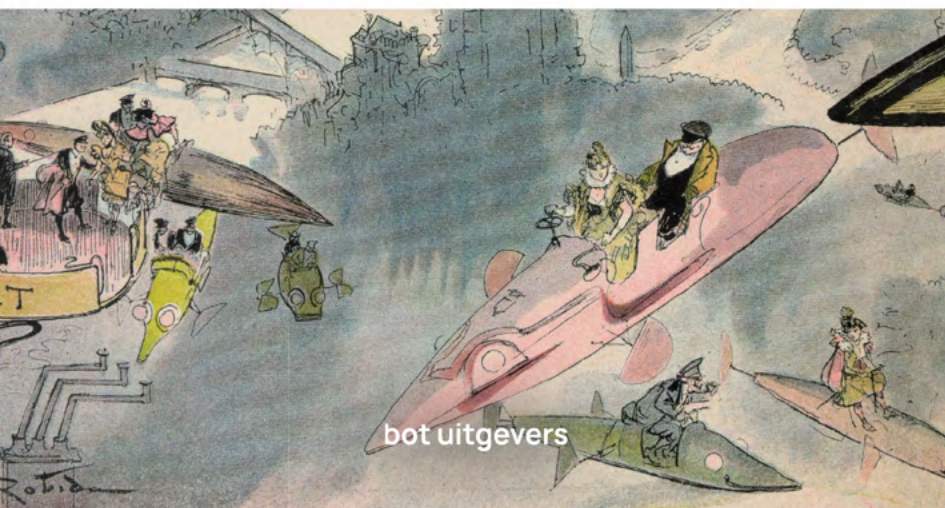


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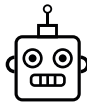
reflections on the invisible

edited by
Alexander Mouret



Brave New Human

Reflections on the Invisible



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P R E F A C E



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Preface

ALEXANDER MOURET



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When we first organized the Brave New World Conference in Leiden we aimed for an event that generated questions that inspired unpredictable answers: we hoped to provoke people to ponder dilemmas they normally would not consider seriously. During the various conferences that we have organised in the past few years, we have discussed questions around controversial topics such as trans-

humanism, immortality, or -perhaps the most harrowing topic of all, future of war. Though the focus of Brave New World is firmly directed towards the future, many of these topics required both an analysis of things that have already happened, as well as things that have not yet come to pass. We aim to do the same in this volume, although the question that is posed here was triggered by things that are happening, not in the future, but right now.

In the face of the COVID-19 virus pandemic, governments around the world have responded in various different ways, and the impact on societies across the globe has been profound. The question rises as to whether these effects will have a permanent effect of society, and if so, to what extent people in various countries will accept, reject or cope with some of the measures that are considered or have already been employed.

We decided to invite the speakers of the past Brave New World conferences, as well as a selected number of colleagues in related fields of enquiry, to reflect on what the world might look like after the Coronavirus crisis. In the free-thinking spirit of the conferences, we did not prescribe any specific topic or scope: all our contributors were given a complete *carte blanche* to express their thoughts and ideas on this topic.

I dare say that the response has been overwhelming. Straddling academia -the Natural Sciences, Technology, the Humanities, and the Social Sciences- and the Arts,

the essays in this volume provide glimpses of how people in the past responded to plagues, how the current COVID-19 crisis is affecting our current and future world, and how crises and future pandemics such as these may be best approached.

This volume should, I believe, be of interest not only to artists and academics, but also to policy makers and, indeed, the general audience.

It is my great pleasure to thank all the contributors to this volume, and the extended Brave New World community for their continued interest and support. I very much hope that you will enjoy the essays presented here, and look forward to meeting all of you again at one of our future conferences.

Alexander Mouret is the Director of the Brave New World Conference.

01



C H A P T E R



01

After the Plague. An Archaeologist's View

JORRIT KELDER

Pandemics are a recurrent theme in human history, and they have had a profound effect on European and Near Eastern society. In view of the current 'corona crisis', and the stark messages of death and despair that circulate on social media, it is perhaps good to note that few if any plague alone has ever brought about the collapse of a civilization.

Epidemics could and did cause havoc, depopulate vast regions, and cause immeasurable pain and grief, but they were never -as far as we can tell- solely responsible for revolutions and the collapse of government, the outbreak of (civil) wars. States collapsed because of a combination of factors: rampant corruption and dwindling tax revenues, conflict between the ruling elites, natural disasters, growing social insecurity, and yes, disease -but never any of these alone. Epidemics accelerated social, political and economic developments, but an otherwise robust society could deal with it, adapt, and survive –

even in the past, when medical knowledge was far more limited than ours. In the lines that follow, we will highlight some of the responses that are associated with historical epidemics –from the Black Death in the Middle Ages to what may have been Bubonic Plague in the Late Bronze Age.

BACK TO THE MIDDLE AGES

Everyone has heard of the Black Death that swept through Eurasia in the mid-14th century; killing an estimated 75 to 225 million people over the course of just a few years. Through contemporary records, we have a pretty good idea about the effects that this particular plague brought about. In Europe, where about 50% of the population is estimated to have perished, it resulted in significant tensions between, especially, the landholding upper classes and those who worked for these landowners. With about half of the labour-force gone, those that remained appear to have demanded higher wages –something the landowning nobles were probably not all too keen on. Indeed, we have various laws and stipulations, most notably the so-called ‘Statute of Labourers’, which was issued in 1351 by the English King Edward III, that explicitly prohibited labourers to demand wages higher than those in pre-Plague times. Moreover, this law also sought to limit the movement of such labourers, in order to ensure that people remained tied to their ancestral grounds and Lords. The fact that the Eng-

lish government found it necessary to impose remarkably harsh punishments -including imprisonment and branding- on those who refused to obey this law, such as serfs that decided to leave their masters in search of better opportunities elsewhere, indicates the difficulties government experienced in upholding this law. People demanded better pay and opportunities (sounds familiar?) and, especially in areas that were affected by war, more security. And they were willing to fight for it. Indeed, the post-Plague century (1350-1450) is marked by outbursts of uprisings, such as (in England) the Peasant's Revolt, the Jacquerie in Northern France, and the Transylvanian Peasant Revolt. Most of these were eventually squashed by military means, though sometimes by agreement between labourers and the nobility, but despite that, wages did (on average) double during this time. Ideas about how society was organized (and how it ought to be structured) were changing, too.

Through contemporary texts, including laws prohibiting the use of certain 'prestige goods' that were hitherto exclusively available to the wealthy landowners, we can glimpse the gradual rise of a middle class. Significantly, this is also the time of the first Christian reformations, such as the Lollard movement in England and the Hussites in Bohemia: both of these movements revolved around vernacular scriptures (not Latin), and thus did not require the presence of a (trained) priest or other Roman Catholic prelates. The Plague, though it may not have been the sole reason for all these changes, without a doubt served as their catalyst. It changed Europe for

good (both in the temporal and qualitative sense of the word).

BYZANTINE SURVIVAL

Though the 14th century plague, which is also known as the ‘Black Death’ or ‘the Great Bubonic Plague’ (or as varieties thereof), is probably the best-known historical example of a ‘pandemic’ (if we allow for the fact that the Americas were not known at that time, and thus not affected), history is riddled with similar events. We know of the plague in late Roman times —the so-called Justinian Plague— which is thought to have affected not only the Byzantine Empire but also its adversary, the Sassanian Empire (based in what is now Iran). Though it is difficult to assess the exact number of casualties, this particularly long-lasting plague may have resulted in the death of anywhere between 25 and a 100 million people over the course of some 2 centuries (from the mid-6th to mid-8th century AD). It would be logical to assume that, in view of these staggering casualties, Justinian’s Plague would have changed the world in much the same way as its Medieval Successor, the Black Death. But it didn’t, and that may be an important warning to historians, sociologists, and futurists: societies respond very differently to similar crises, depending (of course) on the availability and quality of health care, but also on such things as their respective history, social cohesion and ideology, and the nature and state of their economy.

In the case of Justinian's Plague, for example, recent scholarship has rejected the notion that this particular long-lasting pandemic caused any significant widespread change in the Byzantine world; neither in society, nor in religious or even economic respect. There are, in some areas, archaeological indications for population decline, though it is unclear whether this has to do with people actually dying from plague or whether we are instead dealing with people moving away from plague. On the whole, though, there is precious little evidence to support any notion of permanent population decline. Life, despite local setbacks, seems to have largely continued in much the same way: no major social tensions erupted as a result of the plague, nor can we discern notable ideological rifts. That is not to say the plague had no effect on Byzantium whatsoever. Indeed, it has been argued that Byzantium's inability to prevent the capture of Syria and Egypt by emerging Arab Empire, was at least partly facilitated by the loss of life (which affected conscription) and, as a result of that a decrease of income from taxes (which were needed to pay the army) caused by the plague. In the Sassanian Empire, the effect of the plague may have been more profound, for within a century after the outbreak of the plague, all of Mesopotamia and Iran had been overrun by the burgeoning Arab empire. But even here, the plague is unlikely to have been the sole reason behind the Sassanian collapse and other factors, such as strife within the Sassanian ruling houses, likely played a far greater role. The plague was merely the final nudge that pushed the

empire over the edge in the face of an aggressive, new, enemy.

This brings us to what I think may be the single most important aspect of epidemics, and indeed of diseases in general: their tendency to kill off the weak –both on a micro (human) and macro (state) level. Neither the Justinian Plague nor the Black Death resulted in the destruction of previously stable states or the collapse of a functioning government. Byzantium survived the plague well enough (it finally fell to the Ottomans in 1453, some 6 centuries later), and though there certainly were major socio-economic changes throughout Medieval Europe in the years following the Black Death, many of these changes had been long in the making –the Plague merely sped things up. The weak disintegrated, the strong adapted.

A BRONZE AGE PANDEMIC

Even further back in time, we may observe similar state resilience in the face of epidemics. A case in point is a plague that ravaged Turkey (then home to the mighty Kingdom of the Hittites) in the mid-14th century BC. Whilst we cannot establish the exact mortality rate for this epidemic, we know that its effects must have been profound. For in about 1300 BC, the Hittite king Muršili II prayed to the Stormgod to end an epidemic that had ravaged the country since the time of his father, king Šuppiluliuma I, and his brother, king Arnuwanda II:

“O, Stormgod of Hatti, my Lord, and gods of Hatti, my Lords, Muršili your servant has sent me, (saying) go and speak to the Stormgod of Hatti and to the gods, My Lords, as follows: “What is this that you have done? You have let loose the plague in the interior of the land of Hatti. And the land of Hatti has been sorely, greatly oppressed by the plague. Under my father (and) under my brother there was constant dying. And since I became priest of the gods, there is now constant dying under me. Behold, it is twenty years since people have been continually dying in the interior of Hatti. Will the plague never be eliminated from the land of Hatti? I cannot overcome the worry from my heart; I cannot overcome the anguish from my soul.”

These prayers were written down, and from these texts – which have survived on baked clay tablets – we know that this plague was brought to the Hittite Kingdom by Egyptian prisoners of war and that it ravaged the kingdom for some 20 years or so, killing seemingly indiscriminately and eventually even claiming the life of both Šuppiluliuma I and his son Arnuwanda II. When the latter died, attacks from neighbouring states let the hitherto mighty Hittite Kingdom crumble to its core territory around the city of Hattusa (in Central Turkey), and it is difficult to escape the idea that the plague must have been a major cause of this disintegration. It is likely, however, that this epidemic was not the sole reason for the disintegration of the Hittite state, and the text also suggest that the

new King's perceived inexperience was a major reason for his former vassals to rebel. But regardless of such additional stress-factors, it is worth noting that even the Hittite Kingdom would eventually survive this epidemic, and Arnuwanda's younger brother and successor, Muršili, would go on to recapture the lost territories and re-establish his Kingdom as one of the superpowers of its day.

Interestingly, there is little textual evidence from contemporary Egypt for a plague, though one diplomatic letter from the King of Babylon to Amenhotep III -who ruled in Egypt in the years just before the war with the Hittites- notes that Amenhotep's wife had died of (an unspecified) plague. The noted Egyptologist Arielle Kozloff has suggested that Egypt was indeed suffering from an epidemic (she suggests Bubonic Plague) during the reign of Amenhotep III, and this may explain various peculiarities in the archaeological and epigraphic record, such as a strange 8-year gap in the written record -a suppression of bad news- or the sudden and remarkable prominence of the hitherto insignificant Sekhmet, Goddess of War and Pestilence; Amenhotep ordered some 700 statues of this particular goddess to be made (compare to some 200 of all the other gods combined).

If Kozloff is right, it is likely that the disease continued to ravage the land of the Nile under the reign of Amenhotep's successor, Akhenaten; under whose reign the war with the Hittites erupted. Indeed, recent research (by, e.g., Kathleen Kuckens) into the demography at Akhenaten's capital city (at modern-day El Amarna) bear

a close resemblance not only to demographic patterns known from the Black Death, but also to those from the Great Influenza Pandemic of 1918. Whilst more research is required to be absolutely sure, the overall impression is that Egypt had indeed suffered from an epidemic, and that it was this plague that spread to the land of the Hittites. It is interesting to note that, in Egypt, this plague would have coincided with what may be one of the most interesting religious 'reformations' in world history. For it was precisely Akhenaten, often referred to as Egypt's "Heretic King", who was responsible for a major revision of the Egyptian system of beliefs –by focusing on a single, solar deity (Aten; the King's name means 'beloved of Aten') and abolishing the worship of other Gods. The repercussions of this move cannot be overstated (if only because it is very likely that some of Akhenaten's ideas eventually fed into other creeds, including Christianity: King David's Psalm, for example, which is sung in churches across the world even today, owes more than a little to one of Akhenaten's 'Solar Hymns'), and are most easily explained as a way to deal with stress –in this case societal stress caused by pestilence. The parallels with the rise of the Lollards and Hussites at the time of the Black Death are clear, although it should be emphasized that in Egypt, religious reform was initiated not by 'the people', but by the King (and, for all that we know, it was never wholeheartedly adopted by the majority of the population: both the new religion and the new capital at El Amarna were abandoned within years after Akhenaten's death).

RESPONSES TO EPIDEMICS

Epidemics, then, could and did have a profound impact on ancient societies. In an age when medical knowledge was limited, plagues were often ascribed to the wrath of the Gods and -for the Gods had to be angry for a reason- with some sort of injustice done by either the King and his entourage or the population at large. As a result, the Gods had to be placated. This could be done through offerings in the temples, and indeed, in Muršili's Plague Prayers, we find several references to his devotion and his actions to ensure that enough offerings are being made to the Gods (even though many of the temple staff had themselves succumbed to the plague). The very reason that Muršili bothered to have his prayers registered on clay tablets is, I think, so that he could use them as some sort of 'evidence', either for the gods or perhaps to his entourage (and by extension, the Hittite population), that he, the King, had done everything in his power to ward off disaster. Then, as now, people would look to the government to take measures to eradicate a plague. And if these measures did not work (or worked insufficiently), the blame would likely be placed with the government; potentially spawning unrest amongst the population, a rejection of the socio-political or religious status quo, or worse, open rebellion. In this light, Akhenaten's reformation of Egyptian religion may perhaps be seen as a preemptive move to highlight not his, but the traditional Gods' failure to protect Egypt. His decision to move his capital to El Amarna, away from the ancient capi-

tals of Memphis and Thebes, may similarly be considered as a (ineffective, as it turned out) move away from plague riddled, crowded, cities. If this line of thought is correct, Akhenaten's move could be compared to later practices, with Byzantine emperors moving their court to the less populated suburbs of Constantinople (rather than remain at the city's centre) during the Plague, or modern-day government's call for social distancing and preemptive self-isolation.

Isolation, or at least limiting the interaction between communities, has proven to be an effective way to curb the spread of infectious diseases. The Hittites knew perfectly well that a disease had to be carried by someone of something; in their case, they knew this to be Egyptian prisoners. But that did not stop them from trading with foreign countries or, under the rule of King Muršili, to reconquer the areas they had lost -including those territories from whence the plague had come! Justinian's plague, if we may believe contemporary chronicles, spread via the grain trade from Egypt across the Byzantine Empire (but *Yersinia pestis* strains closely related to the ancestor of the Justinian plague strain have been found in the Tian Shan mountain range, suggesting the bacteria originates from this region). But that didn't stop maritime trade, nor did it stop the Byzantine conflict with the Sassanian Empire. Life went on in much the same way. The Black Death is similarly thought to have originated in China, from whence it spread, via the Silk Road, to Genoese trading stations along the coast of the Black Sea. From there, it spread to Italy and the

rest of Europe. But it did not stop international trade, nor did it stop international conflicts (indeed, the plague falls squarely in the 100-years-war between England and France). Today, we know that the new Corona virus originates in Wuhan, China. If there is a lesson to be learned from the past, it would probably be that we should not trade with China, or face the consequences. In view of the fact that few of us are willing to forego on Chinese export-products (the laptop on which this paper was written, though designed in California, was almost completely assembled in that country), it seems perhaps wisest to respond to it with equanimity and not shut down our global economy.

For all our modern technology and biological insights –we understand the genetic makeup of both the bacterium that brings the plague and the virus that causes COVID-19– contemporary societies respond in very similar ways to epidemics as those in the past. Certain groups turn to their God(s) and, indeed, some consider the corona virus as a soldier of their God (until, that is, it turns on their own community), but most of us, in the West at least, simply -and sensibly- have faith in their respective governments. Few if any society so far has collapsed solely as a result of an epidemic. This one is unlikely to change that record.

Jorrit Kelder is a historian and archaeologist at Leiden University

02



C H A P T E R



02

Art and the Risk of Life

ROBERT ZWIJNENBERG

Now more than ever newspapers and other media are talking about how important art is in these difficult times. For example, I hear artists claim that they are eminently capable of offering solutions to the challenges of our time because they, like no other, always think and make outside the box. That seems to me a gross overestimation (and an unbearable cliché) that most artists would be capable of. Thinking out of the box is in any case not reserved for the arts. On the contrary! The level of crossing all borders, radical thinking and making, for instance in biotechnology, is rarely reached in the arts. So, what makes art so important or even indispensable?

At the end of 2019 I stumbled upon the book *In Praise of Risk* by Anne Dufourmantelle, a French philosopher and psychoanalyst. A book with a high philosophical content that requires attentive reading and also a book that touched me deeply as a reader. And suddenly the book has an almost creepy topicality. Everyday life is now dominated by risk on a scale that most of us – at least

in the Western world – have never experienced or even imagined. We only have to open the newspaper to read how difficult most people find it to deal with uncertainty, with the simple observation that life is risky, ambiguous and complex and that this has always been and always will be the case. People struggle with the fact that most questions of an existential nature cannot be answered definitively: that most answers hover between Yes and No. It turns out to be difficult to accept that we can't expect the perky certainty of celebrities in talk shows from scientists.

However, it is paradoxical in a sense that the elimination of all risk is also an important value for scientists – and not entirely unjustified, of course. This does, however, mean that, within biotechnology, for example, ethical considerations become merely a result of risk assessment. Ethical considerations are no longer considered separately from patient safety and risk assessment issues. If patient safety and benefits are guaranteed, then a new biotechnology application is almost by definition ethically sound. In the dominant biotechnological debate, there is therefore no longer a distinction between risk assessment and ethical considerations. Biotechnology thus contributes to the idea that creating a risk-free society is possible and the most desirable goal. Ethical considerations would only be an obstacle to achieving this goal.

Dufourmantelle describes how we have become accustomed to transferring risks to the logic of the market: the commercialization of risks by making us dependent on medical and luxury products that promise us a healthy, happy and risk-free life. Bungee jumping, game drives,

fairground rides sell us an illusion of risk with always a material safety net should the cord break anyway. We also buy off any risk with insurance and all kinds of protective services. And society as a whole seeks refuge in physical and electronic surveillance and control measures.

Dufourmantelle shows in her book that risk is the inalienable core of our personal lives and that trying to avoid but also denying risk leads to erasing your own existence. She writes: "The very utterance of zero risk is an absurdity because its actuality would annul the very reality of which it attempts to speak. Peril must be faced head-on. This is the least among the forms of courage that might save us. We can recover from, pain, catastrophe, or mourning, but evil will always claim a share. We will never be saved in advance." For her, the risk of life is not the risk of dying, but risk is intensity, the leap into the void. The risk of life is the risk of opening something that is hidden, of unexpected insights or perspectives. The risk of life is the possibility of a transformative event. Dufourmantelle's book is an invitation *to take further risks* as the only way to understand, accept and act upon the risk of life. The question that came to my mind when reading her book was to what extent can a work of art allow us to experience the risk of life?

In recent weeks I have never heard so many times a performance of the aria *Erbarme Dich* from Bach's *Matthew Passion* on radio and TV as ever before the Corona crisis. Apparently, the text but especially the poignant beauty of this aria somehow gives many people a handhold in

these confusing times. And I am no exception: *Erbarme dich* is a work of art that embraces you, makes you part of universal thoughts about sorrow, comfort and desire. The beauty of the aria has a transcending effect. I become part of something bigger than myself and I can let go of everyday life for a moment. The music thinks and feels for me, seems to answer unanswerable questions I ask myself and I only have to let myself sink into the embracing music. The aria gives me a feeling of security that I desperately need given the circumstances. I can easily think of dozens of other pieces of music that have the same effect on me, such as William Byrd's *Miserere mei Deus*. And that doesn't only apply to music: a painting, a novel or a sculpture can have the same effect. Edward Munch's *The Scream*, for example, is the painting that for many people expresses our contemporary confusion.

