap.<sup>4</sup>

Several questions arise from tracking the roots of the feedback loop between fiction and innovation, and how the ideas formulated by yesterday's titans of sci-fi have helped shape the products we use today. What if, for instance, the required reading at Oculus and other technology companies not only included novels set in a tech-saturated future, but also literature that engages directly with questions of situated knowledge and the historical specificity of the production of technology? To what extent could our current challenges with algorithmic bias in AI and elsewhere have been less pronounced if no-one involved in the design process suffered from the illusion that products and software can be built to be ever bias-free – that no-one can have a 'view from above, from nowhere', as feminist theorist Donna Haraway puts it?

While we ponder these *what-ifs*, the feedback loop between fiction and innovation only grows in strength, with corporations like Google, Microsoft, Apple, Visa, Ford, Pepsi, Samsung, Nike, Ford, Hershey's, Lowe's, and Boeing now employing sci-fi writers to do 'sci-fi prototyping' to help them get a better sense of the kinds of futures in which their products and services might be used.<sup>5</sup> This list also includes the global professional services firm PricewaterhouseCoopers (PwC), who published a paper in 2017 describing the potential for business innovation that they believe could be unlocked through the imaginative power of science fiction: 'Fictional worlds allow new products and their use to be explored without the strictures of money or technological ca-

pability hampering creativity', they write.<sup>6</sup>

So, what exactly are sci-fi prototypes? Usually, they come in the form of short pieces of fiction with narratives, a gallery of characters, conflicts, and resolutions – all the things any good story has. A prototype may have different uses depending on the commissioning client. It could, for instance, be used for 'threat casting' to manage risk and stop certain undesirable futures from occurring. Or it could be meant to serve as inspiration for the *how*, i.e. in which situations and for what purpose a so-far undeveloped product could be used by individuals in a future that is different from the present. In the most successful and compelling cases of sci-fi prototyping, the stories can serve as inspiration for developing further blueprints or actual product prototypes.<sup>7</sup>

Although the end-goal of sci-fi prototyping is often product development, it's not only the corporate world that is hiring writers to help them chart the way ahead. The military too, has now begun commissioning works of science fiction to inform their long-term decision making. A 2017 strategy paper from NATO titled *Visions of Warfare 2036* details how military strategists can use science fiction to 'discover, from the minds of professional writers, new tech, novel use of existing tech, new doctrines' and to 'allow open discussion, using strength of storytelling, about the future character of war'.<sup>8</sup>

Evidently, there is a growing realisation of the potential for creative storytelling to inform the strategic choices of many types of companies and organisations. Yet this instrumentalisation of art to serve the purpose of multinationals and militaries is not exactly uncontroversial and will likely leave a sour taste in

3 Sam Byford: "Almost a fifth of Facebook employees are now working on VR and AR: report", The Verge (2021), [bit.ly/3EMuQVm](https://bit.ly/3EMuQVm).

4 [www.nealstephenson.com/magic-leap.html](https://www.nealstephenson.com/magic-leap.html).

5 Brian Merchant: "Nike and Boeing Are Paying Sci-Fi Writers to Predict Their Futures", OneZero (2018), [bit.ly/3CzhoIK](https://bit.ly/3CzhoIK).

6 Amy Gibbs: "Using science fiction to explore business innovation" PwC (2017), [pwc.to/3i2d46R](https://www.pwc.to/3i2d46R).

7 Brian Merchant: "Nike and Boeing Are Paying Sci-Fi Writers to Predict Their Futures", OneZero (2018), [bit.ly/3CzhoIK](https://bit.ly/3CzhoIK).

8 Mark Tocher: "Visions of Warfare 2036: a futurist prototyping methodology to support long term decision making", NATO (2017).

the mouth of some writers and readers. After all, can science fiction retain its edge and integrity if it has become an innovation sandbox for corporates and military agencies – the kinds of institutions that often take the role of villains in sci-fi literature?

Such criticisms notwithstanding, there can be no question of the growing influence and success of the emergent 'sci-fi industrial complex'.<sup>9</sup> Indeed, one of the more prolific companies in the field, the LA-based innovation agency SciFutures – whose clients include VISA, Ford, Colgate, Intel, and the US military – boasts a network of 'more than 300 sci-fi writers, visionaries and experts'.<sup>10</sup> Their prototyping comes not only in the form of short stories, but also graphic novels, motion comics, interactive web narratives, animated videos, and augmented reality content.

In some ways, sci-fi prototypers are doing what futurists have been doing since the 1960s – that is, creating fictional future worlds (scenarios) designed to prompt debate and provoke new decision-making. But there are some key differences between sci-fi prototyping and futurist worldbuilding as well. The scenarios used by futurists are, by design, multiple. They emphasise the range of forces outside our control that might swing the future in one direction or the other, which is why they come in sets (most often of four). Furthermore, scenarios tend to be mostly depopulated, with little room for individual agency. When scenarios have people in them, they act and think in groups (e.g. as population segments or 'consumers'). As such, scenarios can sometimes lack the things that make fiction so appealing: immersive and engaging stories and characters that give the world co-

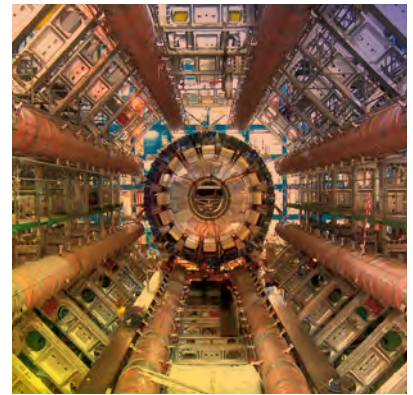
lour and make it accessible and believable to the reader.

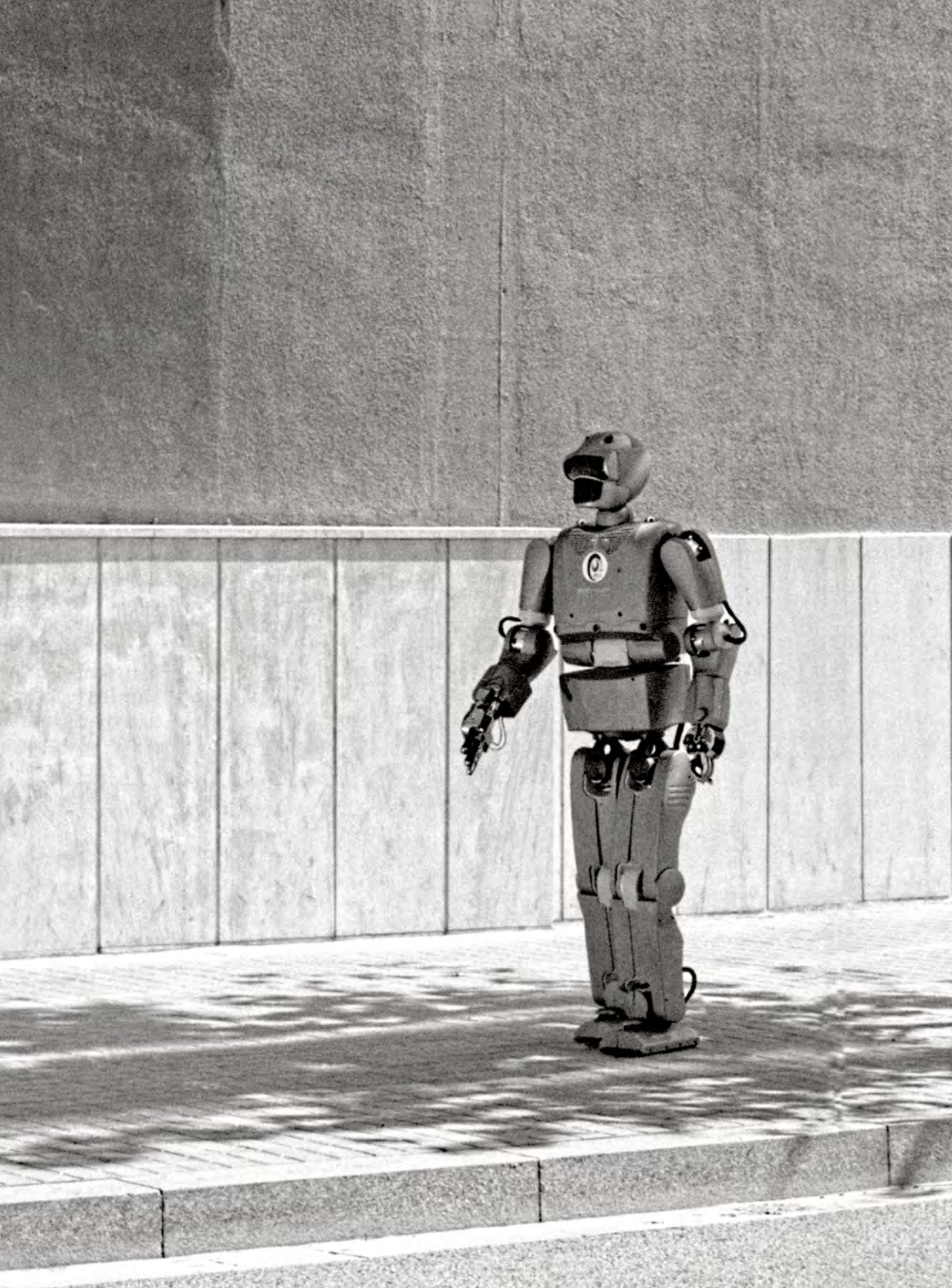
So, could futurists learn something from the way sci-fi prototypers bring the future to life? Definitely, and perhaps we all could. After all, we humans are not purely analytical creatures. We need stories to make sense of the world and the futures ahead.<sup>11</sup> ■

<sup>9</sup> Brian Merchant: "Nike and Boeing Are Paying Sci-Fi Writers to Predict Their Futures", OneZero (2018), [bit.ly/3CzhoIK](https://bit.ly/3CzhoIK).

<sup>10</sup> [scifutures.com](https://scifutures.com).

<sup>11</sup> See e.g. Nanjing Agricultural University: "Engineering a way out of climate change: Genetically modified organisms could be the key", PhysOrg 2020, [bit.ly/34G6VpQ](https://bit.ly/34G6VpQ).









REEM-B PROTOTYPE  
PHOTO: BRETT JORDAN

## CAUTION AND HOPE - the Twin Necessities of Utopian and Dystopian Storytelling

TEXT: CHRISTIAN KAARUP BARON  
& KLAUS Æ. MOGENSEN

The writer Ray Bradbury was once asked why he wrote about the future. Allegedly, he replied that it was to prevent it. The writings of Bradbury, who became an icon on the political left despite having a conservative worldview, were characterised by a pessimistic view of progress, as in his best-known novel *Fahrenheit 451* (1953). The title of this dystopian novel refers to the temperature at which paper burns, portraying a future where books are banned and people are pacified by meaningless TV entertainment. This was a caustic criticism of the dawning consumer society of his time and the dumbing down he saw as its consequence; indeed, it is no less relevant today than it was when it was written.

Another famous dystopian writer is George Orwell, whose masterpiece *Nineteen-Eighty Four* (1949) surged to the top of Amazon's US bestseller list during the Trump presidency. Orwell was a self-declared socialist but a staunch critic of Stalin, whom he saw as having betrayed the left and the working class. This view influenced both *Nineteen-Eighty Four* and his 1945 fable *Animal Farm*, which was an ironic allegory of the Russian Revolution. *Nineteen-Eighty Four* made Orwell an icon of the political right, although the novel delivers an

analysis of power that goes well beyond traditional political dividing lines and finds resonance in all sorts of attempts at abuse of power or manipulation of the masses. This illustrates the allegorical strength of dystopian tales over more explicit forms of political criticism. It is not explicitly stated which of today's issues the reader should be critical of; instead, it leaves it to the reader to find parallels between the fictional narrative and what is going on today. Dystopian stories give you food for thought rather than telling you what to think.

The TV adaptation of Margaret Atwood's *The Handmaid's Tale* has once again shown the potential of dystopian tales as a vehicle for social criticism, as have film adaptations of young-adult dystopias like Suzanne Collins' *The Hunger Games* and a host of others. Current issues, like the suppression of female rights, the disenfranchisement of a nation's youth, and how entertainment can distract the masses from social injustice, are projected and exaggerated to illustrate the dangers of paths we have begun treading today.

*The Handmaid's Tale* in particular takes place in a near future where the United States has become a totalitarian theocracy and illustrates in flashbacks how rapidly a society can go from being a liberal democracy to becoming a repressive dictatorship. It makes us painfully aware that there comes a point after which it is simply too late to stop the transition to totalitarian rule. *The Handmaid's Tale* underlines the primary societal function of dystopian stories – to activate people to political action before it is too late. And this may be exactly why dystopian stories feel particularly relevant today, where people



of widely different political worldviews see totalitarian tendencies in leaders like Trump, Putin, and Erdogan – and of course, most recently in the Taliban take-over in Afghanistan.

Whereas the merits of the dystopian genre as a vehicle for political critique ought by now to be fairly evident, its weaknesses should be equally clear. They seldom formulate alternatives for the grim future that they perceive and in worst cases, their pessimistic outlook may lead to apathy. For a more positive (but equally important) outlook, we need its utopian counterpart. However, as will be apparent below, utopian storytelling can contain a variety of ways of approaching a better world, and each of them has different consequences for thinking about the future.

## THE UTOPIAN TRADITION

Like many elements in European history, the utopian tradition can be traced back to the ancient Greeks. Here, it takes on the form of Plato's classic work *The Republic*, which must be considered mandatory reading for anyone with a bent for political philosophy. In *The Republic*, society is divided into three classes, each carrying out its own basic social task. The ruling class is thus (perhaps not surprisingly) made up of Plato's own profession, the philosophers. Plato justifies this choice by claiming that philosophers are characterised by their love of wisdom (it is literally what the word 'philosopher' means in ancient Greek: 'filo' (love of) 'sophia' (wisdom), and are therefore particularly apt to override their own interests in favour of the common good. The next caste consists of the soldiers, whose task it is to protect Plato's ideal state from external (and, presumably, any internal)

enemies. The last group in Plato's pyramid of society are (of course) the slaves, whose task it is to keep everything else together.

As should be evident from above, there is a clear trail of absolutism in Plato's political utopia. For the power-hungry despots of later generations, *The Republic* must have been a tremendous gift. Not surprisingly, there can be found remnants of Plato's ideas both in Lenin's notion of the dictatorship of the proletariat and in Hitler's *Mein Kampf*. The dubious historical role of utopian thinking as facilitator for various totalitarian regimes has given it a bad reputation as a road to totalitarianism. As will be seen below, this claim may be premature. But it is not hard to see how it has gained momentum. This legacy of *The Republic* tends to hide the role that utopian thinking has also played in shaping various progressive movements.

So much for Plato. In fact, the real breakthrough for utopian storytelling comes centuries later, and under different circumstances. Early defining utopian works, like Thomas More's *Utopia* (1516) and Francis Bacon's *The New Atlantis* (1626), were written in times of international unrest and violent social upheaval. The utopian tradition insists on the hope of a better future as an absolute necessity for dark times to turn better.

## AMBIGUOUS AND CRITICAL UTOPIAS

One idea that has played a major role in utopian thinking is the proposition that a better society can be attained through a reformation of basic human behaviour. Historically, it may be traced back to Rousseau, who argued that humans were born with a mental blank slate that could be civilised under favourable living conditions. The notion that it





A HANDMAID'S TALE  
PHOTO: VICTORIA PICKERING



is possible to change human nature for the better (either biologically, technically, educationally, or morally), can be found in many other places throughout history, including the Communist Manifesto, in eugenics, in various notions of social engineering, and in modern-day transhumanism and feminism.

In science fiction, the most in-depth analysis of relations between utopian thinking and changes in human behaviour is undoubtedly found in the feminist tradition. An example is Joanna Russ' *The Female Man* (1975) which skilfully exploits these elements in combination with empowerment as a means to debate the prevailing gender norms of the time. The novel follows the lives of four women living in parallel worlds that differ in time and place. When they cross over to each other's worlds, their different views on gender roles clash with each other's pre-existing notions of womanhood. In the end, their encounters influence them to evaluate their lives and reshape their ideas of what it means to be a woman. Thus, it is only by maintaining this attachment between utopian thinking and changes in basic human behaviour that the novel is able to demonstrate that the prevailing gender roles of the 1970s are not a matter of natural determination.

Over the last roughly forty years, the utopian tradition has given birth to two interesting developments. Margaret Atwood has made significant contributions to one of these, as the later part of her writings can be viewed as an extension of Ursula K. Le Guin's concept of the 'ambiguous utopia'. The beginnings of this concept can be seen as early as in Aldous Huxley's *Brave New World* (1932), which is commonly regarded a dystopia but can also be read as

a sort of utopia where everyone is happy, apart from the book's protagonist.

In the feminist literary tradition, this ambiguous ambivalence is supported by a keen eye on who stands to win and lose when attempts are made to turn a utopia into reality. It may be that even *The Handmaid's Tale* can be read in this way. A conversation (which has also made it into HBO's trailer for the series) between the book's female protagonist and the man whose children she is forced to bear, ends with an almost Orwellian aphorism: 'Better never means better for everybody'.