The function of art in providing consolation and beauty in the face of a bleak reality, or in providing an escape in which a certain enlightenment or relief takes place, obviously shows the relevance and urgency of art for any time. Art can represent the unspeakable and unthinkable, incomprehensible cruelty or injustice: think of the poems of Paul C elan or recently the *book I Will Never See the World Again* by the Turkish writer Ahmet Altan. Art can therefore sometimes help to make your personal life more bearable and accessible. But without wanting to detract from the value and authenticity on an individual level of such experiences of art, these experiences of art are in any case characterized by a certain degree of passivity. We ask something of art, we demand some-

thing of art without putting ourselves at risk or take a risk.

However, other approaches and experiences of art are also possible. And we have to ask ourselves whether insisting on the more traditional functions of art (consolation, beauty) keeps a much more important and far-reaching function of art out of sight. An approach to art that demands a more active attitude from the viewer.

I see such an approach to art in an essay by Vasily Grossman on the *Sistine Madonna* of Raphael, written just 10 years after the end of the Second World War. He writes: "The Madonna's beauty is closely tied to earthly life. It is a democratic, human, and humane beauty. [...] This Madonna is the soul and mirror of all human beings, and everyone who looks at her can see her humanity." He explains how this painting brought him back to the Treblinka extermination camp: "It was she, treading lightly on her little bare feet, who had walked over the swaying earth of Treblinka; it was she who had walked from the 'station', from where the transports were unloaded, to the gas chambers. I knew her by the expression on her face, by the look in her eyes. I saw her son and recognized him by the strange, unchildlike look on his own face. This was how mothers and children looked, this was how they were in their souls when they saw, against the dark green of the pine trees, the white walls of the Treblinka gas chambers." Grossman, scarred by the war horrors, takes all his experiences and emotions with him in his very personal approach to the painting in order to

put them to the test. The painting opens up to him as a space in which he does not seek confirmation or consolation; he does not seek escape or redemption. He allows the work to open up a space that is not characterized by 'a certain' experience, or a deeper wisdom, but rather by a cloud of associations that emerge in a disorderly way and call us to question not necessarily the subject of the work of art, but ourselves. Grossman writes: "How many times had I stared through darkness at the people getting out of the freight wagons, but their faces had never been clear to me. Sometimes their faces had seemed distorted by extreme horror, and everything had dissolved in a terrible scream. Sometimes despair and exhaustion, physical and spiritual, had obscured their faces with a look of blank, sullen indifference. Sometimes the care-free smile of insanity had veiled their faces as they left the transport and walked toward the gas chambers. And now at last I had seen these faces truly and clearly. Raphael had painted them four centuries earlier. This is how someone goes to meet their fate. The Sistine Chapel... The Treblinka gas chambers..."

In his approach to the painting Grossman confronts himself with his own ethical failure: I've never *truly* seen these faces before, or even: I've never truly *been able* or *willing* to see them. That testifies to the great ethical courage and self-reflection of someone who already described the extermination of Jews in extermination camps like Treblinka in an impressive account shortly after the war in its horrific and grotesque form. Grossman's contemplation is an approach to a work of art that

is not without risk: it is taking the risk of new experiences, emotions and knowledge – even if they are undesirable or disturbing. Grossman does not require a work of art to open up a space in which he feels safe as a viewer, a space in which he finds confirmation. Instead, he allows Rafael's painting to open up a space that ruthlessly tests his ideas and emotions about Treblinka and challenges an existential exploration of his own ethical attitude. In such an approach, the work can offer space for alternative ways of being in the world. The work of art becomes an empty space with undefined possibilities, without predefined structures, without goals. A space in which the things of the world have the freedom to appear without any imposed structure.

Raphael's *Sistine Madonna* can easily be approached from a more affirmative and passive stance in which beauty and obtaining consolation are central. The two mischievous putti at the bottom of the painting belong to our commercialized cultural heritage. In such an approach to a work of art, we will end up with little in our hands to accept the risk of life, to understand it and to embrace the intensity of life – at all costs. Grossman shows how a different approach to the work is possible. But that requires that we take a work of art as ground for an active investigation of our own ethical reality.

Robert Zwijnenberg is Professor of Art and Science Interactions at Leiden University.

03



C H A P T E R



03

The Coronial Age

ROANNE VAN VOORST

She was born on November 4, 2021: Corona, the first and only daughter of Marie and Jan. On the day she was born, she already had quite a bunch of dark hair, through which the nurses gently swept their fingers; by the time she was in kindergarten – with three namesakes in that class, all conceived during and named after the crisis – her father tied her hair in a braid every morning with hasty movements. In her penultimate year at university, in which Corona studied Artificial Intelligence and Governance because the professions within that framework were in great demand, when she actually wanted to become a nurse, hairdresser, senior caretaker, supermarket employee or primary school teacher – professions with the highest social status in society, professions whose value was paid not so much in money as in public applause, praise on the news and the fact that there was never a shortage, but always a surplus of candidates for this work, – that dark brown braid was exchanged for a prickly haircut that only needed a fortnightly hair trim to stay groomed and fashionable. Whether it was a coinci-

dence or not, each individual hair was exactly as high as the last report in which she and her contemporaries were described by analysts from the Youth Council and the Central Bureau of Statistics.

“The Coronnials are characterized by several traits,” that report said, “which set them apart from previous generations and youth cultures, including the Millennials and Generation Z:

Coronnials are aware of the existence of life-threatening risk, but are also convinced of the possibility of minimising that risk through technology and politics. Their strong belief in transformation, progress and development resembles a religion; their attempts to avoid health risks through dietary supplements, individual sports activities and group formation (see below) are rituals that strengthen their faith.

Corronnials seem to have a preference for strong leadership.

Where possible, they practice ‘economic autarchy’ or independent self-sufficiency. This is reflected in their way of living, working methods and other aspects of their lives (see below).

Although extremely socially active in the digital world, Corronnials show themselves to be a-social and even mistrustful towards larger social institutions, in the sense that they are constantly trying to ensure that they can support themselves. Working Corronnials almost all have their own online business in addition to their job with an employer (so-called “backup jobs”) and, unlike

their parents, they no longer save their money in banks but independently, at home, or through investments in objects such as gold or houses.

A remarkably high proportion of Corronials are interested in living in small, self-selected residential groups, where they are self-sufficient in terms of food, energy, water and waste processing.

Corronials are relatively afraid of outsiders: often they fear people from other, mainly Central Asian countries, but also foreigners who, according to the Corronials, behave mysteriously about their health. This is often because such outsiders do not use a tracking app that can detect viruses, nor wish to wear wristbands that could prove their immunity to the Coronavirus and certain other dreaded infectious diseases.”

“Nonsense.” Corona grazed, as she stroked a hand through her baby-soft hair. With a sigh that expressed despair rather than annoyance, she closed the report she should have read for her studies. A practical exercise was part of the reading assignment: Corona had to write a design for ‘a simple, digital tool (preferably an app) that would meet an important need of the Corronials’. But she couldn’t do anything with this assignment, she grumbled inwardly. Why do those academics, who have written these studies, keep repeating each other, she thought, even though they themselves clearly did not belong to this generation and therefore understood far too little about it to be able to say anything more nuanced about it? They should have asked *her* and her classmates

to describe her contemporaries, and not some ancient Boomer – probably another one who had survived the coronavirus and lived on ever since in the conviction that he had been given a second chance, including a second career, a second family and – remarkably often – a new haircut: long hair, in memory of the year that nobody could go to the hairdresser.

Corona recognized herself roughly as much in the description of her generation that this report offered as in an average horoscope episode of the E-magazine to which she had subscribed. Not at all. Because in reality there was not one, but at least two post-coronal subcultures – and the report failed to mention the second one.

The group described in the document called Corona and her friends “The Fearful”. The Fearful were people who shared their space and time almost exclusively with familiar acquaintances. People who, far after the Corona measures had been cancelled by the government, still stuck to the rules that governed the country at the time: one and a half meters distance to other people, do not gather in groups of more than three, do not travel when unnecessary, wear masks in public transport and quarantine for two weeks in case of any kind of illness.

Although the fearful people formed a large group in the Netherlands, they were above all a group with which she and most of her friends and family members did not want to be associated with. Corona filtered out the fearful on Tinder. That was not difficult at all: in their biography almost all the fearful people indicated that they

were only looking for a partner who was proven to be immune – in photographs they kept their wristbands next to their faces – green, to indicate that they were not only among the healthiest, but also among the least polluting inhabitants of the country.

Not that a fearful one would ever notice her. At university, the Fearful walked around her with vigilant glances and mouth masks. If you accidentally got too close, a deafening alarm immediately sounded from one of their mobile phones.

According to her parents, The Fearful sowed xenophobia through their behaviour, and when Corona saw the warnings for ‘unhygienic’ Take-Away drivers and supermarket workers tumbling over each other on the online platforms, she couldn’t help but agree with them.

The Fearful never slept outdoors: in the summer, some families would tour their homes in newly-acquired motorhomes, within a radius of no more than four hours. Microcapsules made mainly of glass with which, according to them, they experienced everything they needed whilst wearing a mouth shield.

The radicals within this category grew their own food, converted the guest bedrooms in their homes into workrooms and fitness rooms, and used apps that the government – after a long period of hesitation – decided not to introduce in the country because of the potential harmful effects on privacy. After the crisis, when the one-and-a-half-meter economy had begun, The Fearful had refused to enter restaurants or move into their of-

fices, and no one could force them. Now that they had done a good job during months of remote work, it also became more difficult for their bosses to argue that their staff had to stay in a room with dozens of others. Most employers did not dare to enforce presence and sulkingly agreed to an online variant of the contract: they were too afraid that they would be sued by The Fearful for an obligatory increase in health risk.

Corona herself identified with “The pragmatics”. They knew of course that The Fearful were right. There were lurking dangers everywhere. A new pandemic would break out, most likely within Corona’s lifetime. Pandemics almost always claim their victims in several waves, and any relaxation of health measures would therefore lead to more, new or other infections. More deaths. More shortages, more broken hearts, more hospital beds occupied.

But the Pragmatics saw this as a risk that had to be taken – for the economy, for social cohesion and – above all – for their own spirits. The Pragmatics were fed up with their living rooms and shabby mirror images early in the crisis and increasingly longed for a life outside their house. They constantly taught each other and their children about the difference in potentially short but relatively carefree and maximum life, ‘real life’ in their terminology, and living a longer life, in a state of fear. The latter was what they believed the Fearful did, calling it ‘dead life’.

The Pragmatics enjoyed their lives and flirted with death. They rolled up their sleeves before taking to the

streets, proudly showed their bare wrists to whoever they wanted to see, refused to install health apps, deeply embraced their peers, visited their elderly mothers and bought more plane tickets than they had ever enjoyed before, because after the first crisis they said they felt obliged to contribute to the rebuilding of the economy. At restaurants where people without immune proof were not allowed to enter, they walked by with their chins raised; in the next restaurant they spent a considerable part of their savings, showing this as a gesture of philanthropy.

Of course, Corona was well aware, the first crisis did not allow these subcultures to emerge out of thin air. She felt with her right index finger the tattoo she had had put on the inside of her wrist a few weeks ago: a small bat. At best, this crisis had defined different categories of people in the country more distinctively, just as disasters tend to reinforce what is already there, to shed light on attitudes and plans that previously existed only in darkness.

The Corona crisis showed that the country was inhabited for decades by the fearful and the pragmatic: people who would never understand each other's opinions and behaviour because they did not share each other's deeper convictions and values, just as it had also accurately shown where the weaknesses in the system were: among the lonely, the children and women in violent domestic situations, the small businesses and the many workers without a permanent contract. In the relationships of couples who were already struggling before the crisis,

but who until then had been able to alleviate their mutual annoyances with individual visits to cafes, gyms and extramarital lovers.

Corona opened her laptop and touched the spikey, dark hair on her head with her flat hand – something she often did when she was deeply absorbed in her thoughts. Then, surprised by herself, she began typing frantically. “For today’s generation of Corronials (who, by the way, live in a culture that is more heterogeneous than popular literature suggests) I recommend two main interventions. One is a government policy that materially protects the weaker members of society from external shocks and disasters, so that they do not become increasingly vulnerable, after each crisis. Secondly, I recommend an educational ‘resilience’ pathway: a training that teaches all citizens from a relatively young age to mentally cope with crises and loss. This could translate into an online training course, compulsory at all online and offline schools, which could teach people to get used to the uncomfortable idea that shocks and grief are inherent to a human existence and that the idea that technology can control and overcome disasters, is naive. The training could include online, mental resilience training; digital classes and debates led by death counsellors or other experience-based experts to help people become familiar with the concept of death; supervised use of psychedelics that are known to provide comfort in agony; and lessons in tranquillity preservation and effective collaboration.”

She sat back. Stared at her screen, and sighed, for she knew this would be impossible to translate into a simple app.

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04



C H A P T E R



04

Brave New World

MALKA OLDER

What the future looks like after this pandemic will depend a lot on how the pandemic ends – with a vaccine? With a sudden scientific breakthrough? With a slow return in isolated jurisdictions after rigorous quarantines? I don't presume to guess. But I can tell you what I'm hoping.

I'm hoping that we learn to value our elders, listen to their stories, that we visit them with renewed joy and care. I'm hoping that we come out of this willing to pay as much attention and take as drastic action on slow-moving threats to the young, like climate change, as we do on rapid-onset threats.

I'm hoping we visit our loved ones more and also keep using technology to feel close when we're far away.

I hope we have a renewed appreciation for teachers, nannies, and other care-givers, that we pay them and support them appropriately. I hope we understand the critical importance of education for all so that future generations will make better decisions. I hope we seriously consider how to promote responsible use of information technologies.

I hope for health care systems that consider the importance of preventive care for baseline resilience, that are equitable, affordable, easy to access, and include nutrition and mental health.

I'm hoping we rethink work and meetings and travel. I would love to see a world in which more people travel for experience and visiting and far, far, fewer for work meetings they don't even want to go to. I'm hoping cities begin to consider how to encourage tourism that is responsible to locals and to the planet.

I'd like to see us use the flexibility of digital technology to design work and education options that are accessible for people in a wide range situations, from disability to neurodiversity to caregiving responsibilities. We need to stop pretending that synchronous, in-person business and learning is always the best or default option, just because it's the option that most powerful people are comfortable with; we have the technology, and the creativity, to do better.

I hope for a burst of exuberance in practicing, supporting, and funding live arts, and that we continue finding virtual options for those who can't attend in person.

I hope that the people who never felt bound by borders in the past will remember what it's like not to be able to leave the country you're in or go to the country you'd prefer.

I'm hoping we will consider our impact on the environment in all our decisions.

I hope that this experience reminds us of the possibility of unexpected, drastic, global change and opens the

potential for us to consciously create change for a better world.

Malka Older is a sociologist, an aid worker, and the author of the acclaimed science fiction thriller *Infomocracy* and the collection ... *And Other Disasters*.

05



C H A P T E R



05

COVID-19: The invisible titan of biopunk

RACHEL ARMSTRONG

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CACGAGUAACUCGUCUAUCUUCUGCAGGCUGCU-
UACGGUUUCGUCCGUGUUGCAGCCGAUCAUCAG-
CACAUUCUAGGUUUCGUCCGGGUGUGACCGAAAG-
GUAAG¹

¹ The first sequence of RNA letters of COVID-19 (Corum and Zimmer, 2020).

The COVID-19² pandemic is radically altering our understanding of what it means to be human. Within the human microbiome, the community of viruses known as *the virome*, comprises the most abundant and fastest-mutating genetic elements on Earth. Unlike other members of the microbiome, the virome does not just colonise host surfaces but also inhabits tissues where, through its rapid evolution it can hack our genes (Gilbert and Cordaux, 2017)—even when there are no symptoms of disease. Playing an active role in key cellular functions like training the immune system and protein expression (Feschotte and Gilbert, 2012) the virome writes the story of human survival and adaption (Virgin, 2014). Retroviruses³ play a key role in this process, as they replicate by converting their RNA genome into the DNA, which becomes integrated into the chromosome (i.e. provirus⁴). Blurring the boundary between human information and virus, around 8% of the natural human genome is composed of ancient viral “fossils” which have left their ge-

2 COVID-19 is a new species of coronavirus discovered in the year 2019 that causes symptoms in around 20% of people infected. Those who go on to develop the disease have symptoms ranging from cough, fever, difficulty breathing and a viral pneumonia which may need oxygen therapy or ventilation. The mortality rate of COVID-19 is 0.7-3.5 % depending on location and access to hospital care.

3 Retroviruses are an important family of RNA viruses that in humans include HIV and human T cell leukemia virus (HTLV).

4 “Provirus”, is a particular form in the lifecycle of a virus that is integrated into the genetic material of a host cell and can be transmitted from one cell generation to the next through cell replication without causing damage to the host cell.

netic payload behind (Feschotte and Gilbert, 2012). The best known of these “domesticated” viral genes are the *syncitins*, which were produced by an ancient retroviral infection that played a role in the formation of the placenta (Zimmer, 2012). In other words, in deep time, viruses have not just shaped the evolution of people but also catalysed the evolution of an entire class of animals—mammals.

“... the virus particles move in and inject their package of disruptive RNA. The offending cells soon explode, casting out a cloud of more tailored virus, and the debris is cleaned away by various noocyte and servant scavengers. Every type of cell originally in his body—friend or foe—has been studied and put to use by the noocytes.” (Bear, 1985, p41)

Not just bodies, but all surfaces also have a characteristic microbiome, compelling us to understand more about what kinds of microbes we live alongside and rethink our role in shaping their distribution, as the kinds of viruses we are exposed to will—like it or not—shape what we become.

With no effective vaccine to prevent its further transmission, this titan biohacker causes massive destruction to human lives, not least by spotlighting inequalities in our societies. Already it is changing the way we think. Those that can afford to, retreat indoors, trying to keep our microbiomes safe from invasion through social distancing.

As gregarious creatures we seek online social connection in our domestic fortresses, sharing reassurances and anecdotes that reassert our humanity. Our routines overturned and livelihoods threatened, we inevitably reach troughs in our ability to cope with the sudden change in lifestyle and sporadically turn on one another. Outside, we can no longer trust the safety of the public realm that has become a foreboding space clouded in danger, which—without cognitive dissonance—cannot now be ignored.

We've known this tipping point was coming. Back in the 1980s, a subgenre of science fiction called "biopunk" emerged. A derivative of the cyberpunk movement, it described a post-natural world of hackable biological information that was specifically concerned with genetic engineering and invasive modification of the human body. Drawing attention to the advancing fields of genetics, artificial intelligence and the possibility of technologically directed evolution, the genre focussed on the consequences of their convergence through the shortcomings of governments and corporate corruption, setting the scene for revolutionary changes in identity and politics. For example, Greg Bear's "Blood Music" (1985), one of the first novels in this genre, describes the evolution of a meta consciousness from the modified blood cells of a renegade biotechnologist, which rapidly assimilate their human host along with many other organisms.

A wave of *grinders* followed, citizen scientists applying the hacker ethic to “upgrade” their bodies with a range of do-it-yourself kits such as subcutaneous magnet fingertip implants and medical ID implants, making human “enhancement” within reach and more commonplace (Yetisen, 2018). Meanwhile, laboratory protocols and GDPR regulations tempered our paranoia of wayward biological material being misdirected by human design, but just as we were starting to feel comfortable with the idea of *transcending our natural limits*, a perfect storm—ecological crisis, advanced molecular biology techniques and unprecedented urbanisation—occurred, throwing new emphasis on the ability of nonhuman agents to radically shape our biological future. Having provoked the ire of Gaia through the environmental damage catalysed by the Anthropocene (Crutzen and Stoermer, 2000), the myth of anthropocentrism, which places the human at the apex of creation, is now set to collapse as the biopunk titan COVID-19 reminds us that *people are not in control of evolutionary events*.

(*A virus is*) “a piece of bad news wrapped in a protein coat.” (Medawar and Medawar, 1984, p.275)

A dramatic shift in perspective rivalling the Copernican revolution is taking place, which alters the organisational logic of Darwin’s evolutionary Tree of Life. Studies of genetic material that are recovered directly from environmental samples—the science of metagenom-

ics—attest the Anthropos⁵ is no longer the central figure around which the biological universe is organised. Through massive molecular scale archaeological digs, metagenomic screening for genetic codes reveals the colossal range of microorganisms—or microbiota—that we live alongside including bacteria, archaea, protists, fungi and viruses, are the planet’s original world-makers and life-shapers. From this microbiotic perspective, humanity is a mere host for microbial activity, carefully sculpted by prokaryotic ancestors.⁶ Microbiota not only underpin the world’s ecosystems but also exist as coherent communities that colonise our bodies comprising the *human microbiome* (Lederberg and McCray, 2001). At a ratio of 1.3:1 microbes-to-human cells (Abbott, 2016), some are commensals, some symbiotic and around 1,400 of the possible members of the human microbiome are pathogens. While this may seem like a large number, they account for much less than 1% of the total number of microbial species on the planet (Nature Editorial, 2011). The existence of the human microbiome overturns any notion of the “purity” of human identity. Our newly discovered “bodies-as-ecosystems” are now vectors for the distribution of the microbiome. More than a matter of biological identity, this choreography between microbes

5 The Anthropos is an exalted male. In Gnosticism, the macrocosmic Anthropos is regarded as the Platonic ‘ideal animal’, autozoon, or a divine pleroma, which contains archetypes of creation and manifestation.