This sensitivity to the limitations of specific utopian scenarios has been further examined in another recent trend in the genre, the so-called 'critical utopia'. Rather than providing any ultimate answer to what constitutes an ideal society, the critical utopia is a process-oriented attempt to delve into paths leading to real societal improvement. Unlike classical utopias, which often involve a change in basic human behaviour as mentioned above, critical utopias discuss what it would take to make ordinary people make better collective choices. An example of this tradition can be found in Kim Stanley Robinson's *The Ministry for the Future* (2020) which revolves around the scenario of a massive heat wave that strikes India in 2025, killing more than 20 million people in a matter of days. The storyline focuses on a small UN agency, which has been given the near-impossible task of representing the future generations in the wake of the political negotiations that led to the Paris agreement. Realising the enormous perils connected to unrestrained Anthropogenic Climate Change, they embark on a desperate campaign to keep global temperature from

rising further using all means possible (even illegal ones). In the process, Robinson explores a variety of proposed climate solutions, including the employment of sustainable energy forms, changes in global food production, geo-engineering, and the introduction of a blockchain-based carbon coin.

### THE BEAUTIFUL UTOPIA

On a final note, utopias are not just interesting as political commentary; they also often point to aesthetically more pleasing futures. Utopian fiction is often abound with beautiful architecture and green cities designed for people rather than for cars; cities we can hope for if we choose to design them based on what is best rather than what is cheapest or most profitable.

This aesthetic focus can be seen in movies and TV series that portray a utopian (or ostensibly utopian) society. The best-known example may be *Star Trek*, which during its many iterations have shown us airy, soaring buildings that seem less utilitarian and more like works of art, with people clad in fantastic and individualistic clothes (barring, of course, the strictly regimented uniforms of the Space Fleet; a strangely near-totalitarian organisation in an otherwise free society). Other examples are the (mostly) utopian movies *Bicentennial Man* (1999), *Her* (2013), and *Tomorrowland* (2015).

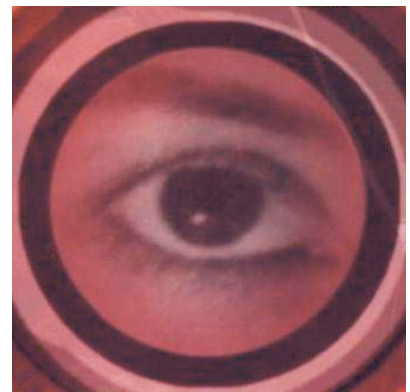
Such aesthetically pleasing visions make us question why our world today is less pleasing to us. Surely, we have the means to make the world more beautiful. So why do we instead build ugly concrete high-rises, featureless, rectangular towers of smooth glass and steel, and asphalt jungles full of cars, where we are forced to be always vigi-

lant or be run down? Being shown a fictional vision of beauty enables us to dream of making it come true.

Such utopian dream visions need not be realistic to inspire our dreams. Take J.R.R. Tolkien's *The Lord of the Rings* trilogy (1954-55) and the movies based on them. Tolkien portrayed the elves in his story as perfect beings living in a perfect, tranquil society, and the movies, with architecture, clothes and utensils lovingly designed by concept artists like Alan Lee and John Howe, let us imagine living like them. Even if such lives are unattainable to humankind – after all, we aren't immortal, magical beings – we can dream of similar beauty and become inspired to make it real. We can even argue that some of the human societies in *The Lord of the Rings* did exactly that, judging from the obviously elfen-inspired city of Minas Tirith. The fact that humans in this story achieved that lets us hope that we could achieve the same.

Dreams do not have to be realistic, but it is necessary to dream – and dream gloriously – to give us hope and let us change the world for the better. ■

PHOTO: THE FEMALE MAN



# **When Art Sets the Agenda for Technological Development**

TEXT & PHOTO: MAJKEN OVERGAARD





Plant 15

Many people consider art and technology to be opposites of each other. Art is about making the abstract tangible via activation of our senses. Technology, on the other hand, is all about systems, algorithms, and the calculated. But technology and the arts have always informed one another, and the two domains of knowledge are closer and more intertwined than most people think.

What connects these two areas is the ability to create radical changes in our lives. It happens in different ways, of course. A new technology released on the market can alter everything from the way we communicate, wash our clothes, and pay for groceries to how we have sex with our partners, monitor our health and our kids. A new book, film, or exhibition doesn't have quite the same immediate impact, but often, art is where change begins. The arts are characterised by a constant search for new ways of re-imagining the world we live in, the images, thoughts, and stories produced are thus always ahead of the contemporary and lay the ground for our ability to envision the future.

When trying to understand how change comes about, an interesting place to point our gaze is therefore the intersection between art and technology: that exact spot where the lines between fiction, reality, science, and our imagination are blurred, allowing us to dream and create in a vast, open space.

## WHAT IF YOUR PLANTS COULD STORE YOUR DATA?

The *Data Garden*, an art project by a collective of international artists, scientists, and designers named Grow Your Own Cloud, takes us right to the sweet spot between art and science. The garden is an experiment in creating a new type of data infrastructure that promotes unification between people, ecosystems, and technology as it situates the audience between walls of living plants accompanied by a video and posters that mimic traditional science posters.

The visual material in the video mixes scenes from the future with images from today of people interacting with the installation. This situates the viewer in an expanded time scenario – somewhere in between the future and the present. The posters explain the science behind the data garden; how it is now possible to encode data in plants through DNA techniques.

Imagine that! What would our lives be like if we could save the photos of loved ones in the rose bush in the garden or important papers in the basil in the kitchen? What would this technology mean for our relationship to plants? How would our approach to data change if it were no longer something that is located in large commercial data centres around the world? Perhaps data would feel closer to us, or perhaps we would get a sense of what the materiality of data is.

Today, our use of the internet emits as much CO<sub>2</sub> as the world's collective air traffic.<sup>1</sup> With 'data warming' having become a reality, *Data Garden* provides a possible future solution. The technology behind it is developed by scientists but the potential impact of the technology, i.e. how it could influence our lives and our relationship to nature, is made visible and understandable to us through the artistic experience. *Data Garden* doesn't reveal how far advanced the technology currently is, or where the reality from the science labs stops and the artistic vision starts. After leaving the installation, we don't know when we would be able to use the

<sup>1</sup> Theis Ehler Molin:  
"Internettet udleder  
lige så meget CO<sub>2</sub> som  
hele verdens flytrafik.  
Løsningen er så simpel,  
at alle bør kende den",  
Zetland (2019),  
[bit.ly/3oGQRPN](https://bit.ly/3oGQRPN).

technology in our own lives; we are left to dream and imagine the future of data for ourselves.

**Data Garden was supported by Catch – Center for Art, Design and Technology (DK), Roskilde Festival (DK), SXSW (US) and Museum of Human Achievement Austin, Texas (US), and the Ministry of Culture Denmark. The installation received honorary mention by Ars Electronica Starts Prize. To learn more about the thoughts behind the Data Garden, we reached out to the collective behind the project, Grow Your Own Cloud, for a Q&A:**

**What type of impact do you think or hope the Data Garden has on the people who experience it?**

We are working with nature to alleviate the threat of 'data warming'. The Data Garden invites visitors to experience a new materiality around data and explore a world in which data storage is truly green and exists as an accessible public resource that is shareable within communities. Data Garden should inspire hope for the future where technology can be grown.

**You work in the intersection of artistic investigation and scientific research. How do these two areas complement each other?**

Working in anti-disciplinary environments is at the very core of our practice. In our daily work, we look for opportunities to mix and match with professions that are complementary to ours yet completely new to us. We believe that science cannot live without art and design. In our project, we tend to seek collaborations that give space to shift between science and art. As artists and designers, we want to push for technological development by asking the right ethical questions.

**What is the potential of art in relation to our technological futures?**

Art is a medium that can bring certain speculative futures closer to people. It can create opportunities for others to truly experience something that does not exist yet. Art also allows for the right and challenging questions to arise in a safe space. This is not to say that art has no boundaries – it certainly showcases the very edges of a particular idea.

**What do you envision is the future for your practice?  
And for the way we use data?**

Grow Your Own Cloud (GYOC) is concerned with proposing alternative data futures, which allow the trajectory to deviate from the path of data warming we are currently following. We think this begins with an 'ethics and environment first' approach to developing new technology. We look beyond conventional human-centred models to a more-than-human, ecosystem-based approach meant to ensure that we treat the planet and non-humans with respect.

**How would the world look different if trees could store all of our data?**

Then we would certainly plant a lot more of them! That's why our ambition is to

help inspire a transition from dirty data farms to truly green data facilities. Rather than cutting down trees and clearing green spaces for yet more urbanisation, we seek to create a rationale for the regeneration and proliferation of nature. By working with nature as a technology, we see futures in which the carbon emitting data farms of today are replaced by carbon absorbing Data Forests.

## ART ON THE BLOCKCHAIN

Art is not always found in galleries and in the shape of physical installations. Sometimes, it is brought to us via the Internet. The emergence of blockchains and NFTs has created a revolution in the art world which probably will affect our relationship to all things digital in the future.