6 Prokaryotes are unicellular organisms that lack a membrane-bound nucleus. They are divided into two domains, Archaea and Bacteria.

and humans is a natural laboratory for shaping our lives and well-being that primes our immune systems, informs our rituals of hygiene, influences our health *and modifies our genetics*. Microbes are Nature's biopunk.

With an uncertain route to recovery, where people describe symptoms coming and going weeks after falling ill, even in mild cases, COVID-19 is also genetically changing us. Even the pursuit of a vaccine involves “hacking” our genes. The race to a cure has prompted ingenious approaches such as developing a DNA-based vaccine that enters cells in targeted tissues and causes them to produce a virus-like particle (VLP) to stimulate an immune response (Waterloo Media Relations, 2020). The most obvious and direct effect of the virus, however, is the erasure of genetic legacies for those who have died from the infection and the favouring of certain *virotypes* that survive by natural selection. Triggering specific host responses to infection by activating the autoimmune and inflammatory processes within a host, different *virotypes* may also account for the unnerving range of symptoms which make it so hard to predict the outcome of COVID-19 infection (Virgin, 2014). Worryingly, the development of “herd” immunity—which ultimately helps resist the spread of contagion—is complicated by the virus remaining dormant in some patients⁷ (Yoon and Martin, 2020). While COVID-19 does not appear to cross the pla-

⁷ This bad news is tempered with new reports that the immunity discrepancy is the outcome of false positives and people have, therefore, not been reinfected (Saplakoglu, 2020).

centa (Paraluppi et al., 2020) newborns may be infected by their mothers (Dong et al., 2020), COVID-19 has also been found in semen and testicle biopsies that suggest it can be directly transmitted to offspring (Song et al., 2020). Exactly what outcome of these genetic changes might be, they will only be discovered in the future, when more about the effects of COVID-19 on transcription are known (Virgin, 2014). Further changes will be sustained by epigenetic influences (Jablonka and Lamb, 2006; Corley and Ndhlovu, 2020) some of which alter our psychology⁸ (Powledge, 2011). Temperamentally, we may behave more neurotically as conditions like social anxiety, agoraphobia, germaphobia, or even anthropophobia become the norm.

Systemic social changes are inevitable, ranging from never shaking hands, to routinely wearing face masks, requiring immunity passports to travel and using health surveillance mobile phone apps to connect our personal information with health centres. for contact tracing. Medical technologies will become increasingly digital, with the widespread use of artificial intelligence as an early alert tool and as a way of developing vaccines (The Medical Futurist, 2020). We may even re-think our bio-punk technologies of survival. Rather than adopting the anthropocentric perspective of modifying ourselves, we may develop ways of cultivating beneficial organisms as part of our microbiota. For example, new forms of cook-

8 The role epigenetics plays in psychology is contested in ongoing scientific debate (Mitchell, 2019).

ing that encourage beneficial organisms to colonise our guts may boost immunity and protect us from gastrointestinal illnesses. We could even encourage the pro-biotic colonisation of our living spaces, making space for microbiota by building them *homes*. Select microbial colonies within different bioprocessor types can be arranged to regulate the microbiotic composition of our living spaces. Surveying the microbial content of our domestic environments and liquid excrements, this *external immune system* for would ensure our homes are free of pathogens. Such principles have already been demonstrated by the *Living Architecture* project,⁹ which used natural and genetically modified microbes to turn household waste into cleaned water, electricity and a range of biomolecules (Armstrong, 2019) but could also be directed towards regulating microbial composition (Ieropoulos, Pasternak and Greenman, 2017). Working along with our microbiomes is not, however, a panacea and the delicate host/microbiota relationship, especially the virome, needs constant surveillance through appropriate hygiene rituals that carefully garden our invisible, personal communities. By appreciating the importance of our microbiota and understanding how they are part

⁹ The *Living Architecture* project ran from April 2016 to April 2019. Funded by the Horizon 2020 Research and Innovation Programme under EU Grant Agreement no. 686585, it brought together experts from the universities of Newcastle, UK; the West of England (UWE Bristol); Trento, Italy; the Spanish National Research Council in Madrid; LIQUIFER Systems Group, Vienna, Austria; and Explora Biotech, Venice, Italy.

of us, provides new opportunities to respond to the significant challenges that characterise the 21st century. Re-centering the locus of control as modes of multispecies diplomacy, rather than human decree, will enable us to actively negotiate the conditions for our ongoingness in ways that lead to a more ecologically, and ultimately more evolutionarily coherent future.

“The virome is in us and on us and is likely to be recognized through metagenetic analysis in the future as a friend at times and, at other times, as a more complex enemy than we supposed. Both camaraderie and enmity are likely to emanate from the virome in currently unrecognized and unsuspected ways.” (Virgin, 2014)

A *microbiotic parliament*¹⁰ is no utopia but a hard-fought evolutionary Babel, where at any time the complex tower of relationships that enable human life on Earth, may collapse. This complex process can only be read as a function of deep time, which necessarily exceeds any single person’s lifetime. Whether we like it or not—visibly, or invisibly, habitually, or belligerently—COVID-19 has already changed us. We may just not accept it yet. Notions of getting back to “normal” will have invisible new baselines, where all the little changes set in motion

10 The term “parliament” references Bruno Latour’s notion of a “parliament of things”, which can be considered as a public space where we communicate with nonhumans on an equitable footing to establish laws, power structures and mutual respect (Latour, 1993).

by COVID-19 add up to shape our psyche, behaviour, culture and the physicality of our species. At first, these adaptations may seem reactive, or temporary, but as they persist, they will become a familiar part of us.

“The hierarchy is absolute. They send tailored phages to individuals or groups. No escape. One gets pierced by a virus, the cell blebs outward, it explodes and dissolves. But it’s not just a dictatorship. I think they effectively have more freedom than we do. They vary so differently—I mean, from individual to individuals, if there are individuals, they vary in different ways than we do. Does that make sense?”
(Bear, 1985, p11-12)

Even when the present pandemic has passed, new zoonoses arising from animal species that we’ve subordinated and abused, will change us again. Each successive wave of trauma and response will alter the baselines of our identity. Each time, we will seek to reassure, re-define and reinvent what it means to be human—and will continue to do so, until the question itself becomes irrelevant.

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06



C H A P T E R



06

Living the Screenlife

COVID-19 measures make rule of law-based governance of the digital world more urgent

MARIETJE SCHAAKE

The COVID-19 measures confine hundreds of millions of people to living life online. Children connect to their teachers, patients to their doctors, businesses to their customers and artists generously share their performances online too. 'Screenlife' means more searches, social media posts and video calls than ever before. It leads to increased time spent online at a moment when hours lived digitally were already peaking. Politicians and internet users are grateful for the availability of all these connections and the vital role of the internet. However, they may easily see connectivity as synonymous with technology giants like Amazon, Facebook, Google, Netflix and now Zoom. Companies that were powerful yesterday are acquiring more customers, data and insights about us today and will likely be stronger tomorrow. The question is how the COVID-19 crisis will impact policy proposals that are on the table in Europe and elsewhere.

While some may be postponed, they should not be revoked. If technology giants are indeed considered of critical importance or 'too big to fail', more regulations and safeguards are needed ensure they serve the public interest, and that democratic principles are preserved.

Technology companies understand the historic moment too and are turning it into policy momentum. Netflix and YouTube have agreed to streaming at lower quality to ensure internet traffic would not be congested in Europe even if no signs of that were eminent. Lawmakers presented the step as a victory over the companies, but reputation gains are more likely to be for the other side. Companies that until recently were in sight to be regulated now see an opportunity to brush up their reputations with constructive initiatives to mitigate the harms the COVID-19 brings. The question is whether regulators will be convinced by these charm offensives. There is a looming risk of trade-offs between concerns about the dominance and power of technology giants in the online information ecosystem, against a realization of our collective dependence on them. Helpful and harmful can go hand in hand, but the one should not compensate for the other. Cooperation between WhatsApp and the World Health Organization means they are joining forces to facilitate easily accessible information about the virus while in parallel there are unprecedented amounts of myths and lies about the pandemic going viral through encrypted messages shared by users. The Secretary General of the WHO warned against an 'infodemic' with dis-

information spreading faster than the virus itself, while both are equally dangerous.

The risks of misleading information reaching people in search of solutions, as well as fraudulent products being offered as though they solve or protect, has not escaped political leaders. Chancellor Merkel, Prime Minister Rutte, Commission President Von der Leyen all warned against rumours and disinformation and urged people to consult experts instead. These clear warnings, or their own view under the company hood, may explain why technology platforms are intervening and taking down content more than ever before. Steps that were long demanded by politicians, and resisted by corporate lobbyists, are rolled out as if companies never operated differently. It may be tempting for politicians to see these unprecedented steps as sufficient, after all, companies went further than before. But for those concerned about privatized norm setting, and a lack of independent oversight, great responsibilities should be clad in legal frameworks.

Diligence problems in the absence of clearly mandated standards become clear when we look at video platform Zoom. The company experienced a true growth boom as COVID-19 measures forced people online. But increasingly the lack of cybersecurity, privacy and democratic protections is making headlines. Only after it was revealed that data was stealthily shared with Facebook, information was sent to Chinese servers, encryption was not

end-to-end as the company said and Zoom-bombing became a new phenomenon, did the company try to course correct. The New York Attorney General and the Federal Bureau of Investigation are now investigating possible violations of the law, as the German Foreign Ministry as well as Google have banned Zoom use out of concern for the lack of confidentiality and security. Zoom is only the latest in a line of companies which' rapid growth has challenged lawmakers and law enforcers to keep up.

New tensions emerge when we look at proposals for a variety of new digital applications, that promise to help curb the COVID-19 crisis. As governments are scrambling for ways to loosen strict physical distancing measures, companies are stepping forward with data suggestions, or proposals to build contact tracing apps. Such apps that were used in a number of Asian countries have seen the sacrifice of privacy protections. A coalition of European researchers is now developing conditions and solutions to make sure apps are designed and used in line with the General Data Protection Regulation. The GDPR is known as one of the most significant efforts to curb the limitless power of technology companies and to empower individual rights. It was a clear response to excessive data gathering for commercial and intelligence goals that sprawled after 9/11. It is a strong reminder of how previous crises have often led to erosion of fundamental rights.

While the COVID-19 crisis is far from over, it has revealed the backlog in ensuring principles are leading and en-

sure the most powerful technology companies in the world comply with the rule of law. Yet the need for privacy, security and anti-trust protections is greater now that the technology giants are even more anchored in our lives, societies and economies. When the crisis is behind us, and we return to our lives without physical distancing, the excessive power of commercial technology platforms should not be forgotten. The COVID-19 crisis should instead be a reminder that the lack of anchors in the rule of law and the absence of rules and standards, checks and balances, does more harm than good.

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07



C H A P T E R



07

Annihilation: Viral Refractions of Reality

MASHYA BOON

In light of the global crisis caused by the Corona-virus, I think it is fruitful to reexamine our frames of reference concerning our notions of radical transformation as well as our perception on viruses. To help us reframe and perhaps even reinvigorate these concepts within these confusing times, I believe that one recent film can productively fracture conventional patterns of thought when it comes to reconfiguring our outlook on destruction and disease. The film in question envisions a life-altering alien force that crashed onto earth and devours the world as we knew it. While the title might suggest otherwise, *Annihilation* (Garland, 2018) is not about the nullification of life. Rather, it ferociously deals with a refractory re-creation of reality.

The fashion in which *Annihilation* figures a novel kind of being human opens up avenues for exploring how 'the posthuman' is imagined within contemporary cinema, while forwarding a salient stance about mutation and

life. Posthuman literally means: an entity which is beyond the human as we know it. Posthuman theory in accordance generally questions the perception of human nature as universal and hegemonic, while overthrowing Enlightenment-legacies which ingrained a discourse of exceptionalism of the rational human subject into our society's fabric of thought. This paper analyses the ways in which *Annihilation's* iridescent 'Shimmer' with its viral-like growths produces evocative instances of terrifying transformation, which seem painfully poignant in times of our current COVID-19 crisis. This film poses a philosophical thought-experiment by questioning "what counts as life?" By scrutinizing *Annihilation's* viral tendrils in light of Karen Barad's and Donna Haraway's theories, this paper highlights how we might benefit from a transformation in anthropocentric thought. The film's stance can be aligned with a new-materialist view of nature: a strange (re)turn to an otherworldly nature where the boundaries between technology and the organic are mixed on a cellular level, where hybridity and impurity prevail as the formerly discrete units of human life are scattered across a novel posthuman mosaic of convalescing mutation.

"It wasn't destroying. It was changing everything. It was making something new."

This line, uttered by protagonist Lena (Natalie Portman) in a final scene, explicitly verbalizes that *Annihilation* is not about absolute destruction. In this scene, a military official interrogates Lena, after returning from

the Shimmer. This alien environment came into existence after a meteor crashed onto a lighthouse at the southern coastline of Florida. The Shimmer expanded exponentially, threatening to take over the entire globe. The 'infected' area which it spread to, is designated as 'Area X'. The military took great precaution to prevent the general public from knowing about it. Still, the military can only guess as to what the Shimmer's nature entails: a religious event, an extraterrestrial event, a higher dimension? They have many theories, but few facts.

The entire environment within the Shimmer has gone berserk: different species of plants intermix their usually distinctive structures into one new conglomerate whole. Not only plant life took on this hybridizing quality; also fungal, animal and even human lifeforms are affected by the Shimmer's transmutations which produce stunning new composites of life. Faun-like deer with bark-like antlers endowed with fluorescent flowers and prehistoric bear-like monsters with exposed craniums who adopt their victims last cry populate Area X. The way the Shimmer operates is explained halfway by expounding that magnetic forces within this zone literally *refract* all particles present in the environment. Not only light gets deformed into fantastical rainbow hues that seep into mother nature, but also all previously discrete units of DNA of various species are scattered and remixed into new syntheses by the Shimmer's prism. All matter becomes susceptible to radical change within its ontological core. Humanoid shaped 'plants' and crystalline 'trees' only seem to be the beginning of this plane-

tary metamorphosis. All living species are refashioned, immanently altering the traditional categories of what life on earth entails.

Tracing the etymology of the word ‘annihilation’, it is composed of two parts which in a contradictory sense annul each other while fortifying the word’s meaning too. Annihilation in its primary definition indeed means “to reduce to utter ruin or nonexistence”: to annihilate is to reduce something into nothing. However, although the main component of the word consists of the Latin word ‘nihil’, which denotes ‘nothing’, the prefix ‘an-’ designates that the word behind it is not (or is without) the thing that is stated behind it. So in fact, ‘an-nihil-ation’, literally means ‘not nothing’. The word seen in this way rather encompasses a lacking of nonexistence. It connotes something that is *without emptiness*. Therefore, in its origins, the process of annihilation entails more ‘a becoming of something’ than ‘a reduction to nothing’. Aphoristically speaking, within the mechanisms of destruction resides the potential for unbridled creation itself; the making of something radically new.

Yet the common connotation of ‘annihilation’ does signify the state of being annihilated, the utter extinction of absolutely everything. This linguistic and philosophical paradox that underpins the word ‘annihilation’, also lies at the heart of the film’s core concept. *Annihilation* intricately conceptualizes a more-than-human, other-than-human, inhuman, posthuman state of existence which relentlessly *refracts* each and every aspect of life and calls into question what it means to be human

or nonhuman, animate or inanimate, dead or alive. The film savagely systematizes an almost cancerous and even *viral* structure of being which exudes a towering form of growth and mutation of everything that is present or that has a presence in our earthly existence. Within the Shimmer, the indiscriminating force projecting out of the lighthouse encapsulates all life with its megalomaniac metamorphosis. It is this kind of extreme presence of a lacking of nonexistence which annihilates the rational world and our human selves. Yet this an-nihil-ating force does not reduce reality to sheer nothingness, it in reality entails a radical state of being immanently *without emptiness*.

CATAclysmic SCIENCE-FICTION

Annihilation as a filmic text constitutes a mesmerizing mosaic as well, reassembling and refracting multiple bits and pieces from many different cultural texts, specifically within the genre of science-fiction – like *Stalker* (Tarkovsky, 1979) and *Alien* (Scott, 1979), but also *2001* (Kubrick, 1968) and *Under the Skin* (Glazer, 2013) – remixing it into a new kind signifying mesh that mirrors but also alters these previous texts in significant ways. The particular manner in which this text envisages its all-encompassing transmutation, presents a fascinating instance to analyse the manner in which the science-fiction of *Annihilation* represents the nature of a new kind of not-only-human nature through its apocalyptic an-

nihil-ation. As history teaches us, disaster animates writing, speculation, thinking of the End; it prompts us to profoundly ponder our current condition. And the realm of science-fiction has historically been a very fertile ground for these kinds of nuclear meditations.

The genre of science-fiction, has long been recognized as a narrative form which is particularly apt for allowing philosophical ideas to roam freely through the fictional simulations it creates, and to reflect on existential questions rarely encountered elsewhere. This genre typically poses a radical 'what if scenario' which finds its roots within the fears and anxieties present within a certain society and extrapolates it through the fantastical simulation it produces. In this sense we could read these cultural texts as metaphoric mirrors of ourselves, sometimes through a distortion, other times through crystallization of a certain condition. But almost always these reflections deal with the interrogation of some kind of intrinsic myth of humanity. In the case of *Annihilation* this mirror not only figuratively but also literally crystallizes and even refracts the human condition.

Here I wish to emphasize the importance of *Annihilation*'s visualization of its speculative 'apocalypse'. As Haraway states in 'Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin' (2015): "It matters which stories tell stories, which concepts think concepts" (160). She argues for a reconfiguration of the concept of kin and kinship between all earthlings as "kinds-as-assemblages" (162) instead of framing life in the restrictive categories of species, to overcome the menaces of

our current age. Haraway, in her new kind of manifesto after her famous Cyborg Manifesto from 1985, urges: "If there is to be multispecies ecojustice, which can also embrace diverse human people, it is high time that feminists exercise leadership in imagination, theory, and action to unravel the ties of both genealogy and kin, and kin and species" (161). This unravelling can be set on by "the webs of speculative fabulations, speculative feminism, science-fiction, and scientific fact" (160). The way she calls forth her 'Chthulucene', an epoch she envisions following the Anthropocene, is profoundly embedded in fiction as a form. "Mathematically, visually, and narratively, it matters which figures figure figures, which systems systematize systems. [W]e need stories (and theories) that are just big enough to gather up the complexities and keep the edges open and greedy for surprising new and old connections. [For] renewed generative flourishing cannot grow from myths of immortality or failure to become-with the dead and the extinct" (160-1).

Annihilation forms one of these infringing figures which holds the potential to unravel the ties of genealogy and kin, and kin and species. *Annihilation* systematizes a kind of ecological system which goes beyond the human by going beyond normative species boundaries. This film prompts us to conceptualize a transspecies recreation or 'refractalization' of life which portends to annihilate the distinctive and hegemonic category of the 'human'. *Annihilation* might be making a kind of kindred claim to the one Haraway advocates: "No species, not even our own arrogant one pretending to be

good individuals in so-called modern Western scripts, acts alone; assemblages of organic species and of abiotic actors make history, the evolutionary kind and the other kinds too” (159). The reassembling force from *Annihilation* resurges to us from out of our own minds, while refracting life in a viral fashion, forcing us to radically rethink our conceptualization of our human selves. But what kind of figure of refigured humanity does this text figure through its mathematical, visual and narrative refractions?

REFRACTING OURSELVES WITH AN AGENTIAL CUT

In *Annihilation* our human existence is nullified by an alien force which functions as ‘a prism of life’ that remixes, doubles, copies and rewrites all life through its unyielding refractions of our reality. The etymological root of the word ‘refraction’ stems from the late-Latin word ‘refractionem’, which translates into a rupture or separation of things. Refractionem is a noun of action from the past participle stem of the Latin verb ‘refringere’: to break up. Furthermore, the word refraction has a common lineage with the word ‘fringe’. A fringe is an outer edge, a margin, a periphery, a border. We could see this word’s meaning as operating by means of resetting certain boundaries, redistributing demarcations and through the process of separating new assemblages are craved out. It is this kind of refraction that forms the recreating life-force in *Anni-*

hilation. In a way the Shimmer *cuts* things as much ‘apart’ as it does also cut things ‘together’. Herein we could see *Annihilation*’s refraction of life as operating in a kindred manner to Barad’s notion of the ‘agential cut’. This is a cut that does not slice entities into an opposition – like the separation of dead and alive, passive and active, subject and object, or human and non-human. Rather this agential cut ‘enacts a *local* resolution *within* the phenomenon of the inherent ontological indeterminacy’ (Barad, 2008:133–original emphasis). This kind of cut ‘jointly cuts together’, just as filmic frames are spliced together within the cinematic apparatus. And just as species are cleft together on a cellular level by the viral Shimmer.