Art has been present online ever since the internet started taking off. A lot of the early net art was based on investigations of the new medium and its specific characteristics; namely, the openness and non-hierarchical structure. Of course, being digital, these works were only accessible online and what we usually associate with art wasn't present – the uniqueness. Fast forward to today where blockchains and NFTs have turned this on its head.

The emergence of blockchain technology in 2008 brought the potential for digital data to achieve uniqueness and non-reproducibility. Yet despite the supposedly revolutionary potential of blockchain, the adoption of the technology outside cryptocurrencies has been rather slow. One domain where blockchain has started to take off is within the arts, with so-called NFTs (non-fungible tokens) selling for large sums.

An NFT is a unique unit of data stored on the blockchain, and it can be used to certify photos, videos, audio, and other types of digital files – like the memes, tweets and music that are being sold for exorbitant amounts.<sup>2</sup> Basically, an NFT provides you with ownership of something digital (read more on page 66).

<sup>2</sup> en.wikipedia.org/wiki/Non-fungible\_token.

There are many things to be said about NFTs. Some hail it as a new way for artists to gain control over their own assets, a way to distribute art to new audiences, and to let other sub-cultural art forms emerge and thrive. Others critique it for commercialising art on the internet – once again – and for creating a technological system that is only accessible by the few. When we look at it from an art and technology angle, it is important to highlight another perspective as well, because the artistic appropriation of blockchains through NFTs is also showing us a future where the boundaries between the digital and analogue worlds are more blurred than ever before. We now have a system that connects the two worlds, and we will be seeing an ongoing merging. This will also extend to artistic AR and VR experiences as our digital and physical identities blend together in ways that we have never seen before.

**The Danish artist Spøgelsesmaskinen (*The Ghost Machine*) works in the transdisciplinary field between physical and digital space through light art, video projection, and animation. During 2021, he has, with great success, sold his works online as NFTs. We asked Spøgelsesmaskinen some questions about his recent NFT journey.**



### **Why did you embark on this journey?**

The NFT community is a large worldwide community of artists and collectors and, for the first time in my career, I have come across a community that considers digital content as art on the same level of traditional physical fine art. This is a big change for many digital artists since we are suddenly able to create and sell artworks directly to collectors. Adding to this, the artist's rights are maintained for the future, allowing us to actually get a cut of future sales of our art, which was never possible before – even in the physical world.

### **Which NTF platforms are you active on and why?**

I started out on the open-for-all, low carbon-emitting platform hicethnunc.xyz, where I am running four different projects. Recently, I have also started minting special 1/1 editions on the Ethereum-based platform foundation.app. Ethereum is a slightly more CO<sub>2</sub>-heavy blockchain, which is expected to become vastly more climate-friendly in the near future. The NFT community is mainly based around sharing, collaborating and collecting through digital networks like Twitter, Discord or Reddit. My main fan and friend base is on Twitter.

### **Why did you start distributing your art through these platforms?**

I have always been active as a digital creator, and suddenly having a platform to tell my own stories was a huge eye opener for me. This has led me to explore my own digital creativity and start new sub-projects I never thought possible before. How do you feel when you are active in this space? How is it connected to your analogue life? There is an overall feeling in the community of being the early stage of something really big, just as in the beginning of the internet. Many artists here were already active as pixel artists or experimental coders in the early days of the internet, and there is an amazing optimism and excitement in this community that I have not experienced since the dawn of the internet. In a way, it's like a new and better LinkedIn network for artists. The NFT space is being used by all kinds of creatives, including photographers, fine art painters, installation artists, 3D artists and musicians; moreover, a whole new genre of generative art suddenly has an actual platform.

There is a huge connection to physical life since any medium is represented here. One of my projects, Entelechy, explores kinetic flow sculptures, and I crowd-fund these physical installations by selling sketches, test renders, and documentation of these art pieces online. There is a great will to support new young artists and make charity events for critical hot spots in the world. Recently, I started a donation campaign for Afghanistan. In just a week, more than 100 artists donated art pieces and we have (at the time of this interview, ed.) collected over 70.000 DKK (10.000 USD) for the Afghan artists and women charity funds.

### **What do you expect this new environment will bring us in the future?**

Buying and creating NFTs is based on the smart contracts of the Blockchains that are also fuelled by DAOs (organisations represented by rules encoded as a computer program that is transparent, controlled by the organisation members

and not influenced by a central government, ed).<sup>3</sup> DAOs and smart contracts hold the potential to completely redefine how we organise as human beings in future democracies and organisations, and I'm pretty sure we will see a complete change of structures based on these services in the future.

The current hype around blockchains resembles that of the early Internet in the 90s. Yet it is still inaccessible to most people, and many struggle with understanding what the technology actually is about. This is often the way it is when the world blends and new systems are created; it can be difficult to see the actual outline of what is to come. But looking towards the NFT community is probably wise if you want an understanding of the futures of endless chains of decentralised information.

3 [en.wikipedia.org/wiki/Decentralized\\_autonomous\\_organization](https://en.wikipedia.org/wiki/Decentralized_autonomous_organization).

4 Chandra Steele: "The Real Reason Voice Assistants Are Female (and Why it Matters)", *pcmag* (2021), [bit.ly/3aIAXIK](https://bit.ly/3aIAXIK).

5 [multivocal.org/about](https://multivocal.org/about).

## WHY BINARY?

As we increasingly interact with our machines, we have also developed voices, forms of expression, and emotional registers for them, evident in virtual assistants such as Siri and Alex. The question is, why are most of them created as female? The companies behind them would argue that these voices tested best; when asked, consumers choose the female voice for 'a helpful, supportive, trustworthy assistant'.<sup>4</sup> On one hand, one could make the case that the emergence of these entities provide us with a unique possibility to think about our identities in new ways. Yet on the other hand, we still we uncritically translate existing binary gender stereotypes to our machines.

**[multi'vocal] is an ever-evolving non-binary synthesized voice created by a (digital) community of participants of different ages, genders, and geographical origins.<sup>5</sup> Since 2017, the art and research based collective behind the initiative has been exploring synthesized voices from a feminist activist approach. With their work, they aim to challenge the notion of machines being limited to having single identities and the uncritical transfer of cultural norms to technology. Below, a Q&A with the collective behind [multi'vocal].**

## What do you envision for future synthetic voices?

That they become more and more human-like with the aim of enabling seamless interaction with a given technology. But what is considered human-like when it comes to voice-based interfaces? And why should all voice-based interaction be seamless? These are important questions to ask.

## How would you like to affect this development?

By pushing the norms for the more binary thinking in the development of synthetic voices as human-like, so they can become more diverse and inclusive, and by making people reflect upon what voice technologies they want to interact with.

In human-to-human interaction, we know that voices are complex, variable, and diverse; the minute nuances of tone of voice influence the affective tonality and interpretation of what and how we are trying to communicate in sociocultural contexts. Voice is both a matter of expression and of being heard, and connects

deeply to feelings of intimacy, identity, sociality, and performativity. Current, primarily Western, synthetic voice designs often present us with heteronormative vocal stereotypes that do not take this vocal diversity into account. The focus on designing voice user interfaces as 'natural' and 'intelligible' has been criticised for operating with normative stereotype categories like male and female. However, when something is designed, it means it could be different.

### **Why are you doing this as an art project and not a research project?**

Even though there are many pure research components in our project, we want to meet people outside academia, as we believe that issues of who is speaking and listening in public spaces – an infrastructure of which synthetic voices are part – is an issue for all citizens, not just researchers. A very important part of this project is to exhibit and make people who are not necessarily interested in pure research reflect upon the politics and aesthetics of voices.

### **Your art installation is not displayed in traditional art galleries or museums, why did you choose festivals as your primary venue?**

We have asked people to participate in the creation of a multivocal synthetic voice by donating their voice at festivals such as Roskilde Festival and Techfestival, and in organisations such as the IT University of Copenhagen and Danish Society of Engineers. These places and events are characterised by having many different people with different geographical origins, ages, and genders. We are not opposed to galleries and museums, and are also collaborating with these kinds of institutions outside this project.

### **What is the next step for [multi'vocal] and why?**

We work with paralinguistics, which is the study of speech beyond the communicated message such as perceived gender, age, accent origin, and emotions. We are currently working on releasing a record where listeners can hear the generation of the paralinguistics of a synthetic voice by using machine learning methodologies. We are releasing the record at the awesome experimental label Anyines. We are doing this because we want listeners to reflect upon the fact that developing synthetic voices such as Siri and Alexa is a technical process. It is not just a voice speaking. It is a digital technology that has been generated by using (biased) machine learning methodologies. It is a designed voice. Which also means that it could be different.