Annihilation’s agential refraction assembles, it cuts through the segregating categories of hegemonic species life and establishes unruly and refractory ‘intra-actions’ between new indeterminate forms of mosaic life. *Annihilation*’s refraction in essence is literally something that ‘re-fringes’, it reorders the borders of light while transforming the ontological boundaries of life. In *Annihilation* we as a refracted human figure can potentially become intertwined with all the categories and forms of life by means of its cataclysmic and viral refraction. *Annihilation*’s alien force indeed operates like cancer or a virus; it is a part of you, it is you, it is ‘alive’, but it refracts a towering form of growth and mutation, it’s making something other out of you, transforming you in the process by making something radically new. So the annihilation of *Annihilation* does not necessarily entail a breaking up of older taxonomies, rather in encompasses

a refractory resetting of all fringes, an endless entanglement of former borders. What was at the margin becomes all-encompassing and ubiquitous.

Annihilation prompts us to rethink the ways in which life is structured, not unlike the manners in which (next to Haraway and Barad) Bruno Latour's 'network', or Tim Ingold's 'meshwork', or Andrew Pickering's 'mangle', or Gilles Deleuze's 'assemblage', or Timothy Morton's 'dark ecology' rethink the matter of life's matter. What is most salient about *Annihilation*'s rhizomatic entangled ecological thinking is the fact that it seems to function by means of a kind of unintended design, it has a sort of agency without intentionality. Like categories without hierarchy, much like how Anna Tsing in *The Mushroom at the End of the World* (2015) conceptualizes the unintentional design of ecosystems and the accompanying indeterminate encounters that transform life. One could read this agency without intentionality in the line Lena tells the military official in the very end of the film: "I don't think it wanted anything".

In reconfiguring this kind of thinking – an unintentional, cancerous, viral, refractory and refracting logic of life – *Annihilation* presents us with a perverted perspective which might liberate us from the annihilating Anthropocenic state we are in. If one reorders the borders and hierarchies in which we are structured to think, feel and see, than one might see a tumour growing from human cells potentially as a new structure of life instead of a devastating disease. Than one could perhaps see the ecologically disastrous state we are in as presenting

us with regenerative disruptions, or a pandemic as cataclysmic reset. But to enter this kind of state of mind we have to recognize that the disaster has already happened, that concepts like intentionality and agency no longer exclusively coincide with the category of the human as we have figured it up to now and that the loss of self we might experience does not necessarily constitute the destruction of existence. It might only constitute an annihilation of anthropocentrism, while it simultaneously assembles a potent posthuman potentiality.

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08



C H A P T E R



08

Brave New COP

TIM REUTEMANN

Flora is still shaking as she mounts her bike to get home. This was scary – One of the kitchen workers in the camp had come down with breathing problems. He had served meals to more than two thousand refugees from the flooded Northern territories, just yesterday.



Cycling through the heavy downpour, her thoughts circle around infection chains in the camp. The virus just CANNOT get there. No running water, no soap, everybody is malnourished and three doctors for 100,000 people. It would be a complete disaster. ([Covid-Refugee Camp](#))

Thank god the test came back negative. Apparently his trouble was just from the smoking kitchen fire or something. ([Global Alliance for Clean Cooking](#))



Back home, she first checks the battery of her family's solar

home system ([Solar Sisters](#)). It's barely enough to get her phone up to 10% – that is at least enough to chat with her Friday for Futures group for a bit. Good. She needs her friends emotional support right now.



Nobody is online. That's weird – on a normal day, their channel is bustling with activity 24/7. But there is a DM from Ergün: “Hey, Flora!!! This new place is amazing! Come join us over at the online COP!” ([Virtual Diplomacy](#))

<UNFCCC – Public Area>

Ergün just finished his third energy drink and pushes his cigarette into the ashtray, still typing away furiously against the Brazilian proposal, when he gets the alert – finally, Flora is online! He quickly submits his counter on the negotiators discussion board and signs it off with his official Germany.

Enough work for today – He leans back, pops open a beer and uses the quick teleport button to move from the Article 6 sub-committee on transparency to the public area entry gate. An involuntary smile appears on his face as he spots his friend. Ergün's fingers flow over the keyboard rapidly – <hug> and a couple of right-arrow clicks till the freshly spawned Avatar with the “Flora #FFF” name tag is marked as target for the hug.

Flora is still disoriented, just figuring out how to move around with her avatar as the message pops up:

<Ergün wants to hug you>
<**accept**> <reject>

She involuntarily giggles – that cute black-and-white pixel art animation makes her feel the virtual hug from her distant friend in her body, warming her heart. The voice message arrives a few seconds later: “Flora! So glad you made it! Come, let me show you around...”

<Ergün wants to take your hand and lead the group>
<**accept**> <reject>

This time they walk – two pixel art avatars, holding hands, passing through the busy landing zone full of first-timers entering the public metaverse around the permanent Conference of The Parties to the United Nations Framework Convention on Climate Change – also known as COP365. Their first stop is at the Greenpeace stall. They got a whole bunch of “Observer Status” invites for climate activists from the global South ready – without one of those, Flora could not log into the official part of the COP. After a brief verification of her Twitter handle by Greenpeace, she is in.

<**Open Quick Travel Map**>

The official area is shaped like a world map and features a pavilion for every country. Most of them run on locally hosted servers, with various UN institutions providing infrastructure for the nations who couldn't find someone ready to install a Raspberry Pi with a 3G network in an official government building. Towering above the world map there is an Eiffel-Tower like superstructure. It kinda looks like the Eiffel tower anyway, despite its 29 legs. One for each Article of the Paris agreement, and plenty of in-between sub-committee meeting rooms at the intersections.



Ergün takes her to the Pacific Small Island pavilion and from there straight into the packed sub-room of the [#FFF](#) gathering of the tribes. Despite the hefty lag for the European and African activist, this is their preferred location. Rumour has it that the privacy at the bigger continental servers is compromised.

Flora gets dozens more of those virtual hug requests the moment she gets in. Tugged in under her blanket in a dark room, with her sister sleeping in the bed next to her, she is now with all her best friends. But she is also tired and scared and just looking for someone to pour her heart out. It's been a hard day.

She turns back to Ergün: "Can we talk privately?"

<Ergün invites you to a private video session on the Nairobi UNEP Server (Beta Feature)>
<accept> <reject>

Flora's face is barely visible with the dim light from her phone screen as she tells him about her day in a whisper, trying not to wake her sister in the bed next to her. And after some comforting perspective taking, she is done for the day. "Goodnight".

Before she logs out, Ergün asks: "Should we keep the recording private or unlock it for the public?"

"Yes, sure, I don't mind sharing." Her phone's battery is at 1% now, and so is her own energy level. Time to sleep. Last thing she does is a retweet on Ergün sharing the video.

On the next morning, as soon as the sun is up, she plugs in her phone. Fast-charging now, thanks to their solar panels. Oh, that is a lot of notifications. The video went viral, with tens of thousands of views already. Including retweets from some very famous people. She starts responding with emoji's and "thank you's" to the replies, but soon realized that new posts are coming in faster than she can respond.



That's when she opens the DM's and finds an [interview](#) request from an organisation called "Democracy Now". Flora replies, and

after a short chat they agree to do the interview throughout the day, with her filming at the hospital and the kitchen worker adding some video material from the camp. The democracy now editing team puts it all together into a three minute clip by the same evening. Riding on the viral wave of the first clip, it passes a million views within the first hour.

Predictably, people start asking “how can I help” – and a few obvious steps are suggested in Flora’s mentions. Get a proper kitchen for the camp. Buy up liquor, distil it with some starch into a proper disinfectant. It all costs money. Flora doesn’t have any. All she could do was to write down how much all that would cost – a few thousand dollars. More than her family had made in the entire last year.

At least twenty people asked: “Is there a donation link?” – But after trying for hours with all the gofundme’s and paypals suggested to her, she still can’t find a way to withdraw an influx of global online cash in Uganda.

Helen had been watching the drama from afar, and started to feel remorse for that young Ugandan lady. A few posts on the Darkmarkets later, she identified an arms traders account with a multi-year history of verified transaction dating the South-Sudanese independence war. To add some legitimacy to the transaction, she sends the funds from her

ANON_12ZTW8cp8iwBxtcX3Rbt8yCD26f7-Ec5xfR account via this fancy “[Green Climate DAO](#)” shilled by Vitalik recently. It’s still brand new, so her contribution gives her enough voting power to pass 300 Milli-Bitcoin straight on to a fresh wallet. She packs the private keys and the geolocation of the trader into a DM to Flora and adds: “You will receive about five million Ugandan Shilling in exchange for this code at this address”.



Flora is super sceptical when she gets the message – it looks like a classic Nigerian Prince fraud. She forwards it to Ergün with a lol. Ergün checks, double checks and finally replies: “I can confirm that the code is a real Bitcoin wallet private key. Magic internet money, the real thing. Here in Berlin, I could trade it for cash at any ATM.”

The geolocation Flora received from is in the embassy quarters in Kampala. Overcoming her fear, she takes a matatu for the two hour ride. Empty, except for three guys in wearing black stockings over the head and skiing glasses – a bit overdone, but at least they are protecting themselves. The tallest one is on a rant about the “[Tullov Pipeline](#)”, but they immediately stop their conversation as she gets in and keep quiet until they reach the destination. They get off at the same corner that Flora got with the Bitcoin message.



The guys muster her silently for a couple of seconds. Finally, one of them asks: “Bitcoin?”

Flora, already expecting to get robbed at gunpoint, decides to cooperate: “Yeah”.

To her surprise, the guys relax and wave her over. “Come, this way.”

They lead her to the exact geolocation from the message – it is a service entrance to a massive mansion just next to the Kenyan embassy. The door is unlocked and opens into hallway. Three armed securities are sitting around, guarding another door. Everybody is wearing full-cover face masks and sunglasses. What the hell.

The tall guy says in a warm voice: “You go first girl, our business might take a while.”

She approaches the guards. “I have Bitcoin. I need money”. Nodding: “Alright, come in.”

There is a full glass counter, and on the other side sits a small, elder lady. After Flora shows her the code and she types it into her computer, she says:

“Ah, you got funding from the Green Climate DAO! Good on you. Cash or do you have goods ordered?”



“Ye... Yes, Mam. Cash please.” She knows where to buy the smoke-free kitchen appliances, the company had installed one just

like that in [her school](#) last year. All she needs is some cash on hand.

The lady counts the money with a machine. It's five million Shillings in freshly printed notes. "Need an envelope?"

"Yeah, thanks".

She smiles as she packs the cash and passes her the envelop. "Stay strong Comorada! Welcome to the team. Together, we shall win this war."

Flora orders a motorcycle taxi straight to the kitchen-shop. Let's get this done! While she is still waiting for the bike at the corner, the three guys reemerge from the door, carrying a heavy sports bag. They give her a military salute and head off to the West.

3rd of May 2021, Glasgow. Greenpeace bought her a ticket for the ferry via Mombasa. The retro fitted sailing cruise ship started in Cape Town, full of African climate people. It was a great ride.

Flora now stands on the big stage, about to give her speech at the Green Climate DAO opening celebration – within 3 month of trial operations, she had helped install 12 more solar-hybrid kitchens in refugee camps across

the country. With the help of the other #FFF activists, the DAO financed 67,000 more such installations all across the world.

After a round of applause, Xhin takes over, introduced as the coordinator of the Green Climate DAO core developer team by the moderators:

“A few MBTC at a time, with phone-based real-time verification, repeated transactions allow rapid peer-to-peer trust-building in climate finance at zero overhead cost, eliminating the need for intermediation by accredited institutions. Out of our first round of funding, we financed installations reducing about seven million tons of CO₂ per year, with only 0.3% of the total sum lost and unaccounted for, making us several orders of magnitude better than UN average. Unfortunately, we currently have no knowledge on what happened with those funds. Thank you.” They take a bow, and leave the stage with a smile, while thinking to themselves: “Or at least we can plausibly deny knowing...”

#LiquidRising

Tim Reutemann is a science fiction author and frequent

09



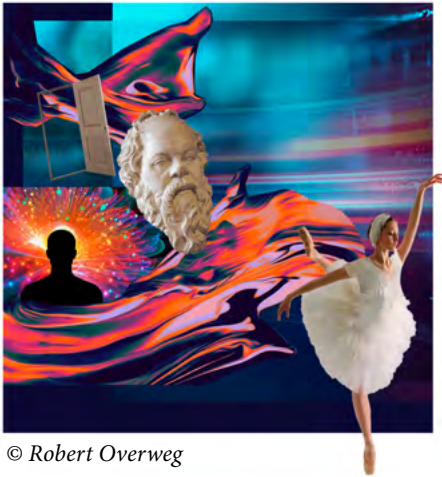
C H A P T E R



09

Surfing the Waves of Change

ROBERT OVERWEG



© *Robert Overweg*

If Covid has shown us one thing, it is that our predictions, roadmaps, and strategies are fragile.

The closest we can come to predicting the future is by sketching out situations we want, based on probabilities, and extrapolations of what was already happening and is currently unfolding.

Based on facts, logic and critical thinking.

How do we need to adapt our education, mental wellbeing, and business to a post-Covid world?

BUSINESS WISE

Companies that have not digitized their way of working and thinking are now experiencing the negative impact of their lacklustre behaviour. The ones who have not digitized will need to do so rapidly or will perish.

Our increased digital way of working through Zoom, Slack, etc. could turn our society into a more robotic state, with less empathy and less human connection.

We should balance this out by spending a large amount of our time on liberal arts, going into nature, practicing critical thinking, learning about empathy, and mindfulness. These are all proven methods that can make us more empathetic.

Anti-fragile thinking and working will be the new norm. This means companies that do small experiments in diverse fields will have revenue streams from multiple domains to mitigate the impact of a possible crisis.

People who can quickly adapt to new situations and are able to find solutions will become even more valuable.

You are looking for people who view the world in a holistic way and can think and work beyond verticals.

MENTAL HEALTH

In the pre-corona era, stressed out personal already cost the Netherlands € 2.8 billion a year. This excludes the hidden costs of unproductive people who are at work but are not really present. This also excludes the loss from the lack of joy in life.

Other pre-Covid predictions state that within 10 years, 25% of the workforce in The Netherlands will be less deployable due to, —you guessed it: too much stress.

Do you think this number will increase or decrease due to the Corona pandemic and possible recession?

We need to take more drastic steps towards mental wellbeing and resilience. We know about the gut-brain connection, we know what food can heal us, we know that yoga can turn back the effects of stress on our DNA. Plant based medicine is available to treat people who have to deal with treatment resistant depression. The trials are currently being funded globally. —It's all available, we just need a different mindset and different approach.

This way of thinking and training the mind to find new possibilities should be an integral part of our education.

EDUCATION NEEDS IMAGINATION

We need to spend more time training our imagination, so we can explore new possibilities. We need flexible and autonomous thinkers, to come up with solutions to our complex problems. People who are able to adjust and adapt on their own.

The current focus in education is leaning too much on producing worker bees for specific job roles.

This time is over, because this won't give us relevant skills for today's uncertain world. People are slowly waking up to this new reality.

What the people and our society needs, coincides beautifully with a shift towards skill based learning. This thinking is completely in line with the [European Union's agenda](#)¹.

We can scale this skill based way of educating through online platforms. Such platforms were responsible for more job placements in engineering than any American University. It's democratizing education at scale.

Google, Apple and Microsoft have also further increased their foothold in education, since the start of the pandemic. They will push online learning even further.

¹ https://ec.europa.eu/education/policies/european-policy-cooperation/development-skills_en

Imagine having the best teachers, the latest knowledge, instantly updated to everyone, worldwide.

Where you can learn on your own time, based on your personal interests.

This sounds too good to be true, because it's currently not the case. But what if we shift towards also spending time teaching critical thinking, art, and cognitive flexibility, through these online platforms?

If you are of the opinion this change is impossible. Join the group who said that education could not be ported to online learning. Or the group that said that healthcare consults should always be physically one on one.

A lot of things we as a society said were difficult, we are doing right now.

Of course, this is not all that we should do for education, this should be supplemented with bodily movement like in Montessori education or as in Tagore's educational philosophy.

But attention spans have decreased the last few decades and the flow of content has increased. I try to keep it short.

MAKE THE CHANGE

It's up to us, the teachers, companies and individuals to guide us through this uncertainty. Through small experiments and by working together and letting go of our old models. You can become the front runners and can sketch out our new society in cooperation.

By focusing on what we do have power over: our education, our mind, and our businesses.

Reach out if you want to build something together, or follow us on www.adaptablemindset.com

Robert Overweg lectured at MIT, SXSW, The Olympic committee and the European Commission. As an artist he exhibited at Centre Pompidou and the media biennial in Seoul. As a creative he has lead innovation teams for large corporates and he supports new-school education platforms like Codam and Techgrounds.

10



C H A P T E R



10

Tomorrow arrived yesterday

IVO DE NOOIJER

After a long economic boom resources are stretched. Many people balance on the edge of subsistence. Trying to eke out a living, forced to compete for marginal opportunities. The narrow margin of survival means that loss of arable land and lower yields, due to the changing climate, result in widespread malnutrition. When a sudden illness rapidly spreads across Europe, the results are devastating. Fortunately, we do not live in the first half of the fourteenth century, and thankfully, the current pandemic is not as lethal as what we now call the Black Death.

PESTILENCE, DISRUPTION BEFORE IT BECAME FASHIONABLE

People in the fourteenth century, in many ways like us, had to cope with the harsh disruption brought upon them by this plague. With fewer means at their disposal and less understanding of the intricacies of microbiology,

they learned lessons the hard way. Contemporary sources highlight the contagious nature of the disease. People in close proximity to each other were at risk of being infected. The response by some cities was a lockdown to stop the spread of the disease. Not called a quarantine yet, a term which stems from the Venetians policy devised several decades later in response to the onset of returning waves of pestilence. Other cities stopped the spread by maintaining strict hygiene standards, standards which appear modern even to our eyes.

Milan's powerful Visconti rulers were able to protect the population and limit the death toll by a strict regime of social distancing. A well-known anecdote tells that they sealed the houses of victims, sometimes while the victims were still inside. Similar to modern day lockdown, such measures turned unpopular soon and lost effectiveness when breached. Another example is offered by Nuremberg, it was spared the worst of the pandemic. It is believed to be the result of its public health system and clean and paved streets. Contemporaries may have also attributed the success to the pogroms of Jews in the city in response to the outbreak.

The suffering, physical and emotional, due to the disease and the measures people took to protect themselves, caused great changes. Although the first plague wave was followed by smaller and more local recurrences, the memory of these trying and uncertain times remained alive. For example, in folklore and art the sudden reversal of fortunes and death as the great equalizer, took on more significance. When using words such as

'Black Death' and 'the Plague' even we refer to this event almost 700 years ago. It does not come as a surprise that this event also had significant social impact. Its impact offers an insight into possible effect of today's crisis.

STATUS GROUPS, THE FEW AND THE PROUD

The recurring pestilence, the climate changes, local conflicts and wars, sped up the urbanization in Europe. Small communities, off balanced by death and shortages, were vulnerable to disruption. Villages across Europe disappeared, many to be never rebuilt. The paradoxical effect was an even stronger influx of outsiders into cities. Especially cities with industrial resources or which were part of the contemporary trade networks. These cities were in many regions hit very hard by the disease. Yet, the number of people and dynamism (even in times of plague) ensured opportunities would present themselves, for both survival and a better life.

The inhabitants of cities were in most cases less than enthusiastic to welcome these outsiders. Most were penniless and were a possible source of infection. In an age before steam engines and steel, cheap labour was important, but without trade or customers, these immigrants offered little in the way of new revenue for their potential employers. This did not deter the immigrants, they came nonetheless, driven by hope and fear. People who had no place in the existing social structures and hierarchy. In an age where individualism was not in fashion

and a dubious survival strategy, new groups formed and existing ones closed themselves off.

Groups emphasized their characteristics and values to protect their privileges and identity and bring order to the world in trying times. The growing cities and their inhabitants challenged the nobility and clergy. However city dwellers themselves fragmented in guilds, brotherhoods, associations, neighbourhoods. Of course these tendencies existed before the onset of the plague, people reached for a familiar tool to combat their insecurity. The reflex was to close off and compartmentalize. Hold on to what they had, fearful that another spin of the wheel of fortune would take it all away. Conscious of where they belonged, who 'their people' were and who were not, and the rights and privileges that accompanied group membership. It led to the formation of status groups.

AND NOW FOR SOMETHING COMPLETELY...

Modern society is different in many ways and COVID-19 is less lethal and better understood. Yet interesting parallels can be drawn. Not only based on a shared human nature but also some of the wider trends and society's response. Climate change is affecting people across the globe in ways we cannot fully oversee. The developed world is struggling with increased migration. War torn Syria, parched sub-Saharan Africa and chronically unstable parts of Central Asia create a stream of refugees and immigrants. The political spectrum has splintered in

many European countries, although in two party systems a semblance of unity is maintained, major parties are equally divided. Opinions on health care, environment, immigration, free-market economy or national identity are framed not as resource conflicts but as value conflicts. Leading to increased self-involvement (i.e. taking it more personal) and less perceived common ground.

Mark Carney, former Governor of the Bank of England, suggested that the COVID-19 crisis may lead to an increased emphasis on values over market value. A idea floated by other authors as well. This can be illustrated by the use of arguments based on national identity or ethnicity to close borders or place blame for the outbreak. Most authors probably do not have these values in mind but they support their suggestion. Although the use of such arguments could be a ploy by cynical leaders, many of these leaders were elected touting these values. Elected in countries with democratic and liberal institutions and traditions.

So, if the insight of Mr. Carney and other authors is correct, what values can we expect to take centre stage? Will it be traditional liberal values on which science, the existing world-order and commerce and industry are based? Or will it be a more heterogeneous collection of values. Values which reflect other ideas about society. Even before the onset of this pandemic, discussion flared up about issues which according to many had been settled. The share of young people questioning the right to abortion is increasing. Debates at us schools about whether creationism should be taught next to Darwin-

ism and of course the efficacy of vaccines. Debates conflicting with the foundations of liberal values.

DO WE HOLD THESE TRUTHS TO BE SELF-EVIDENT

These examples challenge what educated people perceive as inalienable rights and fundamental scientific facts. In a world plagued by COVID-19 many well educated people expect discussion about vaccination to peter out. If our experience with the current US administration is anything to go by, their approach to facts and consistent ability to create their own narrative, offers little certainty that this pandemic will open people's eyes to these rights and facts. Especially as it is not a 'fair fight'. The challenge to the existing framework does not need to play by the existing rules and does need to offer a widely acceptable alternative.

There is no law, natural or manmade, that compels people to adhere to broadly acceptable or widely held beliefs. Neither is there a necessity or an obligation to place new or re-used old values in the context of widely accepted societal values. Quite the opposite, by offering a new (or very old) frame not based on the principles of the existing values, the new frame will be incompatible. Beliefs held by a small minority without the need or interest to frame them in pre-existing values only as part of their own set of beliefs can work just fine. It is not a new system beating the old. It is more akin to everyone going his or her own way.

This may, in fact, increase their appeal. Next to offering an alternative, the offering an opportunity to differentiate by making these beliefs 'defining values'. Setting yourself apart and 'othering' people who do not share your values, supercharging their importance in the process. The phenomenon of the 'bubble' is not the result of COVID-19, however the fact that its onset is seen to be related to 5G, Chinese biological warfare or the US 'deep state' illustrates that this disease is more likely to reinforces prior held beliefs than change them. The threat makes people dig even deeper fox-holes.

SOME ARE MORE EQUAL THAN OTHERS

Next to differing values and beliefs a group needs to have rights and privileges to make it a status group, instead of a special interest group. These rights and privileges need to be only applicable to the group in question. Although equality before the law is considered a cornerstone of the existing Western legal framework, it is not a requirement to have functioning legal system. Laws can be drafted with specific groups in mind and applied in such a manner. Rights and obligations can be bestowed on groups, bodies or other collectives that bring people and resources together, e.g. associations, corporation, towns, trade unions, etc. If a special interest group helps to elect an official and expects that official to share and uphold their values, e.g. by tax breaks or privileges.

By granting the exercise of religious beliefs protec-

tion against being restricted by law, personal beliefs and values effectively take precedence over generally applicable laws. If this protection is also awarded to a legal entity, such as a company, it creates a privilege for an entity based on its personal values, i.e. the values of the people that form or control the entity. In 2014 the US supreme court decided that a closely held for profit corporation can exercise religion, and argue successfully that certain laws do not apply to it. This right, to ignore conflicting laws, is based on the rights granted by another law. However, the decision effectively makes religious belief superior to the law, thereby permitting a corporation to become a law unto itself.

The current crisis, its global nature and inability of Western governments to effectively protect people further erodes confidence in our current system. This inability is underscored by supranational problems such as cybercrime and climate change. It makes Western governments look unable or unwilling to protect their citizens. For many voters this is not a philosophical debate about principles, or an inquiry into the origins of these failures. It is a response to a perceived rift and subsequent dissociation, between 'them' and 'us'. Their chosen group offers a personal connection, recognizable distinct values, not abstract ideals and impersonal distance of government. All it needs is politicians giving them the tools to fend for themselves, enter populism. Politicians who do not wish to continue in the tradition of the system in which they were elected, can simply set the system against itself.

A BRAVE NEW WORLD

Humans are group animals, what has changed is the ease with which groups form, no longer restricted by the need for proximity. Technology also enables groups to create visibility and leverage their presence, for example to obtain privileges. From on-line groups, small communities up to multinational companies, each one can easily see and be seen. External pressure and virtual access to every conceivable point of view in high definition and surround sound, offer compelling answers and alternatives to mainstream society. Groups with their own beliefs and values and with rights and privileges to match.

Making these collectives a home of sorts for people struggling in today's world. Add the benefits of personal connection, identity, shared values, privileges and there are plenty of elements to hold on to and exclude others from. Status groups can form around religious beliefs. Not only around traditional ones, nature offers plenty of opportunities to form a believe around, eco-warrior, druidism or animal rights activist. Even the Jedi census phenomenon in many English speaking countries offers interesting potential. Ethnicity is an another well know basis to form exclusive groups, groups based on passports, physical characteristics, digital coat-of-arms or genetic origin. Trade unions can be modern day guilds, offering a digital and international trade union and gaming group rolled into one.

But groups can also be formed around a myriad of other aspects, for example around genetics, abilities,

community service, life style or purpose. Genetics may sound farfetched but until about a century ago the female half of the population was excluded from voting because of their genetic make-up. Groups that have certain genes, lack them, modified, added or deleted them could be formed, it opens the door to a genetic passport for each subspecies of humanity. Your intellectual abilities may set you apart, academics as a status group is not new. Until several centuries ago, students and professors at universities had unique rights and privileges, from taxation to penal codes. Similarly, military service as a prerequisite for certain privileges, a mix of Roman traditions and Starship Troopers. In today's crisis, health care workers could merit special privileges. Or the inverse, those who do not live a healthy life, restrict their rights if they burden society. Privileges for those that live a healthy life style. The economic purpose of groups offers plenty of opportunity as well, extra territoriality for corporations or privileges for shareholders or employees.

THE END OF 'THE END OF HISTORY'

This society bound by group ties and group privileges may seem the triumph of privatization, it isn't. Private only exists next to public. The public sphere in Western society is founded on the idea of individual people giving up part of their liberty to form a political order, creating a government and becoming citizens in the pro-

cess. Government is therefore bound to treat each citizen equally and impersonal. Even if this ideal of the social contract has fallen short of the mark, its existence offers an anchor and boundaries, a counterweight against political opportunism. Unfortunately its core tenets are not self-evident in a world under pressure, and Western citizens alive today, for the most part, have never experienced their absence.

If anything, this brave new world would be the triumph of corporatism, the organization of society along group lines. A form of government like the ones which exist in China and Russia. A lattice work of groups with separate interests and beliefs, vying for resources and forming and dissolving coalitions and syndicates. An ever changing structure of bilateral agreements, deals and arrangements. Such arrangement will include granting one such group the right to govern, in exchange for ensuring the protection of the supporting groups' privileges, of course. It would be a world driven by the art of the deal, sounds familiar?

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11



C H A P T E R



11

The Brave New Paradigm for Learning and Teaching

DAVID DYE & GIDEON SHIMSHON

Concern stalks university leaders as worries increase that the globalised higher education sector will be undone by COVID-19, and overseas fee income will be lost. In contrast, online and remote learning offers the opportunity to deliver much more social value to learners, at scale, raising hopes that universities might learn from this crisis.

Australian G8 universities have already lost an academic year's worth of Chinese students, and with overseas tuition fees accounting for 40% of their tuition income, the question for the sector is: what if this becomes the new normal? What if international travel and the movement of millions of students slows to a trickle, not just for a few months, but for the long term?¹ In parallel with the global lockdown, universities worldwide have had to overcome institutional inertia virtual-

¹ <https://www.nytimes.com/2020/04/20/podcasts/the-daily/coronavirus-how-long-lockdowns.html>

ly overnight in order to keep teaching for the remainder of their academic year. They are quickly learning to use tools and systems that a vanguard has been developing for online teaching over the last two decades.

Understandably, most university teachers caught in the midst of this crisis will hope to replicate their existing practices and deliver lectures and seminars online. This sounds like the most logical and simple course of action, but it would be a wasted opportunity and will lead to longer term disappointment amongst both students and teachers. Universities cannot deliver online learning without changing their entire approach to teaching. The term 'opportunity' can seem crass in the current circumstances, but there's no doubt that this moment can be used to change the university experience for the better. Courses can be designed differently, teaching and learning communities can be strengthened and power dynamics can be made more equitable, and new skills and learning models can be tested.

Universities are meant to be learning communities – the point of gathering together from across the world is to learn together, not simply to listen to 'the sage on a stage'. But particularly for graduate learners growing professional skills, the traditional campus degree means leaving your home and your career for a year or sometimes longer. For many, this simply isn't feasible. Flexible, online degrees and new qualifications are growing rapidly, offering high quality learning experiences that are useful in the professional world at a more affordable total cost,

meaning learners can keep their existing jobs and live with the families they support. It's clear from existing, successful online degrees that getting it 'right' isn't just about producing high-end videos and student materials; it's about designing a cohesive learning experience that provides a sense of community, tutoring and mentoring, assessments, feedback, simulations and more.

So, what does this 'new normal' look like? For practical skills, it means global campuses, networked labs, and clinical settings where nurses and doctors can be taught by global leaders in Los Angeles, Beijing, London, São Paulo, and Amsterdam, whilst developing their practical skills with supervision locally in Lagos, Delhi, Berlin, Moscow, and Washington DC. It means universities collaborating to share access to labs, local hospitals and GP practices, and providing students with the means to access expensive equipment and do experiments at their kitchen table.

For educators it will be about teamwork. Lecturers, TA's and digital pedagogy experts forming teams to co-develop courses and learning experiences and then coach and tutor students in discussion sessions. Students can form small groups of peers encouraging and instructing each other, over web links and through in-person meet-ups, anywhere in the world. Given that most learning happens outside the lecture theatre we need to remember the lecture has only ever been the beginning of the learning journey.

Being physically on a campus has the benefit of

boosting your morale compared to learning in your bedroom, so one of our biggest priorities must be ensuring that students feel that there's someone to talk to on the other end of their screen, that you are part of a community. If the experience of lockdown teaches us anything it's the importance of human connection, and so if we are to make remote learning work well, we have to foster connections between students, yet try not to get involved in every conversation. Rather, we have to see ourselves as coaches, mentors and collaborators with students.

For university teachers this could be an exciting moment, the development of one-off bite-size courses or fully online or blended degrees offering global scale and reach. We can transform even more lives and inspire a love of education in many more people around the world. It doesn't require expensive lecture theatres or shiny halls of residence; it brings the learning focus back onto talented staff working together with talented and motivated students. Those that thrive in this new world will be those who work together, who can coach each other and truly deliver education that is better than what went before.

For university leadership this poses fundamental questions about the business model, investments, capital plans and organisational structure of their institution and associated brand. Their first priority should be to adapt with pace and foresight. This requires a fast-paced response in delivering teaching online this year

while scenario planning and developing a strong vision for supporting their staff in the future.

This is a tremendous change management endeavour, as institutions move to a new paradigm of teaching which is team based, embedded in latest insights into pedagogy and technologically smart (both on and off campus). A first priority should be to help faculty and instructional teams to design effective learning experiences, curate resources, and facilitate learning. Educational development support structures need rethinking and digital learning functions must be positioned/developed in key strategic roles to enable this change.

This pandemic has fast-tracked us into an era of accelerated adoption of innovation in education. In the past few weeks at our own institution, Imperial College, we delivered remote assessments for hundreds of final year Medicine students. A world first, and unthinkable only a short few months ago. Upcoming EdTech companies like Coursera and FutureLearn are deploying AI to match students to courses developing personalised pathways, and acceptance has grown that microcredentials are valuable learning assets.

We need to seize this moment to further reimagine the university experience and what our future teaching will look like (whether at home, on campus, or a mix of the two).

Society is entering a new and uncertain phase and who is better placed to test our prior assumptions in this

brave new world than universities, the very institutions that invent and research ideas that lead to fundamental change the world over.

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12



C H A P T E R



12

Fear Less

ETIENNE F. AUGÉ

“I must not fear. Fear is the mind-killer. Fear is the little-death that brings total obliteration. I will face my fear. I will permit it to pass over me and through me. And when it has gone past I will turn the inner eye to see its path. Where the fear has gone there will be nothing. Only I will remain.” Litany Against Fear, Dune (1965)

Fear is what saved us from being slaughtered by that giant saber-tooth tiger. Fear made us run away from that scary mountain spitting fire. Fear is what stopped us from eating those plump berries that looked too good to be true. Fear has been useful all these centuries to help us survive. But like a helicopter parent trying to make its children live in a golden cage, fear can sometimes stop us from moving to the next step.

The Coronavirus crisis of 2020 showed how sometimes a tiny grain of sand can paralyse a powerful global system that we believed was “sustainable”. By taking shorter showers, eating locally grown quinoa, and riding bikes, we thought we would never, ever, have to

change our lifestyles. We were daydreaming, especially in the Western world, enveloped in a comfortable *Illusion of Safety* that was suddenly shattered as we got forced to live home for a while (The horror!). The economy went down, domestic violence went up, and millions of experts explained what should be done, since they knew better, whilst covidiot went to the beach or had BBQ in the park. Worldwide reactions to this simple crisis proved that we are not prepared for a zombie invasion, a meteorite hitting earth, an encounter with hostile aliens, or Godzilla. In other words, we are not ready for any science fiction scenario where the future goes very wrong. How is it possible? Science fiction has been warning us about horrible future things that could happen to us for centuries. A pandemic like the coronavirus has been the topic of countless books, from *I am Legend* (1954) to *World War Z* (2006), and endless film scenarios, such as *12 Monkeys* (1995) or *28 Days Later* (2002). Are we not listening when we watch Netflix? We binge-watch *Walking Dead*, love being scared, appreciate not living in such a horrible reality, then go to bed too late. How wonderful is our current world, where we don't have to run for our lives anymore, since the saber-tooth tiger is extinct (good that some animals are no more), and the zombies are not there yet! We watch fear on-screen, and meanwhile Big Brother is tracking us.

Fear can also be a powerful political tool. As Adam Curtis smartly explains in his documentary *The Power of Nightmares: The Rise of the Politics of Fear* (2004), fear has always been used by leaders to control masses. In

propaganda, a communication strategy aiming at controlling beliefs, fear and especially, fear of change, are powerful techniques that force masses to support an existing system, as it could be worse. A tiny virus crushed our lifestyle, even if the body count of COVID-19 is rather low compared to previous global pandemics.

Fear was everywhere, to the point that ridiculous behaviours kicked in, such as stocking up on toilet paper, or the opposite, like pretending it's just a big flu, and counting on others to be confined! The difference of confinements, between those who could afford being quarantined in their secondary house, as opposed to those who were less comfortable in tiny apartments, is another sign of the times. Me me me me me me me me me me, and the virus. Another documentary by Adam Curtis highlighted the global phenomenon of flattering the ego of masses, and in *The Century of Self* (2002), we could watch in horror how we have gone from societies with flaws, to a bunch of individuals obsessed with themselves. Scared little individuals, finding scapegoats for their own shortcomings. Is that the modern humanity we were supposed to be so proud of? Eating more tofu will not make a difference. We have to rethink our societies, to make them future-ready.

How can we be better prepared for what may come? At some point, the past is not there anymore to guide us into the future, and we have to imagine better ways to prevent future shocks. Science fiction has been warning us about horrible futures, but it can also help us invent better societies. For a long time, science fiction was

written mostly by the same kind of people that have been ruling the world: white males, usually heterosexual. Nothing wrong being a white heterosexual male, I am one of them, but there could be a major issue if only one type of people is concentrating all the powers. Science fiction can truly be innovative if everyone participates in developing it. More and more, other voices can be heard promoting a more compassionate approach to societies. Following pioneers such as Octavia Butler, or Ursula Le Guin, authors like Nora K. Jemisin or Becky Chambers are developing a new kind of speculative fiction, where male testosterone and flying cars are less important than caring about others, inventing more inclusive futures, and healing the world.

To move ahead, we have to abandon some fears that hold us down, and prevents us from developing, like helicopter parents trying to do good. All around the world, leaders are still using fears to pretend they are the best protectors of their people. In the USA, Hungary, Russia, or the United Kingdom, conservative leaders are in place, and numb their population by claiming they will protect them for all dangers, even imaginary ones they invent to stay in place (Immigrants want your job! Illuminati rigged the elections! I am the cure to the disease I just made up!). In the Netherlands, the motto of the House of Orange is a French one, *Je Maintiendrai*, meaning *I will maintain*. Maintaining means to conserve, no matter what. Maybe a good way to create a better future is to get rid of conservative institutions of the past. By not maintaining, no matter what, we become more free

to explore new options. By accepting that elements of the past have to go, we are able to replace them with new, hopefully better elements. By taking science fiction seriously, and not just a fun genre on streaming platforms, we can develop better narratives for the future. By teaching and studying desirables futures, we make them happen. By taking control of the future, fear will not control us as much. And next time a virus gets amok, we will be ready, and not in our pyjamas with a remote in hand, anxiously looking for something to binge-watch.

Come on, let's give it a try, what do we have to lose?

Don't be scared.

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13



C H A P T E R



13

Corona, the Game!

KRISTIAN ESSER



© *Kristian Esser*

A pandemic has projected us into the future at a glance. Much of what we have done in recent decades has become Global. What we eat, where we travel, money, news, the clothes we wear, everything is developed from a global perspective. It also includes planetary problems, such as the climate and finally, indeed, health.

Humanity has more than doubled in the last 60 years, the cities have become metropolises, for years we have

tolerated that “more” and not “better” is proof of success.

And as often happens, something has to break to realize we can't continue this way. A virus has crashed the machine. But what broke?

MOBILITY

What is undoubtedly most visible about this crisis is the slowdown in mobility. Whether imposed or not, we may and must limit contact with others. Travel has also been restricted to what is necessary.

PERSONAL CONTACT

The ability to physically meet is minimal. It is no longer allowed to hold one another, and what a physiological need for human functioning has suddenly become impossible.

WORK

We no longer go to the office but have to work remotely. The social aspect of work has also become obsolete, and we still have to get used to remote work.

HEALTH

The virus is undoubtedly deadly and contagious, the side effects are severe. Trust between people is undermined, and the healthcare system is being put to the test.

ECONOMY

Businesses have come to a standstill, and world trade is suffering tremendously. The trade flows are no longer sufficient to meet growth expectations.

We have entered the most significant social experiment since the end of World War II. For the first time in our history, we can measure the consequences of such a massive phenomenon. Not a data model (a digital twin), but the real world has become a laboratory. And in this situation, we even can include the sentiment people have. What do we think about it? How does it feel?

Whether it's recovery or change we have to face after Corona, almost all thoughts enhance the use of technology. It is probably the best tool we have at our disposal to measure what is happening in the world. It is as if the past 20 years have been necessary to prepare for this. But now that the time has come, we are also faced with a difficult decision. Are we going to accept what technology can do for us, at any conditions?

COMPLEXITY

The realization that the world has become too complicated is getting to us. We are no longer able to understand what is happening and why. This pandemic is an example, it's an explosion of uncontrolled complexity. The problem is new, and it takes time to figure out a solution, but at the same time, time is our enemy.

But we do have a time machine, we just don't know how to use it properly yet. That time machine is called

technology. Artificial Intelligence, coupled with as much data from our society as possible, could calculate scenarios that outsmart the virus and allow the pandemic to subside in a controlled manner.

In this fight with the virus, whoever is first to beat the other has won. Technology is a time accelerator and could offer the chance to defeat the virus.

IT'S NOT ABOUT PRIVACY, IT'S ABOUT AUTONOMY

Now that technology is a possible solution, the public debate about protecting our privacy starts. That's because we are the data suppliers for Artificial Intelligence to calculate answers. The fears about a surveillance society immediately emerge. Fueled by images from China and Korea, we find it hard to accept that our collective behaviour can be used for good. We want to do it, but then it must be anonymous, and governments and companies may not be allowed to keep the data. We want guarantees that this will not happen.

But I think privacy is only the outer shell of a much more complicated story. It is about the wish to keep our autonomy versus the chance to become part of a technological system.

TIME

Our biological time is out of sync with technological time. Every decision that moves away from our 'biologi-

cal' time also takes away our autonomy. The choice to use a car speeds up our life, at the same time, we do organize our life by including its speed in our considerations. We might come up with agreements on the value to attribute to technological time. Speed by design?

Do you notice that we are doing our very best to develop technology that is increasingly similar to ourselves? The last edition of Brave New World hosted [Bina48](#), a “humanoid” who learns to be “human”.¹ [The Replika](#) application is a chatbot that determines how you are, fed by your chats, and then becomes a copy of yourself.²

In some cases, technology is already part of ourselves. Take as an example the implanted antenna in [Neil Harbisson's](#) brain.³ That antenna helps him to recognize colours by converting them into sound signals. Neil is colour blind.