### **Possible Futures**

The three examples above show us what our technological futures could look like if we include a speculative and artistic perspective that allows worlds to blend. The arts offer critical, alternative and more playful perspectives on what our technological futures might be, which helps open up the narratives we have around technology. Both the arts and technology provides encompassing possibilities for change and if we let the lines between fiction, reality, science and our imagination be blurred, maybe we can start reimagining our technological futures. ■

# NFTs

## – *how do they work?*

TEXT: MAJKEN OVERGAARD

In the past few years, blockchains have started to influence the way we experience art – both online and offline. With the emergence of NFTs (non-fungible tokens), new markets for buying and selling art have emerged. According to The Guardian, NFTs account for a third of online sales, and 2% of the overall art market.<sup>1</sup> To the uninitiated, this new world of buying and selling digital art can all seem very confusing, so to ease understanding, let's imagine we wanted to buy an NFT. How would we do it?

<sup>1</sup> The Guardian:  
"NFTs drive sales of  
contemporary art to  
record £2.7bn", (2021),  
[bit.ly/3bibSZs](https://bit.ly/3bibSZs).



## WHERE, HOW AND WHAT TO BUY?

First of all, to buy an NFT you will need to locate the online platform you want to purchase from. There are many places to go, and in the past year alone, a large number of new platforms facilitating the creation, selling, and buying of NFTs have appeared. Some platforms are curated, either by an appointed board or by the artists already active there. Some feature only emerging artists from within digital communities and others bring already established artists and institutions into the world of NFTs. In addition, there are platforms focusing on many different types of NFTs, with some selling artworks, trading cards and gaming collectibles at the same site, while others only offer music NFTs for instance.

You would also need to think about which cryptocurrency you would want to use and, related to this, which wallet you want to use to store it. If, for instance, you are concerned about the environmental impact of blockchains, you might want to steer away from cryptocurrencies like Ether, which runs on the Ethereum blockchain that currently is based on a highly energy-intensive system known as proof-of-work. You might instead go for one of the many proof-of-stake currencies, which are much more energy-friendly to use.

So, let's say you have found the digital artwork you want to buy the NFT for. Whoever mints the NFT associated with that image asserts ownership of its digital rights, whether the minter has an actual copyright interest or not. Each NFT can be bought and sold again and again, but the blockchain allows for ownership and validity of each piece of art to be tracked. This also comes in handy for the artist because most platforms provide them with the possibility to earn money on secondary sale.

## WHO ARE THE BUYERS?

*'The point was to show Indians and people of colour that they, too, could be patrons, that crypto was an equalizing power between the West and the Rest, and that the global south was rising'.*

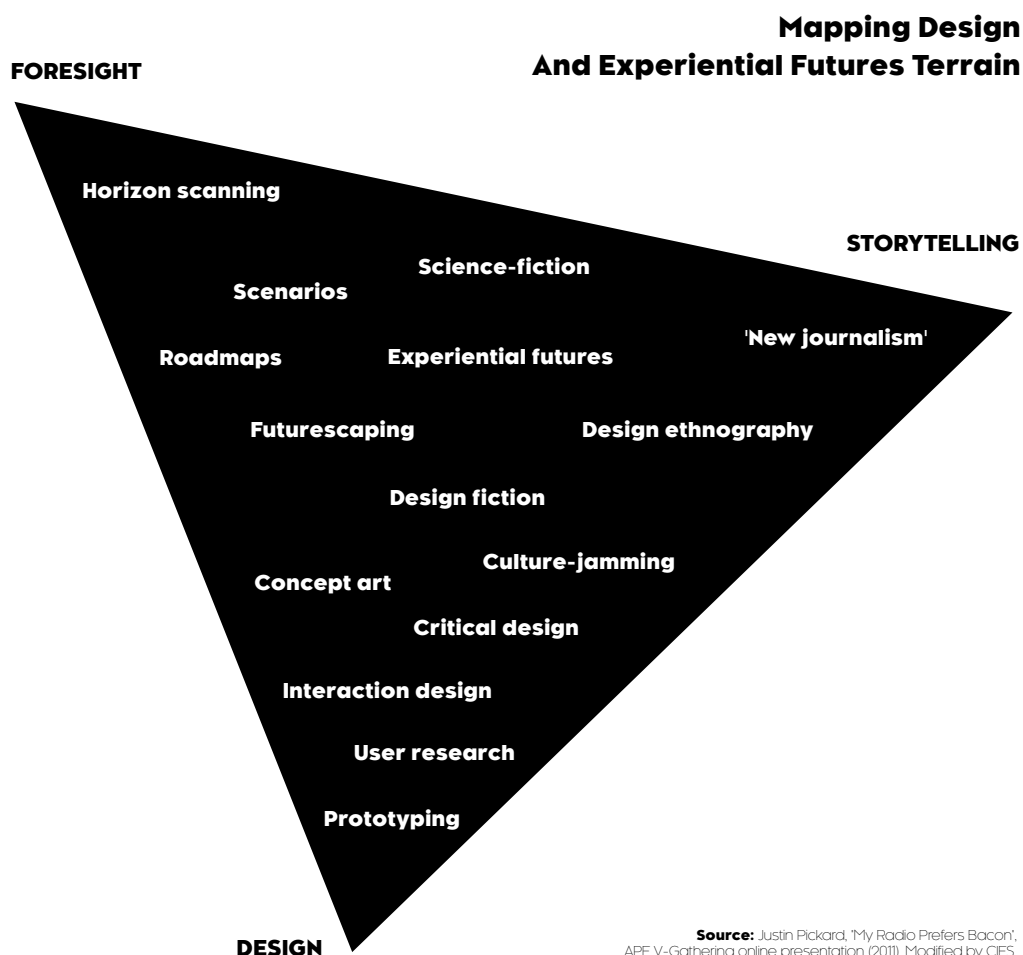
The above quote is from investor Vignesh Sundaresan, who purchased an artwork by digital artist Beeple for USD 69 million – the most expensive NFT ever sold. NFTs are indeed being sold and bought from all over the planet, and often artists and buyers will use pseudonyms, making it more difficult to get an overview of who and where the traffic is coming from. But one thing is certain: it is not the traditional art buyers who dominate this emerging market. Often, buyers and sellers are people who spend a lot of time online, playing games, being active on different forums and generally living a large part of their lives on the internet. For them, it is natural to also want to purchase skins or other cosmetic objects for different video games, art works, music and other items and document the ownership on the blockchain. NFTs are fast becoming an integrated part of the new markets emerging from online life. In all likelihood, they are here to stay. ■

# Bringing Futures to Life Through Immersive Experiences

TEXT: MAJLKEN OVERGAARD  
& NICKLAS LARSEN

How can the future be understood? Is it best achieved through reading or listening – via a report or a podcast, for instance – or do we stand a better chance of achieving genuine understanding and deep reflection when the future is communicated to us through a sensory and immersive experience?

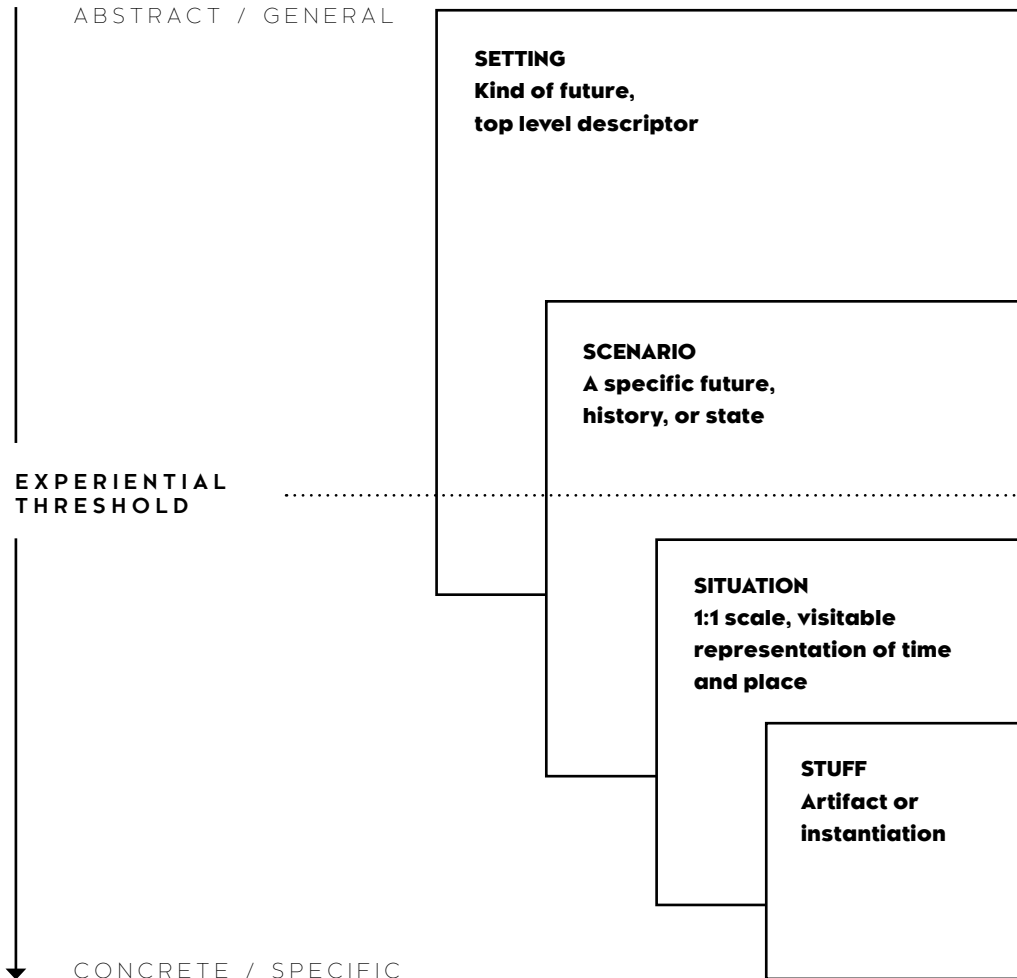
A new design-driven approach to futures studies, *experiential futures*, takes the discipline out of its oft-written form, and embeds it in immersive art and design-driven experiences. This hybrid approach to futures, which was pioneered by the futurist Dr. Stuart Candy, is designed to help us attain a fuller view of scenarios ahead of us by merging the analytical with tangible participatory experiences. In Candy's words, the goal of experiential futures is to create 'situations and stuff from the future to catalyse insight and change'. This can take many forms, including performances, exhibitions, the design of 'speculative artifacts', games, multi-media productions, or interventions in the public sphere.



Experiential futures deploys the tools from the futures studies toolbox – including scenario building – and combines these with creative tools from design and storytelling to produce prototypes or experiments depicting possible futures to be experienced (see Figure on previous page). The Experiential Futures Ladder (see Figure below) illustrates how this is done by moving from top level descriptors of a certain future towards a visitable representation of that future, including the ‘stuff’ that populates it. Quoting the scholars who designed the ladder: ‘For futures studies to impact mainstream culture and contribute to civilisation-scale “social foresight” it must be capable of bridging the “experiential gulf” between abstract possible futures, and life as it is directly apprehended in the embodied present.’

## The Experiential Futures Ladder

Source: Stuart Candy (2016)





In addition to making the abstract tangible, bringing scenarios to life naturally also serves to support their original function: to confront assumptions about the future with alternatives, and to challenge the predisposed idea of what the future can (or can't) be.

### **AN IMMERSIVE REVOLUTION**

*'Any time we try to envision a different world – without poverty, prisons, capitalism, war – we are engaging in science fiction.'* **Walidah Imarisha**

As discussed elsewhere in this report, science fiction is more than just speculation about the future; it can be a powerful productive force and a tool for changing mindsets and guiding decision-making. We could even say, as in the above quote, that any kind of imagining of alternative futures can be classified as science fiction (depending on how loose your definitions are), and thus as a kind of art. Experiential futures function in a way that is comparable to science fiction, but the approach has a distinct advantage over the literary genre: experiential futures adds an immersive dimension by bringing fictional futures into the real world and letting us experience them first-hand. With the ongoing development of technologies like VR, AR, AI, and 3D design, audiences are increasingly transformed into participating actors. Indeed, we can only speculate on what the future of experiential experiences will look like as the immersive revolution continues to take leaps. Below, we dive into some examples of how this is being done today.

#### **Example: Illuminarium**

Launching in Atlanta, US with more venues underway, a new ambitious endeavour by publishers, Oscar winning set designers, and filmmakers has recently opened. Illuminarium provides a state-of-the-art experience attempting to merge museums, cinemas, and virtual reality by blurring the lines of film, immersive environments, and theatrical design and is giving audiences a taste of what the *edutainment* of the future may look like. It lets visitors walk into high-definition documentary settings in a space that itself can be transformed through video projection, lidar-based interactive digital elements, sound, and special effects to replicate any place in the world (or beyond). The current experience renders up close interactions with endangered animals of the African Savannah, and the second in the making will let visitors become astronauts, able to kick-up moondust as they walk the moon.

#### **Example: Seven Siblings from the Future**

In 2020, this thought-provoking Finnish-Australian exhibition presented future challenges in 2050s Australia at the Museum of Discovery (MOD). The exhibition explored the future of Eucalara in southern Australia – which already bears witness to climate refugees, invasive species, and fresh-water scarcity – seen through the eyes of seven siblings with different core values and interior and exterior drivers. Visitors logged their reactions in a 'passport', which was used to tell them which sibling they were most alike, telling a story of how their personal perspectives might be valuable and of importance in shaping the future for Australia. As MOD's

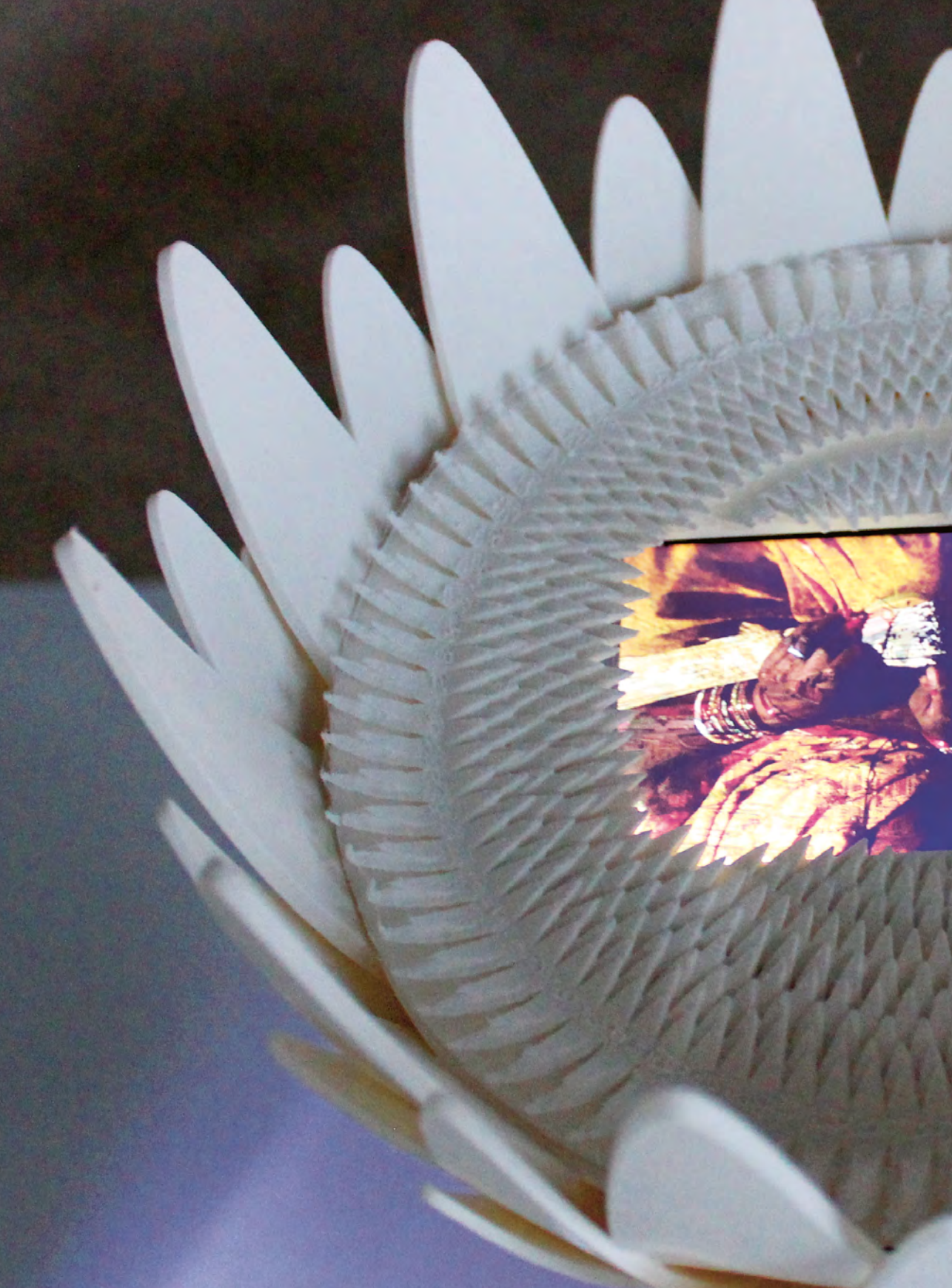




PHOTO: MIRABELLE JONES



Director Kirsten Alford writes in the *Journal of Futures Studies*: 'By immersing visitors into a specific future world, we were able to build up a story around them. The narrative structure of the seven siblings, combined with the interactive exhibits, allowed us to consider complex drivers for the future. This interplay of interior and exterior drivers made for a rich exploration of a plausible future of Australia, and left visitors feeling empowered that they each had a role to play in it'.