We have a ‘relationship’ with technology. And just like in any relationship, we need to make suitable arrangements to maintain it. And here comes ‘time’ into play. It is the key to those agreements.

Has chess become pointless when a computer could always beat us? Is avoiding a deadly danger useful when a computer can detect it faster than we do?

These are two questions about time, suggesting that we can link different values to it. But it's not the first time though, in Greek mythology, we already know Chronos and Kairos, which stand for empirical time and “the right time.”

1 <https://www.hansonrobotics.com/bina48-9/>

2 <https://replika.ai/>

3 https://en.wikipedia.org/wiki/Neil_Harbisson

However you look at it, technology accelerates time. Yuval Noah Harari describes in his book *Sapiens* that we were in sync with our biological time when we were hunters. Then we started accelerating it.

We have now entered a complex system and are increasingly distant from biological time. Yes, we do have to sleep, but a large part of our behaviour is no longer determined by nature.

We have to sync times.

But why Corona the Game?

There are two scenarios: We go back to a simple model where the economy is not focused on growth, or we evolve to a smarter model where balance is the mantra.

I estimate the chance for the first scenario quite small. In general, it would be perceived as degradation, even if I have to say that caring for the climate and health is hopeful to change this perception.

In the second scenario, I see opportunities. As said before, we live in a complex world where technology is needed to understand that complexity. Then let's get technology to help us with balance.

Gamers have a special relationship with technology. It's a group of people used to connecting remotely with like-minded people through technology platforms. With these "friends," whom they have never seen in real life because of their physical distance, they discussed strat-

egies, developed skills, built relationships, all to achieve the same goal. Win the game.

Now in gaming, competition is important but less interesting than the dynamics that arise in the digital environment. In addition to connecting the gamers, this environment provides a “digital twin” designed on an imaginary reality. A system.

Now consider a similar system, but “for good.” This system can be a copy of an existing one. A system that no longer works properly, connected by rules that no longer work with the new goals that have been set. On that system, we can play the game, the game that can convert the old system into a new one, which is in balance.

Game ON.

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14



C H A P T E R



14

#wishyouwerethere: from digital exile to digital only

JEROEN VAN LOON

IN EXILE, AGAIN

Ten years ago, I graduated from the HKU University of the Arts Utrecht by going into a self-initiated digital exile. My graduation project was called *From Digital to Analogue*. It meant that I went offline for two months, researching and experiencing what my life without the internet would look like. After having spent almost four years studying digital media I would now graduate without any.

The last ten years I've spent working as an artist visualising the changes in our digital culture. This made me create a glass internet filled with smoke signals (*An Internet*, 2015). I held an online auction to sell my personal DNA data to the highest bidder (cellout.me, 2016). And I created a performance in which a sand mandala was

created in ten days that showed the entire digital infrastructure of the city of Utrecht – when it was finished everything was erased, leaving no visual documentation behind (Ephemeral Data, 2019).

Now, ten years after my self-initiated digital exile, I feel like I'm in exile again. This time not because of a graduation project but because of a virus outbreak. Even though the exile part may be the same, what I experience is the exact opposite. While in 2010 I wasn't allowed to use any form of digital media and therefore was researching how my life without access to the digital world would change, today in 2020 it feels like I'm researching how my life would change if I only had access to the digital world.



Analogue Blog (2010) booklet, blogposts and individual stencil printed blog letter.

FROM DIGITAL TO ANALOGUE

Before my graduation project started in 2010, I never gave much thought to the role of digitalisation within my personal life. It was only when I wasn't allowed to use a computer that I started to reflect on its impact. To document these experiences, I began an analogue blog.

I would write blogposts on a typewriter and send them to my blog readers through the traditional post system. Each blog reader could write a comment by sending a handwritten letter back. My blogpost would highlight the changes in my offline-life. Some changes were insignificant – such as not being able to find a telephone number without Google – others were more fundamental – such as the fact that without a computer I started to work in a single-tasking manner whereas with a computer I always multitasked, and, of course, failed.

My graduation project showed me that my behaviour changed positively when I didn't have access to a computer and the internet. I had more focus, less stress, more in-depth social contacts, worked more efficiently and was able to do much of the same things before the exile started.

I concluded my graduation project by writing that 'I could imagine never using a computer at home anymore, only at school or work'. This was May 31st, 2010.

Now, all access to the physical world is banned. I'm at home, working as an artist and as an art teacher. I give online classes, guide graduate students in Skype and

home school my six-year-old son. All grocery shopping is done through an app, all communication is done through smartphones and all, literally all, work is done in front of a laptop. These changes made me think how I relate to the digital world today and how this is different compared to 2010. The main difference is that now not the digital is absent, but the physical.

PICS OR IT DIDN'T HAPPEN

It has often been said that, especially for young people, there isn't a distinction anymore between the online and offline, the digital and non-digital, it's just all one reality. I think the corona outbreak shows that there still is one. The distinction was only less visible when we had both worlds and had the freedom to decide when we wanted to go from one to the other. If there always was a distinction, then where exactly is the magic line? For me the line is precisely in the 'pics' of the *pics or it didn't happen* phrase.

The phrase *Pics or it didn't happen* sums up the entire digital realm in one simple rule. The phrase was first used to ask for proof when someone would brag about something online. Today it relates to much more than only bragging. It is a statement on what matters and what doesn't. Thanks to ever cheaper storage we no longer have to forget. Thanks to global networks we don't have to worry about being in the right place at the right time. Infinite storage together with a global network creates the ultimate archive. This

made me ask the question: how important is it for anything to be digitised today? What isn't or can't be digitised? What kind of information, content or experiences are missing? But also, what kind of aspects of real-life events aren't used in the digital media? The goal of an archive is to preserve, not to act as a live-feed. Anything that's either not documented or which is by definition ephemeral, invisible, forgotten or uncopyable isn't digitally preserved. So, if currently my only view on the world is through digital means and thus through this digital archive, then anything that isn't in there doesn't exist for me. This made me think about the famous thought experiment: If a tree falls in a forest and there is no influencer around to make an Instagram post of it, did it ever happen?

DIGITAL EPHEMERALITY

I don't think the solution to the *Pics or it didn't happen* problem is more digitising and documentation of even more aspects of our daily life. The corona crisis shows us the opposite, how poor digitalisation is able to grasp real life. There are certain characteristics that digital media don't have, or maybe I should say, often don't use. Aspects that we now miss because all we have is the digital world. A lot of them have to do with the feeling of 'being there', being part of an event. Feelings that you don't get if you access online documentation of such an event. A concert is a good example. A concert starts/ends at a specific time, it takes place at a specific location, it requires



Screenshot of The Grifters Instagram post for the #LiveBoris project.

you to buy access and only to a limited amount of people; it could be sold-out. If you don't meet all these requirements, you cannot attend, see and experience this particular concert. You can buy a ticket for a similar concert, perhaps even from the same artist or band on a different date, but it will never ever be the exact same concert that you've missed. Such ephemeral aspects are a big part of creating the feeling of 'being there'.

I think the way we digitise and create digital media could benefit enormously from such ephemeral aspects. These ephemeral aspects are not a revolution, but an evolution within digital culture. The youngest generation growing up today is already using digital media in a way that is more like a performance than an archive. Think of temporary messaging, the use of live stream platforms and even online one-time-only events such as the end of *Fortnite season 9* on August 1st, 2019.

You can (re)watch a video of the season's ending, but you can never ever, as a player, experience it again.

Recently I'm seeing more and more Instagram accounts that deliberately ask their audience *not* to repost their pictures. See the example of The Grifters Instagram account focused on graffiti culture, an art form so focused on showing and communicating it takes huge fines for granted. For their #LiveBoris project they only showed the action of painting a wall through a livestream on Instagram. After the livestream had ended the painted wall was censored by painting a big red shape over it with the text 'Private Graffiti – Do NOT Read'. A photo of this censorship was posted as a regular Instagram post. This means that anybody who wasn't present during livestream can never ever see what was painted before it was censored. Another fine example is the release of the longest film in history, *Ambiancé* from Anders Weberg. The film's length is 720 hours, it will pre-



Close up of erased Ephemeral Data (2019) performance, photo by Gert Jan van Rooij.

miere on December 31st, 2020 simultaneously on all continents and will be destroyed immediately after it has ended. It's much like my work *Ephemeral Data*. Nobody, not even me, was allowed to make any pictures or videos of what happened during the performance. When the performance was finished it was completely erased. You had to be there.

#WISHYOUWERETHERE

Currently I'm teaching a course called *Ephemerality > Permanence* at the Artez University of the Arts where the students and I focus on these ephemeral characteristics and how they could be designed into digital media. We started with the fact that digital culture today is moving away from concepts like the archive, permanent storage and global connections. Maybe the internet was never meant to be an archive forever; maybe it's now evolving into a performance platform. This led us to questions such as how you can design to be forgotten, to be missed, to be absent or to be unseen. Is it art if nobody sees it? In their projects the students are now creating for scarcity, for the moment and definitely not for anything that can be digitally retrieved at any given moment, wherever, whenever.

Of course, these students are also in exile. Their university isn't open, they don't have access to the workshops and they can present their projects solely online, by digital means. They experience much of the same exile as I do while they're actively researching and creating for the

subject of digital ephemerality. Maybe at the end of the course, there won't even be any work left for me to assess, maybe I missed out, maybe I wasn't there in the right place at the right time, maybe it was erased before I could see it.

I started with the question how my life, ten years after my self-initiated digital exile, would change if I only had access to the digital world. The answer is that the digital world is hardly a real substitute for anything in real life. All that is digitised is preserved and archived, but the possibility that I can re-watch, re-listen, re-read, download and retrieve whatever I like from this archive makes it meaningless at the same time. Each digital experience seems identical, they are made up from the exact same amount of pixels on my screen each time. Whether it's a private conversation, a Netflix series or the grading of a final presentation from a student. What changes are the colours of those pixels. Only accessing the real world through digital means makes me feel that I don't want permanence, I don't want storage, I don't want unlimited access. I don't want archives. I want to be able to miss out – also in the digital realm. 'Pics or it didn't happen' is becoming outdated. I want to be able to not be on time, I want scarcity, I want uniqueness, locality and temporariness. Not in the sense that anything pre-digital is better but, in the sense that I want these aspects to be part of our digital infrastructure. FOMO will turn into #wishyouwerethere.

Jeroen van Loon is an artist focusing on visualising and documenting digital culture.

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C H A P T E R



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Something to Look Forward to

*4 ways the coronavirus crisis is
changing the world for the better*

ELSA SOTIRIADIS

The Coronavirus pandemic will continue to hold our 7.8 billion-strong world population firmly in its invisible grip for quite some time. Corporations are scrambling to adjust to the new economy and tens of millions of employees are adjusting to working from home (and panic-buying), while first clinical trials are taking place in the race for the vaccine that restores the world back to normalcy. But will it really be the same again? That's doubtful, but perhaps the future will be better. One thing is clear, these historic times are fundamentally reshaping our lives in four significant ways:

VACCINE DRONES, FOOD DELIVERY ROBOTS AND BLIMP WAREHOUSES

Amid hoarding, sold out hand sanitizers and social distancing, the global pandemic adds further momentum to the fast-paced development of autonomous deliveries. This is particularly urgent as delivery workers are risking their lives trying to get parcels across doors contact-free.

Not only has Amazon patented this [futuristic, airborne blimp warehouse](#) (which is yet to materialize), the e-commerce giant is also developing Prime Air, a drone-operated, autonomous delivery fleet. These unmanned aerial vehicles (UAV's) could bring you your parcel in under 30 minutes after you place your order – safely, quick and minus the human contact. As of the time of writing, this is still in development.



While we wait for a vaccine, some of us are already getting our pizza delivered by autonomous robots. Domino's Pizza is rolling out first limited pilot programs for autonomous delivery in select cities by partnering with Starship Technologies and usher in the future of food delivery. While we wait for delayed deliveries of our face masks and home electronics, at least we won't go hungry.



Once we have a vaccine, drones could also speed up the immunisation efforts. UAV's have been used successfully to deliver blood samples and critical medical care supplies to [remote areas](#).



Matter-net and UPS [have partnered up](#) for the same purpose. Matternet's drones were trailed in Swiss cities like Zurich and Lugano, where they shuttled pathology samples to labs.

Drones could bridge the logistic gaps between smaller COVID-19 viral and antibody testing drive through locations and the labs of larger testing hubs. It's possible that at-home-test will become available and would help people avoid crowded medical centres. This could help especially in chronically underserved rural areas. Drones could also deliver drugs to remote hospitals or households, once the drugs to treat COVID-19 become available.

REBOOTING THE WORLD'S CITIES, SUSTAINABLY

The canals of Venice have cleared up and the air pollution has dropped across the world's urban centres amid the wide-spread shutdown of industrial factories.

As the signs of a looming global recession are becoming more evident, budgets for environmental efforts in the corporate sector may be hampered for a while.

However, the crisis is an opportunity to trigger a more sustainable way of life, incorporate SDGs in our longer-term rebuilding efforts and rethink the future of our cities.

For instance, China is notoriously struggling with smog and toxic fumes and has been exploring [vertical forests](#) as a means to clean the air.





On a smaller scale, we could [green our rooftops](#) for a start, like the Dutch city Utrecht. This policy ('no rooftops unused') could help create environmentally friendly eco-neighbourhoods, where plants are sprouting, the air is fresh and biodiversity returns. We might need to reserve some space for the above drone landing pads though.

On a macro scale, closer industrial collaboration on plastic recycling efforts and holistic methods to preserve biodiversity, improve access to renewable energy, reduce water scarcity and improve re-source efficiency can bring us a step closer to transform our linear economy into a circular one.

Apart from creating new jobs, this [\\$4.5 trillion opportunity](#) would capture economic value by creating new ways to clean, power and feed our future megacities. Further it's important to foster and leverage investment and innovations.



The synthetic biology sector, as an example, is poised to deliver sustainable solutions across industries, from manufacturing, to food and consumer goods and new biomaterials, like [innovative algae-based sneakers](#) to transform the fast-fashion industry.

All these environmental and sustainable innovations could help unlock quality of life for the over 66% of the

global population who will live in cities by 2050 according to the WEF.

Therefore, in coming years, our cities could start to turn into lush vertical forests, where traffic noises have quieted down thanks to widespread electric transport, and where our food is grown locally in vertical farms and bioreactors powered by renewable energy. We might have to wait a little longer for flying cars, though.

THE REMOTE, DIGITAL FUTURE OF WORK

“Can you hear me?” That’s the ever-abundant, dreaded phrase we utter in conference calls amongst streaming glitches, dropping signal, distorted echoes and awkward silences. Isn’t it about time that the quality of our virtual meetings improved?

We’re getting closer. Imagine you could break free from your screen, entirely.

Immersive digital technologies like AR, VR and XR are not here to replace our reality, but to augment it by turning everyday-surfaces around us into interfaces. No matter if you’re in your living room, a beach cafe in Bali or on the manufacturing floor with AR glasses on the bridge of your nose. Enhanced reality could make us happier, healthier and more connected, when we work out and meet co-workers or far-away loved ones.

Besides, don't you just love to click through your corporate tutorials on the computer every year? No? I thought so.



It's a good thing that companies like Walmart, Chipotle and Shell are already training their workers in virtual reality across varied areas, from realistic emergency drills for cleaning up oil spills, to empathy training, dealing with difficult customers or even hostage situations, all entirely safely. Some of these trainings would not be possible to hold at all without VR and in the case of Walmart, has already [saved lives](#).

Because immersive experiences are emotional experiences, we retain the information exceptionally well. Not only can we better hone the interpersonal skills that are critical in our increasingly automated future, it's more fun, too.

A few years down the line, bodysuits and sensors could find mass-adoption and provide haptic feedback, too perhaps with AR-enhanced. Therefore, our next collectively dreaded phrase could become: "Can you feel me?"

IMMERSIVE EVENTS ARE COMING INTO YOUR LIVING ROOM

The events industry is among the hardest-hit of all. Hundreds of prominent festival and conference cancellations, even the iconic *Oktoberfest* in Munich, which is the

world's largest public event and draws around six million visitors every year. But the crisis is further pushing the shift to virtual events by giving technologies like live streaming its moment in the spotlight to prove itself.

This is laying the groundwork for the immersive and accessible digital events that will become common-place in the near future and are likely here to stay. For instance, social media platforms like TikTok, Youtube, Facebook and Instagram have rapidly turned into venues for digital-only stay-at-home concerts. The One World COVID-19 benefit concert, co-founded by Lady Gaga, was recently streamed and televised to the world.

Small and large businesses alike are taking their community events, workout classes (some of them via VR), expert panels and conferences to digital streaming platforms.

Imogen Heap, the pioneering technologist and musician has already held such a concert via Oculus Rift and HTC Vive headsets on TheWaveVR, a social music platform in 2018.

A few years further down the line, we could see the rise of a much greater number of mind-bending cutting-edge holographic virtual reality events to enjoy while cutting carbon emissions from global travel of in-person events, all from the comfort of our own home.

What about your next art exhibition? You could simply take your child by the hand and walk with them into a

Dali painting, like in the *Dreams of Dali* [VR experience](#).



At some point, we might not even require the bulky headsets any-more. Augmented reality contact lenses, like those developed by [MojoVision](#), could do the job.



So why not dive in, especially when you're at home with kids right now, into the endless digital world of adventure, knowledge and wonder awaits just at our fingertips — or in a while, at the blink of an eye.

In summary, while the devastation in the wake of the raging pandemic is undoubtedly shattering and still unfolding, it's important to keep our optimism and bear in mind that this is a temporary situation. On the upside, the crisis is spurring crucial innovations that will greatly improve our quality of life in the world after Coronavirus. That's something to look forward to.

Elsa Sotiriadis is a synthetic biologist, bio-futurist and science fiction writer (Elsa Solaris) interested in fixing the world with science and technology.

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C H A P T E R



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The Power of Repetition

SANDER PLEIJ

Doreen would be at the park in a minute, her husband said. She was still attending a funeral.

‘Now? Really?’

‘At home, it is a virtual funeral.’

In her kitchen Doreen had poured a glass of wine before logging into the funeral director’s website.

There she was entering the park already, in a colourful suit. From three meters distance she told us how it had been.

“Beautiful, just beautiful, and weird. I had to cry all the same.”

Before it started she had created an app group with friends, including the daughter of the deceased who of course would not look at her phone, sitting there next to the coffin. But afterwards she could now see how Doreen and her other friends had sympathised with her: ‘how beautiful you look,’ ‘your speech was so impressive’ –sweet, comforting words.

“Very weird,” Doreen said, “but it was very ... intimate.”

Three months ago I would have looked at her com-

pletely different, had she told me she was not going to a funeral, but instead would look at it via her laptop, chatting with a couple of friends, a glass of wine in hand. Had she also mentioned that it was intimate, I would have thought she had become a decadent screen addict.

Doreen is not alone, more people are talking about new experiences and unexpected feelings. Governor Cuomo of New York shared how different the contact with his quarantined daughter has become. The two were having better conversations than ever.

“We talked about things in depth that we didn’t have time to talk about in the past,” Cuomo said, “or we didn’t have the courage or the strength to talk about in the past — feelings I had, about mistakes I had made along the way, that I wanted to express my regret and talk through with her.”

So daddy needed a disaster for that, you can now remark cynically, and touché. The cynic can, as always, sit back and remind us that man never really changes. Man was born naked and continues to wander helplessly in a confusing universe, despite all those new communication possibilities.

And yet, and yet... people do interact in other ways. Now.

Do people experience the world differently through screens? I call tween (short for ‘tweenager’ – ed.) Kay. He tells me about his friend Samuel who helps his mother in making an app so she can give her patients EMDR therapy. Kay sees Boomers finally fully embracing the

internet – including memes: His mother keeps sending him stupid videos.

Forty-something Avinash then. He appreciates how cosy it feels at home. He is alone, but via a screen he has lunch with his aunt, niece and nephew whom he normally sees much less of. His girlfriend lives in another house, but in the evening they are together as in a poem written by a poet who lived long before the internet (sorry, I just have to quote from that poem by Hans Lo- deizen: I live / in another house; sometimes / we meet each other / I always sleep without you / and we are always together). With VR glasses on, Avinash and his girlfriend play a game of Catan in a virtual space and catch up. It feels like being together, but different. His girlfriend feels uneasy every time she takes the glasses off.

Is the contact between people in this crisis different and does it change the human experience? Anthropologist Agustín Fuentes alluringly answered yes and no to this in *The New Yorker*. According to Fuentes, connecting with others is essential for humans and the quarantine means that people have to find other ways to do this. Fortunately, man is extremely creative. He has always survived by adapting and Fuentes now sees that happening: with enormous imagination, ways are invented to connect in quarantine.

The screaming need for connection is captured in heart-warming scenes. Hearts on windowsills, applause for healthcare workers, artists giving free concerts in

front of retirement homes, people doing the shopping for each other, they become bright spots to share jubilantly: The neighbours asked if we wanted to walk with them! People just greet each other on the street!

Sweet. Maybe thanks to that same greeting person, you won't have toilet paper to wipe your butt, but who cares? There is definitely more help being offered, more greetings going round, more contact being made and above all there is that heroic struggle of the healthcare and social workers.