**Example: Digital Alchemy: Future Technology Products Inspired by Diverse Voices in Fiction**

Artist and designer Mirabelle Jones works in the intersection of product design, speculative fiction, maker culture, and intersectional data feminism. In this work, the artist selected devices and technologies described by a diverse body of authors including women, LGBTQQAIA\* folk, and people of colour in science fiction and realised them as artworks that simulate interactive product prototypes. Currently, the artworks are displayed at CATCH - Centre for Art and Technology and Design, in Denmark, as part of an exhibition in collaboration with the Danish Museum of Science & Technology that investigates how we have stored data throughout time. Objects from the Museum's historic collection are displayed alongside the speculative objects from the future and provide the artworks with a past context, making the suggested future even more tangible. Thus, the artworks are translated from fiction and speculation into the real world and provide the viewer with a physical encounter of the future in the present moment. The exhibition creates experiential futures by inviting participants to imagine a future world, where diverse voices are creating the technology and the world we will live in.

**Example: What will the future inherit from us?**

The time scale of geologic events is almost unimaginable for us as humans. *The Inheritance Project* is an experiential art exhibition that provides a physical understanding of deep time. It consists of different elements, including jewellery, an auto-radiography, and a photograph.

The jewellery has black and yellow stones set in gold and timeless design showcased alongside a concrete container to store it in. Despite the jewellery's beauty, its stones are radioactive and if you were to wear them today, it would bring about an uncanny feeling of discomfort. Currently, we can only observe the precious objects and await the natural transmutation of the radionuclide. The concept of radioactivity is almost unfathomable. We cannot see it and rely on equipment to be able to trace it. It is only visible due to the jewellery's auto-radiography, meaning an image produced by the pattern of decay emissions is from the distribution of a radioactive substance.

The photograph is of a woman and a man, dressed in dark neutral clothes, standing against a grey background. It is not revealed if they are married or siblings and, as with the jewellery, they seem timeless too. Situated between them is the concrete container, almost as a third family member, built to contain the radioac-



tive jewellery through deep time. In *The Inheritance Project*, a future is imagined where the jewellery is wearable. It will be handed down through generations until it will finally, some day in a very distant future, be safe to wear. Many families have heirlooms in the shape of jewellery. Indeed, these objects often become symbols which are central to how family stories are carried through time. We can imagine the coming generations taking care of the concrete container, handing it down to the next generation, and then the next. We are thus given a physical, relatable understanding of something as abstract as deep time.

### CONNECTING RATIONAL ANALYSIS WITH EMBODIED KNOWING

A deep understanding of possible futures will sometimes require more than what words can provide, despite how well-crafted the particular research behind them may be.

This is why experiential futures as a practice both holds the potential, but perhaps even also responsibilities in '(re)connecting rational analysis, abstract speculation and embodied knowing'<sup>1</sup> about the future, and thus how we act in the present.

While enacting the future through sensory experiences won't give us conclusive answers to how tomorrow could or should turn out, experiential futures can provide spaces that contribute to and enhance our anticipatory capabilities, perhaps even fostering new and more effective conversations and critical thinking. Experiential futures might show a variety of possible futures to explore, but participants will have to choose the path towards these futures themselves. ■

1 Claudia Garduño García, dñi Gazizulusoy: "Designing future experiences of the everyday: Pointers for methodical expansion of sustainability transitions research", Futures (2021), [bit.ly/3kyOzjm](https://bit.ly/3kyOzjm).

THE INHERITANCE PROJECT  
PHOTO: ANDERS BØGGILD

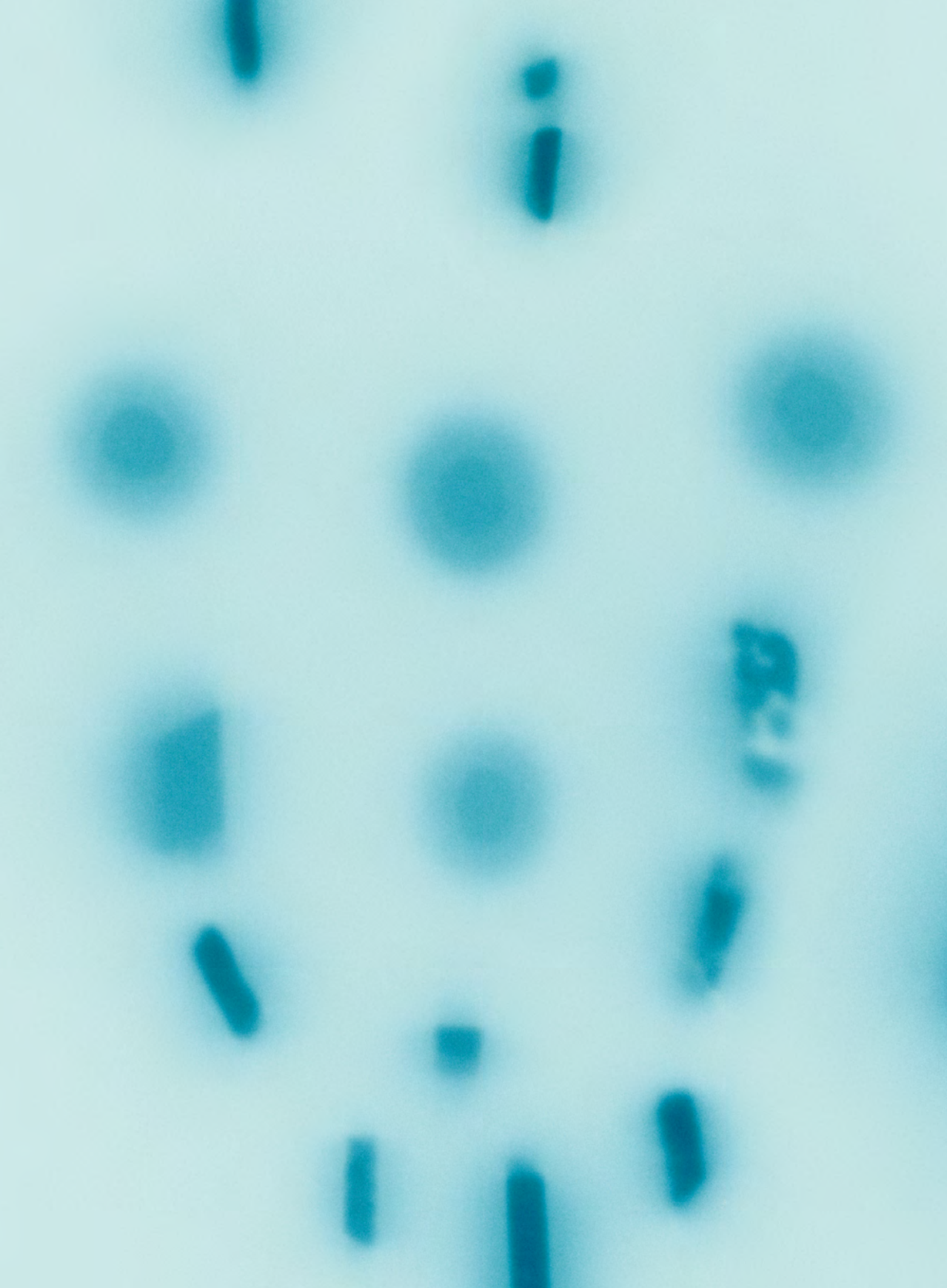






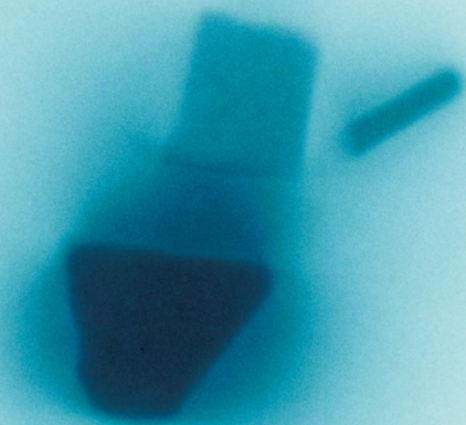


PHOTO: ANDERS BØGGILD





**'A deep understanding of possible futures will sometimes require more than what words can provide, despite how well-crafted the particular research behind them may be.'**



GAMMA RADIATION EXPOSURE  
OF THE NECKLACE ON X-RAY SENSITIVE FILM  
PHOTO: BERGER & KETO

**Interview with Rector, Lene Dammand Lund, the Royal Danish Academy  
– Architecture, Design and Conservation by Nicklas Larsen**

# **Futures at the Royal Danish Academy**



The Royal Danish Academy was founded in 2011 as a merge of architecture, design, and conservation. It houses approx. 1500 students who work in the intersections of art, science, and practice to respond to present and future challenges in society and the world. We spoke to Rector, Lene Dammand Lund about the academy's approach to futures and how she believes the creative and cultural industries hold the key to tomorrow's solutions.

*How does the Academy encourage students to engage with the future?*

In our Solutions programme, our graduates present their visionary projects and convincing suggestions for how to think, build and generate knowledge in new ways. Our combination of art, science and practice makes it a very special education that challenges silo thinking. This year we saw many great solutions for the circular economy, including how to reuse building materials or clothes, design for disassembly or invent new materials.

*How do you anticipate futures for the academy?*

We recently launched our exhibition *The Future is Now!* which was based on input from workshops with students and staff. We invited visitors inside four containers resembling different future scenarios. Characters, objects, and visual effects underpinned a sensuous conception of the educational landscape of the future and the Academy in year 2050. It encouraged dialogue about what education and research should be able to do in the future, and what possibilities and limitations different perspectives may have. A fifth container collected input from makers and audiences, which feeds into a part of a larger process that will result in a new vision and strategy for the Academy.

*What does the future hold for the arts?*

We stand before a paradox. There are a lot of political speeches that highlight the need for creative artistic skills and the industry's future potential. At the same time, funding is being cut back. If we follow the money in research and education, it goes towards digital technologies, which to me emphasizes the need for the artistic fields. We must be active and open and keep fueling the discussion of the role of art in society. 10 years from now I think it will bear fruit, with artistic processes being much more woven into the social fabric, and in particular because I believe that the technological development will soon reach a point that shows a clear need for the arts, if not already. Bridging art, practice and science is the way forward.

*On the following pages you can read a condensed version of the 2050-scenerios mentioned. Full versions can be obtained by the Danish Royal Academy.*





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COLLABORATE.  
CREATE. CHANGE.





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**Det Kongelige Akademi**

tradition & fornyelse



**REAR**

PHOTO:  
SUSAN GREGER JENSEN



# Scenarios for the Royal Danish Academy

## WORLD-CLASS KNOWLEDGE

Economic growth has been slow towards 2050, and welfare cuts have led to increased inequality. The well-off buy the best from the best while branding and communication have reached new heights and are central to the workings of society. Your personal brand is your path to attractive jobs, determined by knowing the right people and having studied and worked in the right places.

Branding-wise, the Academy maintains its position by attracting celebrity architects, conservators, and designers, which in turn attracts others. Education is mainly paid through tuition fees – especially if you want to study under the most famous star lecturers. Only the best can hope for private or public study grants, and researchers must compete for funding. The Academy collaborates with a range of top creative schools worldwide, called the A7, to which well-off students buy collective access. The Academy offers a range of popular, expensive high-end courses, some of which run across the A7 academies. Craftmanship is celebrated, and auteurs help ensure the Academy's international status. The organisation is professional, business-oriented, and tightly controlled – though with a lot of leeway for the stars if they deliver results that support the brand. Critics say that randomness prevails with individual star lecturers setting the direction, that the competitiveness can break necks, or that the Academy looks inwards with no interest in social issues. Such criticism is rejected because 'true art will prevail'.

## TRADITION AND RENEWAL

Developments during the first half of the 21<sup>st</sup> century weren't quite as hectic as had been prophesised. New energy sources were developed, and a growing global middle class ensured steady growth, dampening global conflicts. Developed countries have slowed down with a growing focus on the good life, ethics, social and environmental sustainability, and meaningful communities.

The Academy is experiencing a renaissance in its commitment to exploring the good life, sustainable development, and ethical practises, and it is seen as a cornerstone in modern democracy. This focus has made the Academy an international lighthouse and its programs, with goals defined by ethical values, can access the greatest minds of the time. The Academy hasn't grown except for in its influence. Education is still paid for by the state but since public student grants no longer exist, most students come from well-off families. Even so, extensive admission procedures ensure that only highly qualified students are accepted. All activities are centred around the Academy's ethical line of promoting what is good, beautiful, and right. The Academy works with international institutions, including the UN and esteemed technical and creative schools. The organisation is ruled with full sovereignty by the Presidium and its associated committees. Critics say that inertia and

nepotism characterise the Academy, negatively affecting the students that don't fall in line.

## **SOLUTIONS FOR TOMORROW**

The overhanging climate crisis has led to a general acceptance that humanity must find solutions to the problems it has created. New generations have grown up with unlimited digital access to knowledge, and institutions compete to make their knowledge available in a bid to be seen as relevant. The welfare society is under economic pressure, making the 2030s a golden age for entrepreneurs with a focus on solutions. Educations are 'unbundled', with workers mixing and matching courses as they go from contract to contract, usually short term.

The Academy was quick to implement sustainable goals and a shift in mindset towards creating solutions to global challenges. Academic knowledge as such was toned down in favour of solutions measured by their impact, their aesthetic, or technical innovation. Students are accepted based on the portfolio of issues they want to examine, and the length of education depends on how long it takes to work through complex issues. The first year and a half of education is paid for by the state; after that, the 'entrepreneur' must find external funding. The Academy has dispensed with formal and meritorious education, acknowledging that the important thing for students is to be attractive to companies. Abroad, the Academy is called 'The Incubator Miracle', with a large IPR section, and its model is copied everywhere. Critics say that art has been pushed into the background by business models and unhealthy competition, to which the Academy responds that its graduates and research have never been as relevant as now.

## **COLLABORATE. CREATE. CHANGE.**

While the 20<sup>th</sup> century focused on specialisation and efficiency at all costs, the environmental and social consequences of that obsession are now felt. Specialised knowledge is still crucial, but even more important is understanding value chains and cyclical processes, and having the ability to orchestrate cross-disciplinary collaboration. Automation has progressed rapidly, with greater demand for 'human' skills in problem-solving, creativity, and leadership. The labour market demands new environmentally and socially sustainable solutions – 'new collars' with the right mix of competencies.

The Academy saw the processual values in design methods based on a combined foundation of architects, conservators, and designers. After just 1 year, students mix specialisation with cross-disciplinary collaboration, along with deep learning in 3-week sprints followed by often global collaborative PROSIM teams (PROblem, Solution, IMplementation) that develop and implement solutions based on a list of the most pressing global issues. These issues are also evaluated by their estimated market potential, and companies apply to take part in the work. The Academy has established several campuses with workshops developed in collaboration with local industries, as students live on campus and engage in social activities. Critics say that not enough room is left for individual creativity and that collectives can't produce truly unique solutions. ■

**'Art is not supposed to change the world,  
to change practical things, but to change  
perceptions.'**

# **THE POWER OF ART IN FOSTERING FUTURES LITERACY**



As expressed by the French photographer and street artist JR, the power of art does not lie in its usefulness as a practical tool, but in how it widens our field of view and changes the way we think about the world. It can help us challenge preconceptions and break down prejudices by, for instance, exposing social injustices and hidden power structures. As sociologist and artist Eve L. Ewing puts it in an opinion piece for the New York Times: 'We need the arts because they make us full human beings. But we also need the arts as a protective factor against authoritarianism. In saving the arts, we save ourselves from a society where creative production is permissible only insofar as it serves the instruments of power(...) Art creates pathways for subversion, for political understanding and solidarity among coalition builders. Art teaches us that lives other than our own have value'.

With no shortage of social, societal, and environmental challenges facing us today, it is fair to say that some degree of reimagination is needed. Due to the interconnected and entangled nature of many of these challenges, we will be forced to accept that they often cannot be solved by practitioners in one domain alone. Moving forward requires collaboration across disciplines, which also includes the need for the speculative and investigatory view of art.

In its insistence on exploring notions like uncertainty, accountability, and responsiveness, as well as both the need for and limitations to human agency, art can be foundational in helping us anticipate and navigate the future. If we let it, art can help us build futures literacy by helping us challenge ingrained

ideas and assumptions and think and dream in alternative scenarios. This, in turn, might also prompt us to look at the present in a new light. Art, often working with uncertainty as a premise, dares us to be open to alternative possibilities while acknowledging our own role and agency in making the future come to pass. In this way, art shares the delicate and humble aim of futures literacy, which is the balancing act of responsibility and responsiveness towards the future.

Thus, the methods and values of art and futures literacy can coincide beautifully. Both can be vehicles for humans to actively enhance their perceptions and challenge dominant images of the future. As artist and philosopher Jonathon Keats puts it in the Forbes article "To Prepare People for a Perilous Future, UNESCO Is Teaching Everyone to Think Like an Artist":

'Futures literacy could be a positive addition to arts curricula worldwide, one of the rare skills that could profitably be taught to all artists working in media ranging from oil paint to community activism. The residuals could be considerable, given how powerfully art can nurture futures literacy in the general public. There is likely to be a compounding effect, in which every artist exposed to futures literacy could reach audiences in the thousands or millions. Those big numbers are needed if humanity is to take conscientious command of the vast power our species currently wields over the planet and future generations'.

If we allow them to coalesce and complement one another, the arts and futures literacy can let us engage with unexplored futures in powerful new ways and start imagining them into existence. ■



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*At 30<sup>th</sup> September 2021*

# exploring possible futures

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