When I hear from Djuna and Mark, my two hospital doctor friends, who are now fighting for their patients, my heart overflows with love, gratuitous or not. I can't even call them to ask about the change, they have no minute to spare.

I also hear from others that the water is up to their lips. Teacher Eva is busy day and night to help the children in her primary school and to provide them with bags of teaching materials, because not every child is in reach of a tablet or computer. Family counsellor Sarah says that video calling is not enough for her. She sometimes makes extra appointments to see if children are endangered. Then she suddenly finds herself with half a family in a park or playground.

Together with salvation, the new techniques also present new problems. I have heard that psychologist Claudia is now treating her patients on screen and I call her.

'I have partners who break into the therapy conversa-

tions crying,' she says, 'to tell me they can't deal with my client anymore.'

She now receives information that a psychologist normally doesn't hear in the treatment room.

'I had a father who roughly lifted his child during the video call and walked away with it. He shouted loud at it, that he really didn't want to have "that child" around anymore.'

A few days after Doreen's virtual visit to the funeral, we take a walk.

'I went to two more,' she shouts when walking towards me. She starts with the costs: less for the family who don't have to give a reception now, more for the funeral director who can no longer sell sandwiches and drinks.

Habituation is taking place, I notice in the third quarantine week, and the prospect of another full month is blurring the future.

Doreen's done with it, she says: 'I no longer feel like social bullshit via a screen, I am not doing another virtual drink with my reading club.'

Will it go like this? Shall we quickly get used to virtual funerals, being together via a screen and video bubbles for work? Will new forms of contact become new routines? Soon over two months of isolation will have passed. Will nothing remain of that? Doesn't this experience change anything profoundly in how people interact with each other and life? What about reflection? That much-voiced and widely felt need for all this to yield something good?

I searched further. An authoritative behavioural scientist claimed that in just a few weeks routines can change and new, lasting habits can emerge. If the pandemic is over, the optimist said, everyone would understand what collective action can achieve. Forward! A greater sense of community would have arisen.

He didn't convince me.

I turned to war journalist Minka Nijhuis. She just wrote a tantalising novel about her profession, *Crazy Job*, and she told me in an email how she copes with situations like this. Especially in wartimes you sometimes spend long stretches of time waiting in uncertainty. Grind is then inevitable. But it also adds depth, she wrote. "In any case, you fall back on yourself in such isolation. You make up small rituals. And I search my memory for poems and excerpts from books that I know by heart."

The penny drops when I listen to a certain 14-year-old that I know really well. I see her struggling and getting on with something that more people struggle and get on with: dealing with repetition.

The 14-year-old says that, strangely enough, with her group of friends she actually becomes "closer". Thousands of messages are exchanged, parties are held via services that visualise everyone at the same time. Is that what brings them closer? Those new techniques? Is tech bringing people together? No, she says. These techniques I call new, are not new to her either. It's something else.

“We are not together now and we are not experiencing new things at all, together.”

They are having less collective experiences.

“Now you automatically ask each other more questions. About what people like and whether they have interests and stuff. “

So that’s it: the absence of the new. Repetition leads to deepening. New techniques may help with new forms of contact, but they also return to normal and in the end it is not the new technique but the repetition that changes something essential.

Repeat. I could now randomly search for quotes from medieval monks or Buddha, and there was probably a neuroscientist who had seen evidence on brain scans, but I knew someone else who could say something of particular interest about the state of mind of man today. I thought, I will call Fokke Obbema! He is a Dutch journalist that conducted dozens of interviews that all just consisted of a long conversation around that question: what is the meaning of life? I called him and asked if the word repetition had come forward often? Fortunately, he responded quickly and replied with a definite yes.

“Yes, I even learned from the interviews that wisdom cannot be conveyed by saying something once, but only by the power of repetition,” he said cheerfully by the (screen-less) phone. Philosopher comedian Tim Fransen had suggested to him that wisdom is not something to suddenly absorb, but that wisdom must come to you through practice. Obbema had seen that pattern

confirmed in how he learns himself: “Whoever I spoke to, everyone somehow came back to the relationship with others, with nature –with the living. After the fortieth repetition of that, this need for connecting put on a new meaning for me. Yes, there is a power of repetition. “

For a moment I was able to conclude my search. Whether you are single, part of a family or a group of friends, whether you communicate via screens or not, it's the confrontation with repetition that has an impact now. Now that attention within four walls has become less fragmented, people are more likely to return to what they were actually not finished with, to what they had not thought through, to what they had just wanted to see again, or discover more about.

And so it finally becomes less apparent that new things are better or more interesting. Interesting does not only belong to the new message, the brand new product, or the latest news. Looking, feeling and hearing again turns out to be just as, and even more interesting.

This is a vast common exercise in repetition. Whether the budding habits and routines will become permanent I do not know.

I do know that movies, books, series, memories, conversations, even people, that have been left behind simply because something new called for attention, are being retrieved these weeks and then viewed, listened

to and studied again. It feels like catching up, taking a breath, going deep.

Looking at something again, caring for something again and questioning something again, more accurately this time, it seems... in my head a song of Prince has been playing for days: There's joy in repetition, there's joy in repetition.

That song is about love.

Sander Pleij is a writer. His novel *Explicador* was published last year in The Netherlands, it is about the importance of writers, artists and philosophers in a digitized world.

A simplified version of this essay was published in Dutch newspaper *de Volkskrant*.

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C H A P T E R



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What We Can Learn About Corona's News Curve by Staring into the Notre-Dame Fire.

JELLE VAN DER STER &
FRANK-JAN VAN LUNTEREN

How is the corona news curve going to develop? What can we learn from looking at the news cycle during other disasters? We made a data visualisation, as a vaccine against the issues of the day.

*“950 new deaths in Spain, death toll passes 10.000”
and “Wimbledon cancelled for the first time since
1945”.*

*But also: “Dutch presenter Bert Kuizenga and his wife
are in the hospital because of the coronavirus” and
“Daughter of Steve Irwin couldn't invite anyone to her
wedding”.*

The coronavirus is spreading rapidly across all sections
of the news.

NEWS ON STEROIDS

It is not just healthcare workers, supermarket employees and teachers who are working overtime; journalists are working long days as well. News in live blogs is scrolling by faster than we are able to read. Newspapers are hoarding buzzwords like it's toilet paper. And by now, we've shed light on the subject from so many different angles at once, we might have banished all shadows from existence forever.

Okay, maybe that is a bit overdramatic. And to be true, this *is* an exceptional situation. Never before in our lives have we experienced a phenomenon that has impacted everyone's daily lives this much. From economics to sports, from tech to entertainment, all are dealing with the severe consequences, that echo through in the news. Moreover, all people – who are not working in crucial sectors – have plenty of time to consume all of these headlines.

This large amount of news has an actual function as well. Proper information resources are essential these days. Many aspects of our lives became uncertain and we turn to the news for answers. What are our lives going to look like in 3 weeks, 3 months or 3 years? Thanks to the portraying of people on the frontline we all get to see where the weak spots in our society are, for example in healthcare and education. Images that hopefully stay on top of mind, even when the virus finally grows quiet. Moreover, news media have to work hard to drown out all online fake news – or at least position a truth next to each falsehood.

News can also be a binding factor in these times, a mental place where we come together. Think of news outlets as some sort of town square.

However, we do need to ask ourselves if – next to Netflix and snacks – binging large amounts of news is a healthy habit. The World Health Organization put out a warning to everyone living in quarantine, not to read too much news (also not recommended: alcohol and tobacco). We should also question if rapidly consuming small news updates clouds our judgement. A daily stream of statistics – for example the people infected or deceased – is hard to interpret. What does an increase or decrease of these numbers mean? It is hard to draw conclusions on a daily basis, without the proper context.

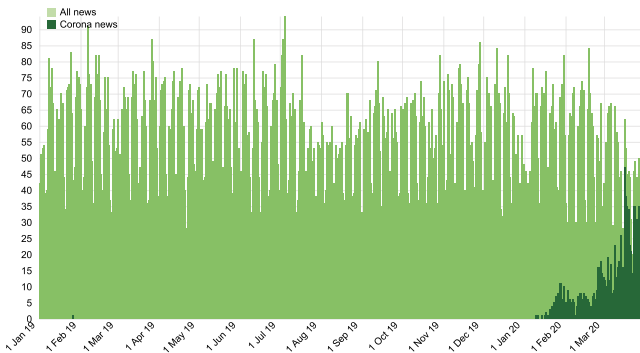
A DATA VISUALIZATION

So, what percentage of the current news is actually about corona? Do we need to consider a *flatten-the-news-curve* measure, to allow other news to exist as well? Or is all of this not as bad as we think, and is corona news – as Jair Bolsonaro might put it – just a flu in an otherwise healthy and athletic news body?

We decided to put this to the test. What if we use code, algorithms and data to make sense of this situation? We built a scraper in order to analyse the news archive of the Dutch news website nos.nl.

NOS is the public news outlet of the Netherlands, similar to the BBC. The timeline of news articles spans from

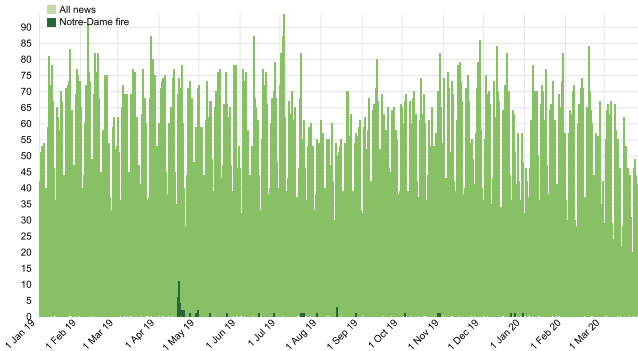
January 1st 2019 until March 31st 2019. Our scraper counted the number of news articles and went through all the texts, searching for words affiliated with the crisis. This gave us an impression of the percentage of news dedicated to this topic. Neatly plotted over time, the following graph is created.



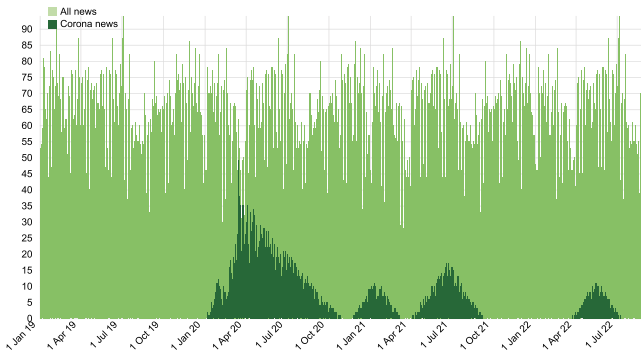
We can see a curve starting around January 9th. The flood of messages really gets going at the end of February. On Monday, March 16th – just after the Dutch government announced the cancellation of all large gatherings – we can see a peak of 47 news items in one single day. At this time of writing, the average amount of items per day is still increasing. What stands out, is a drop in the total number of news items (including non-corona news). Possibly because of lowered demand, or because news agencies also have a lower capacity these days.

IN COMPARISON: THE NOTRE-DAME ON FIRE

What do these numbers mean? What exactly constitutes ‘a lot’ of news? We produced the same graph for other much discussed events, in order to get some clarity. These events had to have happened in the past ten years, as the NOS archive only goes back this far. That is why, for example, we couldn’t analyse the 9/11 attacks in 2001. Instead, we turned to a more recent event that has us refresh nos.nl like hungry news-junkies: the Notre-dame fire, April 2019. A shot through the heart of Paris.



We notice a peak around April 16th 2019, the day of the fire. The peak then quickly fades away, only to pop up several times later that year. In those articles, the news reflected on the aftermath. If we use this data to predict how the NOS is going to cover corona in the months to come, this is the result we get.



In short: across a time span of 833 days we will encounter 4469 more articles on corona. We expect 4 more larger peaks, that will appear with intervals of 26, 150 and 196 days. Looking at this graph, Trump’s populist statement “the coronavirus will miraculously go away by April” might actually become true. That is, if we trust this analysis *and* consider that April to be the April of 2023, at its earliest.

Of course, we cannot extrapolate these numbers to any general conclusion. But if we take a designer’s perspective to look ‘underneath the data’, there is definitely something sensible to say on how this crisis is going to unfold. In 2018, artist Roos Groothuizen created the *Circle of Innovation*. She analysed news on the financial crisis of 2008, and the oil spill with Deepwater Horizon in the Gulf of Mexico, 2014. Thereafter, she analysed just how the public debate unfolded, and how different parties responded to those disasters. As it turned out, there is a pattern to be discovered. Roos decided to use this

model as a template for looking at the introduction of GDPR (General Data Protection Regulation), and how tech companies position themselves within this new legislation. This allowed her to predict Facebook's 2019 redesign as a way of making amends, months before it got announced.

PREDICTIONS FOR FUTURE NEWS

Can we, looking at the news surrounding the Notre-Dame fire, predict what articles we can still expect about the coronavirus? The proof of the pudding is in the eating: we listed five news articles about the fire – and asked ourselves how these could also be about corona.

1.

“Parisian firefighters have saved what
was left to save in Notre-Dame.”

Thank you, healthcare professionals

A portrait of firefighters, saving valuable objects out of a sea of flames. We expect similar portraits for corona, of healthcare workers, supermarket employees and delivery people. We predict movies and books like ‘The grapes of wrath’ by John Steinbeck. A story where in the face of a great depression, the human spirit persists.

2.

“Macron: Notre-Dame rebuild within five years,
cathedral will become more beautiful.”

The reconstruction starts

Eventually governments will present their plans for the reconstruction of healthcare systems, to defend us against future pandemics. Where Michelle Obama focused on health and defeating obesity in the U.S., the future first lady will organize charity events for health care workers.

3.

“No solideo, but a helmet for priests
in the Notre-Dame.”

Life goes on

How are we going to pick up our social lives in the summer of 2020? Where the fire of the Notre-dame resulted in priests with construction helmets, we expect the rise of the 6-feet-society. Coachella with colourful face masks, dancing 6 feet apart. Or maybe exclusive wristbands for everyone that overcame the virus and is now immune.

4.

“Environmental organization sues Parisian au-
thorities for toxic fumes near Notre-Dame.”

The blame game

Eventually we will ask ourselves who is guilty in this crisis. Why were there so few people tested? Who could have

intervened sooner? In the Dutch green party, intensive livestock farming is being questioned, and the Dutch liberal party advocates for looser regulations in testing vaccines. Never waste a good crisis; how will this pandemic be used strategically to serve people's own interests?

5.

“50 percent chance that the Notre-Dame cannot be saved.”

The realization

At some point, the realization seeps in that we don't have full control over everything. There's still a chance people will die, or the virus might return for a second round.

FLATTENING THE NEWS CURVE?

Have we reached the top of the corona news curve yet? Hard to say. As of today, new statistics still pour in daily, and there is always reporting on some country tightening or loosening its restrictions. As such, news editors have to make choices constantly. If corona takes over the front page, what other news does not make the cut?

Dutch newspaper 'De Volkskrant' recently called corona a news infarct. Chief editor Pieter Klok explained in a podcast which journalistic choices they now face. The demand for corona updates is huge, and they want to meet those needs. But he also ascertains that the news became a weird form of entertainment halfway through,

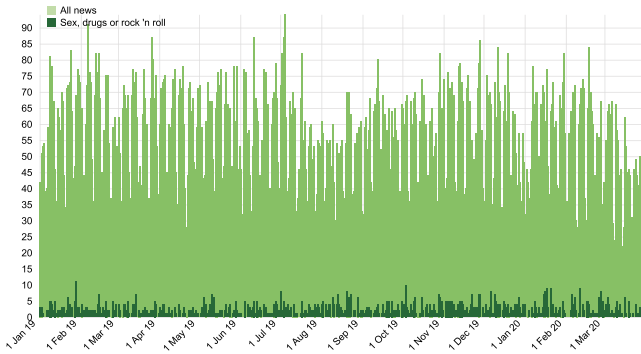
with all the statistics being presented as some sort of sports match. The role of news media has changed: “Back in the day, the newspaper was there to evoke excitement. That role is now taken over by the internet, the newspaper is here to calm people down.” Together with the NOS, Dutch research platform Pointer analysed the tone in current news articles. Their conclusion: the tone is still moderate, which suggests that news media understand their responsibility in all of this.

Looking at the numbers, it's not just news that is highly dedicated to corona. The online meme culture is doing overtime as well. There is an innumerable amount of 'best corona memes' lists on the internet. More than just fun and entertainment, these serve a hidden purpose. Psychologists write that memes are a way to cope with existential questions and uncertainty. Memes offer enlightenment, because they help to put regular news in perspective.

News outlets can also take measures to broaden this perspective, by publishing less issue-of-the-day corona news, or by providing more variation with other (non-corona) news. Will that be enough to flatten the news curve? Or should we take a more drastic approach? Should news outlets, for example, add some fun animal news every two days, just to take our minds of things? The NOS luckily reported on a giant crab that stole an expensive camera from a Dutch scientist. Haha! Or, this just came in; the amount of spoonbill birds in the Netherlands has grown significantly during the last few years. Which is good news – we assume. Of course we have our own responsibility in this as well. Maybe we need to

consider stop straining our thumbs refreshing nos.nl all day. Instead, just stare out of the window for once. You might even spot one of those spoonbill birds.

To put things in perspective, finally, we also made a news graph for articles containing the words ‘sex’, ‘drugs’ or ‘rock-n-roll’. This shows us very stable coverage over the past ten years, even in these troubling times. Let us take comfort in the thought that some things never change.



Frank-Jan van Lunteren is designer and programme maker. He writes about new technologies and digital culture, with specific interest in hidden stories and new perspectives.

Jelle van der Ster is managing director of SETUP, the platform for a technology-critical society. Within SETUP he is responsible for formulating the research agenda and the day-to-day management. Jelle has a background in game design, literary studies and media technology.

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C H A P T E R



18

Disease and Dualism

NOLEN GERTZ

At last year's Brave New World conference I gave a talk on mind/body dualism and technology. The primary concern of my talk was that technological progress has—contrary to the taken-for-granted assumption that Descartes is outdated—made us increasingly dualistic. This can be seen for example in the dream of transhumanists, the dream of being able to “live forever” through technological breakthroughs, a dream that in its essence revolves around the dualistic fantasy that we can upload our minds into technological bodies. Because facing the truth of embodied existence would require facing the truth of our mortality, we instead escape reality by embracing the fantasy of mind/body dualism, the fantasy that we are immortal souls in mortal prisons, the fantasy that technological progress helps to perpetuate.

Like technological progress, the global spread of the coronavirus also helps to reveal the role that mind/body dualism occupies in contemporary life. This is especially clear for example in the current treatment of workers,

workers who have been divided into those who can work from home and those who must continue to go to work.

The workers who can telecommute are those who can be treated as minds without bodies, as minds that can work from anywhere, at any time, under any physical situation, even a pandemic. These mind workers are easily identified as the ones who have spent the coronavirus lockdown time on social media joking about how time no longer exists or complaining about how they've watched everything on Netflix. The workers who must continue to go to work are those who can be treated as bodies without minds, as bodies that must continue to carry out their essential tasks, and that can continue to carry out these essential tasks, because their tasks require acting and not thinking. These body workers are easily identified as the ones who have spent the coronavirus lockdown time on social media begging for protective equipment and posting photos of their unsafe working conditions.

The coronavirus thus helps to reveal not only the separation between the mind workers and the body workers, but also the hierarchy between the mind workers and the body workers. For the essential tasks carried out by the body workers are primarily those tasks that are required for the mind workers to be able to keep working. The body workers are the ones who risk their lives to make sure that there are products available for mind workers to be able to order from the safety of their homes. And the body workers are the ones who risk their lives to de-

liver these products to the doorstep of the mind workers so the mind workers can continue to keep their homes safe.

The coronavirus has not created this separation and this hierarchy, but it has helped to make it painfully visible. This increased visibility has been painful to body workers because of the dissonance between how they are labelled as “essential workers” and how they are treated as essentially replaceable since they are not being given protective equipment or safe working conditions. This increased visibility has been painful to mind workers because of the dissonance between not wanting to force body workers to keep taking risks and not wanting body workers to actually stop working.

The coronavirus reveals that “essential worker” means that *the work* is essential, but *the worker* is not. The revelation of this elevation of work and downgrading of workers will hopefully not be forgotten if and when the coronavirus comes to pass. For we must not only remember how many died, but also remember how humans were sacrificed. Such memories will be especially important when tech companies try to solve the “essential worker” dilemma, not by helping to create better working conditions for body workers, but by helping to supervise the working conditions of body workers in order to separate the sick from the not-yet-sick, and by helping to replace body workers with robots. Just as technologies let us dream of individually living forever by replacing our bodies with machines, so too do technologies let

us dream of socially living forever by replacing our body workers with machines. But both of these dreams are nightmares, nightmares that the coronavirus is likely to help make many of us fantasize about even more.

Nolen Gertz is Assistant Professor of Applied Philosophy at the University of Twente, and the author of *The Philosophy of War and Exile* (Palgrave-Macmillan 2014), *Nihilism and Technology* (Rowman & Littlefield, 2018), and *Nihilism* (MIT Press, 2019).

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C H A P T E R



19

The Post-Coronavirus World of Business, Education and Digital Lives

JOÃO PEDRO DE MAGALHÃES

COVID-19 is the biggest shock to our lives in decades. Its effects will be felt long after the pandemic and crisis have passed. Clearly the economy will take a major hit with a long recovery looming ahead. Some industries like tourism, transportation, and hospitality will be particularly affected. In the long-term, consequences to businesses will reflect changes to society and to our lifestyles. Digital technologies, already widespread, will expand even further for both leisure and work. The services sector is the one that best responded to the pandemic thanks to the ability of many employees to work from home. Even once the pandemic is over, homeworking has come to stay for many organizations, thanks to remote access to information systems, video conferences and digital communications. For many, homeworking has been a welcome change. Why face a long commute at rush hour to go to an office with bad coffee when work can be done

from the comfort of the home accompanied by a flavourful espresso? Indeed, I expect workers in the post-coronavirus world to have higher expectations from employers in terms of homeworking and flexible working hours. Likewise, many organizations are discovering the benefits of homeworking. Why pay for offices and associated utilities when employees can work from home? As such, I predict that after the pandemic there will be fewer and smaller offices, with regular homeworking, online meetings and digital platforms becoming more mainstream in many organizations. Indeed, shifting from physical to virtual work has already been implemented by some companies, a trend that will be exacerbated by the coronavirus. Public and government services will also become more digital.

No doubt the mobility industry (airlines, transports, etc.) will be affected in the post-coronavirus world. Tourism will recover faster because a virtual visit to a sunny white-sand beach is not the same as actually going to a sunny white-sand beach. Business travel, however, I think will be affected forever. Travelling on business and face-to-face meetings will be replaced by video conferences and other online communications. Digital lives are already leading to a growth in online meetings, shopping and even personal relationships. Furthermore, organizations will increasingly employ automation, robots and artificial intelligence. We are already tech-dependent and a surge in digital platforms is inevitable in the years post-coronavirus. In other words, a digital transforma-

tion of businesses is already taking place and will be catalysed by COVID-19.

One major sector that will be hit by COVID-19 with lingering effects is education. Many students prefer face-to-face teaching, and traditional classrooms will not disappear. Some topics are also more easily taught online than others. Nonetheless, I believe online teaching will become more prevalent, in particular for older students like university students. Already in recent years we have seen a growth in online courses and e-learning. Due to COVID-19, even traditional universities and schools are now being forced to move teaching online, and many changes will be here to stay. As educators and students alike are forced to move online and dabble in the vast array of online tools and communications, I believe a hybrid model of education will emerge from the pandemic with online education as an integral part of many schools and universities. Online teaching allows students to learn at their own pace, which is particularly suited for more mature, older students. Of course, one downside of moving education online is that it risks increasing the gap between privileged and disadvantaged students, as the latter may lack the tools to join the online world. Therefore, we need to ensure that all students have access to the necessary digital technologies.

Overall, the world that emerges from the COVID-19 pandemic and global crisis will be more digital than ever. As we are forced to adapt to homeworking and digital lives,

many of the changes that were forced upon us by the pandemic will be here to stay. I predict this will mean a world with less travel, less mobility and a growing number of activities online, including in business, leisure and education. Digital lives forever.

João Pedro de Magalhães is a Professor at the University of Liverpool where he leads the Integrative Genomics of Ageing Group. In addition, he has a long-term interest in technological trends and their future impact on society.

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C H A P T E R



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Privacy for Sale

An anonymous life as a luxury product

RUDY VAN BELKOM



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(The following article is a fictional news item from the year 2035)

May 16th, 2035 – 2 minute read

For years, we have given away our data for free to improve our quality of life and ensure our safety. Now that we have discovered that this data is also being used against us, a countermovement has started in society. People pay a lot of money to get off the radar. But this luxury is not available for everyone.

Everyone seemed to agree in recent decades: artificial intelligence (AI) is the key technology for tackling social and economic opportunities and threats. Solutions for problems were therefore driven by data as much as possible. The consequences of this 'drive for automation' are now beginning to become clear. Is this situation still reversible?

ALGOCRACY

The urge to automate everything has led to AI becoming better in performing specialist tasks than humans. Doctors, researchers and judges are all professions in which AI has proven better in practice. We have come to a point where humans have been replaced by AI in several areas.

According to AI developer Joshua Peters, the impact of this development extends beyond the disappearance

of professions. “The discussion about AI was often about the doomsday scenario that intelligent robots would take over control. It was wrongly assumed that a separate system would have the capacity to transcend human intelligence.” The development of AI has never come this far, because human intelligence is more than a powerful brain. What has been overlooked, according to Peters, is that if very powerful specialist systems are linked together, an intelligent system is also created. Instead of ‘*General AI gone bad*’, it is ‘*Narrow AI everywhere*’. Cities are full of sensors and AI makes automated choices without human intervention. This goes much further than smart street lighting. “AI now controls various domains through a series of AI systems. As a result, the government is increasingly left out of the picture. Democracy has turned into an algocracy. More and more experts are warning for a *black box society* in which choices of smart algorithms can no longer be traced. “The genie is out of the bottle and we can’t just put it back”, Peters concludes. It is mainly the large tech companies that seem to benefit from this.

COUNTERMOVEMENT

All this time, many people gave up their data without much hesitation. The algorithm almost functioned as a new kind of religion: you only believed what the system showed you. However, we are now realising that we are increasingly being charged on our data. Consid-

er, for example, the preventive detention of people who could possibly commit a crime in the future. According to technologist Amy Conners, this increase in inequality and social fragmentation is causing a countermovement in society. “The choices you make about handing over your data or not, influence the possibilities and opportunities you get in life. For example, donating data results in lower insurance premiums. When you have little money to spend, you almost naturally choose to hand over your data.” Only more wealthy people have the option to pay a higher premium and thus do not give up their data. Privacy is therefore increasingly becoming a luxury product, which is only available to a small group. According to Conners, this leads to an even greater increase in inequality. “You also see more and more commercial companies emerging that guarantee ‘a life off the grid’. Only if you pay enough you can escape this ‘data prison.’”

However, living off the radar has consequences for your health. Wealthy people can afford to live unhealthy, because their premium does not depend on it. People with a lower income have started to make healthier choices, so that the premiums are lower. The relationship between wealth and well-being has changed enormously as a result.

Rudy van Belkom is Futures Researcher at The Netherlands Study Centre for Technology Trends (STT).

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C H A P T E R

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Humans without Shame

FEMKE NIJBOER

Enschede, the Netherlands, 632 AF, Day 50 in Lockdown

*But I don't want comfort. I want God, I want poetry,
I want real danger, I want freedom, I want goodness.
I want sin."*

– Aldous Huxley, Brave New World

In a world post-corona we will (temporarily?) be shameless. We will be more stoic, more connected, more honest, more aware of our vulnerability. A good portion of fate, Schicksal (in German), het lot (in Dutch), life event (in psychologese) will do that to you. Being all too comfortable, might not be good for humans. In short, dare I say it boldly, although COVID-19 will cause a great deal of human suffering, it may also lead to human growth. Fate has always intrigued me. Although I realize that it is hip to believe in the makeability of your life, I am quite stoic. I believe that as John sung: 'life is what happens, while you are busy making other plans'. Things have happened to me, it seems, and I react to it in the way I see fit at that

moment. Bad things have happened as well. I seem to have an innate ability to shrug things off. Maybe I can shrug too well. I am pretty calm when the shit hits the fan. Admittedly, things could be solved a lot quicker, if I was a bit more nervous about the future. If you want to fix the future, you might want to take some of my fellow writers to war with you instead of me. I am quite comfortable with change. If you want to get nostalgic about the future, I am your woman. Why?

I keep on hearing the word “lockdown”. Due to COVID-19 we are locked in our own houses. We have to stay inside. The word lockdown has a very familiar ring to it for me. Probably because professionally I have used the phrase “locked-in” so much. In the past I used to study people with locked-in syndrome. People whose lives had changed in the blink of an eye due to a stroke in the brainstem. If you survive such stroke at all, it may leave you in a neurological condition in which you cannot move or speak. You can, however, blink with your eyes, think, feel, see and hear. Can you imagine how you would feel if it happened to you? Can you imagine life with locked-in syndrome?

As a psychologist and scientist I asked those questions to people with locked-in syndrome. I learned the so-called alphabet system and could communicate with people with locked-in syndrome. I would say out loud “first row, second row, third row” until the person would look up, signalling “yes”, and then I would say out loud the let-

ters in that row “M, N, O, P, ...” the person looked up again and selected a letter. I asked them about their quality of life, their desire to live or die, and how they coped with such a severe and sudden fate that turns your whole life around. The ones who do cope with this fate seem to be quite stoic as well. They had accepted their physical state of being trapped within their own body. They focused on the things they could do. They were stubborn as hell and would not compromise on the quality of their care, or life. And above all, they were brutally honest to themselves and others. “I am past shame”, said a man with locked-in syndrome to me, “you have to be”. What he meant was that he was past the shame of people cleaning his behind, past the shame of looking different in a world made for the fit and able and past the shame of asking for help and saying what he wants. And what you regain with this seeming surrender is, ironically, your dignity and agency. People in the worst condition possible taught me this: dignity and freedom is not something you get from others. It is something you give yourself. I’m not sure if I explain it well or if many people will understand this.

I concluded from my research on brain injury, that when you are locked-in, with your back against the wall, you have to show your cards. You have to show yourself, otherwise you won’t get anywhere. Similarly, COVID-19 is forcing us all to show our cards and what our interests, strengths and weaknesses are. Now that the virus is in our life we have to accept it as quick as we can. It is what

it is. But we can respond well. I dream of stoic and free humans without shame. Own your weaknesses. I dream of a more dignified future for all in which we, as individuals, take more responsibility and agency over our impact on this world.

Femke Nijboer is Assistant Professor of Creative Technology and Biomedical Signals and Systems at the University of Twente. She studies how creative technology, art and humour can be used to encourage us to think about our brain, health and humanity.

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C H A P T E R



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Human Governance: Some Reflections In Times of Coronavirus Pandemic

YOSSI MEKELBERG

In the midst of a global pandemic which runs havoc with our lives, and the main priority remains containing and defeating this deadly virus, it is also a time to reflect us human beings as individuals, how do we engage to one another, but not less importantly the structures of our societies and how they are governed. It might look premature to contemplate on how the world will look like in the aftermath of the COVID-19 pandemic, a crisis which has crept up on us and not only destroyed our normal daily routines, but is increasingly robbing many of their health and even their life, but very much necessary. There is no reason to doubt that humanity will survive this horrid virus – as so many times in history, a therapy will be found, a vaccine developed, and people will return to something like their previous normal way of life. Meanwhile, in the eye of the storm, we are witnessing both the survival instinct manifesting itself in the stock-

piling of food, medication and – notoriously – toilet paper, even ugly acts of xenophobia, but also endless acts of kindness and community spirit in support of those who need it most. Yet, it is a question not only of our physical survival, but of how our psyche is going to change in relation to ourselves, to others, to society as a whole and to life in general. In other words, what blemishes will be left on our personal and collective perceptions following the months of fear and anxiety, isolation, sickness and loss?

Epochs of national and global crisis are always testing times for relations between governments and those whom they govern. History has witnessed how major crises have led to a radical change of the social order. The Napoleonic wars led to a century-long of the Balance of Power system in Europe; The First World War led to the Russian Revolution and also to the success of the Woman Suffrage Movement; and decolonisation followed the horror of the Second World War. Major breakdowns in our societies can bring governments and its citizens closer together, but they can also drive a wedge between them, straining relations to the point of popular resistance. In the face of the helplessness shown by almost all governments in their at least initial response to the coronavirus outbreak, the governed need to remind themselves exactly why they entrust their own and their loved ones' wellbeing to the decisions and actions of the political elite. According to the 17th-century English philosopher Thomas Hobbes, we humans abandoned what he termed the 'state of nature', in which we were free

of social rules and laws, in favour of a social contract, a term closely associated with the French Philosopher Jean-Jacques Rousseau, because the lawless character of the state of nature leads to an existence which is “solitary, poor, nasty, brutish, and short”. In entering into a social arrangement, or contract, we relinquished many of our previous freedoms in return for security and safety. But the current health crisis represents the worst of all worlds, when governments cannot ensure the most precious commodity we have – life itself – and what freedoms we have are compromised even further, including by using tracking technologies with no respect to privacy and questionable legality. It is then when we are not only entitled proactive members of our societies, but we are obliged to question beyond the competence of our current leaders, but whether it is the system that brings them to power is flawed and the rules and procedures that we are governed by are suitable to present and future structure? Are we adhering to a systems of governance which was conceived in less complex world, when technologies didn’t transcend sovereign borders while now they threaten to replace humans, and when populations were less informed or educated? An abyss separates between these rapid and profound changes in the human condition and the tardiness, let alone the rigidity, of the change in the political world to provide adequate system of government to reflect these changes.

In times of relative calm, the social contract is kept by rulers and governed alike, with relatively minor challenges

that don't rattle the foundations of the social-political arrangements. Most of us are resigned to accepting another of Rousseau's maxims, that "man is born free, and everywhere he is in chains." Most of us accept these chains either because we fear our government, or because they are an integral part of a system that ensures our welfare, our access to education and health, the enforcement of law and order, checks upon our external enemies ... and yes, supermarket shelves stacked with everything we desire. It takes a global crisis like the COVID-19 pandemic to expose the fragility and vulnerability of this social contract, straining relations between governments and governed and leaving mutual trust between the two on a knife edge.

Should we be surprised by this? No, we shouldn't. After all, faced by innumerable similar occurrences, such as wars, tsunamis, earthquakes, refugee crises or mass outbreaks of diseases like Ebola or MERS, most governments prove to be unprepared, inept, and led by events rather than controlling them. Citizens in these situations justly feel indignant and let down, since they have kept their side of the bargain by voting in their governments, or at least abiding by the law and paying their taxes, with the simple expectation that their leaders will be their protectors in normal times, and their saviours in times of severe predicament. Yet, when such a threat announces itself, it transpires that those who govern us have neither intended to, nor have the aptitude to fulfil their side of the bargain. It is the result of inadequate socio-political and economic systems controlled by mediocre leader-

ship. Too many of these leaders care more about obtaining and retaining power than maintaining the welfare of their people in ordinary times, let alone in times of crisis and emergency. Sometimes it takes a pandemic to expose their shortcomings, and their default mode of denial and obfuscation followed by the propagating of confusion and the employment of half-baked measures; and it is only when the severity of the situation finally dawns on them, that the lumbering machinery of big government grinds into top gear – by which time trust has been lost, the food shelves have been cleared and every household has accumulated enough medicines to stock a medium-size pharmacy.

Is the populace genuinely surprised by the behaviour of those who govern it? It shouldn't really be. Shortages of hospital beds and life-saving equipment, not to mention the grim situation faced by countries with no public health service at all, are big issues that never fail to be debated in every single election. Then there is the question of how, when this calamity has long behind us and most of us have somehow managed to survive it, are we going to treat those in government, and what changes in the way we are governed are we going to demand? Will we simply be thankful that we are still here, and return to our apathetic shell, or will we demand explanations for our rulers' lack of preparedness, slow reactions and initial contempt for scientific and medical advice?

The failures of the governing elites in providing a timely response to the coronavirus on the complex challenges it

set to almost all aspects of human existence, triggered the idea that a global pandemic requires a global response, and for this to meet the magnitude of the current predicament, the formation of a global government. Self-evidently the coronavirus pandemic has demonstrated the need for effective and humane leadership, adequate institutions and global mechanism capable of coping with a disaster of almost unimaginable proportions, one that has the ability to adapt to constantly changing circumstances and knowledge. An essential approach in the struggle to successfully contain, overcome and then recover from this crisis is to consider the issue of global governance. Hence, former British prime minister Gordon Brown's proposal to create a temporary form of some temporary global government to tackle the twin medical and economic crisis caused by the COVID-19 pandemic is one that deserves more attention that it has received to date. There were constructive signs by world's leaders that they are ready to abandon their narrowly focused approach on their own locality or even states, and internalise that that COVID-19 has presented us with the insight of addressing both dangers and opportunity as one global humanity, one human race, that should also be governed accordingly. A constructive move in the right direction was when in April a G20 virtual meeting convened by Saudi Arabia, the current G20 chair, launched and initiative to accelerate access to the health tools required to combat COVID-19, and to recognise the World Health Organisation's centrality in this efforts, despite the Trump administration's acidic attacks on that organ-

isation. In an additional glimmer of hope for a wider international cooperation, the European Commission will host a Global Pledging Effort and replenishing campaign to raise 7.5 billion euros to support the boosting COVID-19 diagnostics and treatments. Leaders can squabble over which country to blame, which country reacted way too slowly, or which country might be concealing information to the detriment of others, yet, only a coordinated approach can stop the spread of this deadly viral enemy. Joint efforts to find a vaccine and a cure, sharing methods of treatment and moving equipment as the coronavirus is suppressed in one place but reaches its peak in another, could be done most effectively when coordinated and executed globally. Beyond this pandemic, such global governance and cooperation, won't happen until education and socialisation won't concentrate on what we as humans have in common, instead of what separates and divides us.

This approach is not derived only from idealism with very strong moral foundations, but also from an observation on how division and discord stops progress and also inflicts excruciating pain on humanity. One is not that naïve to truly believe that a global government is going to be formed even in this desperate time of need. Those with instincts for cooperation and multilateralism are operating in this manner with even more zest and conviction, but sadly, in this crisis of biblical proportions, nationalistic-chauvinistic misperceptions among individuals and institutions are in many cases being reinforced. Those

who flourish on discord and conflict are seeking only to blame others, and are working unilaterally with even more gusto. In Washington, Beijing, Moscow, London and elsewhere, multilateralism has been under attack long before COVID-19, and old habits die hard, despite the dramatic change in the rules of the game.

A global government, even a temporary one, is not feasible in world so extremely divided and accustomed to politicians apportioning blame rather than looking for common ground. However, instead of the whims and wishful thinking of politicians, international initiatives to shift the discourse towards more multilateralist and evidence-based policies provided by international professional bodies such as WHO, has demonstrated the right approach to dealing with the coronavirus pandemic, and might be precursor for addressing global challenges yet to unfold.

In the coming months many of our freedoms will be curtailed in the name of containing and defeating the coronavirus. Hence, in our post lockdown, our binge reading and movie watching, our gardening and DIY activities, we might want to reflect on how we would like to be governed in the post-COVID-19 era: how we might obtain more say in running our political entities, in setting national and global priorities, and deciding how these should be paid for. Our rude awakening to the life-and-death issues posed by this pandemic is also an opportunity to take serious heed of Plato's timeless warning: that

“One of the penalties of refusing to participate in politics is that you end up being governed by your inferiors.”

Yossi Mekelberg is Professor of International Relations & Faculty Lead on Outreach Projects at Regent’s University London.

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C H A P T E R



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From Social Distance to Social Disaster

Human Interactions in a Post-Corona World

FALKO LAVITT, VERA VRIJMOETH
& WOUTER DE WAART

It's a Tuesday afternoon in 2059. Olivia is exhausted. She's been in and out of video calls all day and needs some time away from screens. She can't even remember the last time she talked to someone in real life. It must have been years ago. "How things have changed since the 2020 pandemic," she thinks to herself. Suddenly an alarm rings. Her watch is vibrating, causing her fragile arm to jitter. She looks at the screen and recognizes her granddaughter Zoë calling in.

'Hi grandma, you're late! We had our talk scheduled over 3 minutes ago!'" Despite the face-optimisation, Zoë's face still gives off a bit of irritation. "Jeez you look exhausted. Anyway, let's go over those job interviews. We only have 17 minutes and 22 seconds left!" Olivia sighs. Kids these days. Zoë knows I'm tired, but still doesn't

bother to ask me about it. Has the new generation completely lost their human capacity to connect? They only care about efficiency, driven by the latest technological tools. Olivia greets her grandchild with a faint smile and reminisces about the times before the pandemic.

It's 2020 and crisis is a word we hear all too often, and rightly so. Martin Wolf calls the COVID-19 pandemic the worst economic crisis since the Great Depression¹. Countries all over the globe are struggling to ensure that hospitals have enough ventilators, ICU beds, and N95 respirators. Some have called it the most severe healthcare crisis the world has ever seen.

While these regularly discussed elements of the COVID-19 pandemic circulate in the media, the effects of the increased use of technologies on our social interactions has been left largely undiscussed. Human interaction is a basic need,² that is difficult to replace fully through online interactions. The world might be headed straight into a social crisis, as the technology we use to communicate is changing the way we interact with the people around us.

1 [Martin Wolf \(2020\), coronavirus could be worst economic crisis since Great Depression. Financial Times.](#)

2 [Baumeister & Leary \(1995\), The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation](#)

THE RISE OF TECHNOLOGIES

Social distancing forces us to rely on digital tools to communicate both professionally and personally. We stay connected with our colleagues thanks to programs like Zoom, Slack, and Microsoft Teams; we organise ourselves in communities through social media platforms; we meet new people through these platforms and dating apps; we teach and get educated through Google Classroom and Microsoft Teams. Although the adoption of these tools has been growing steadily in recent years, the Coronavirus crisis caused their usage to skyrocket universally and become normalised (see Figure 1³). These communication technologies might have long lasting consequences for the ways in which we interact with one another.

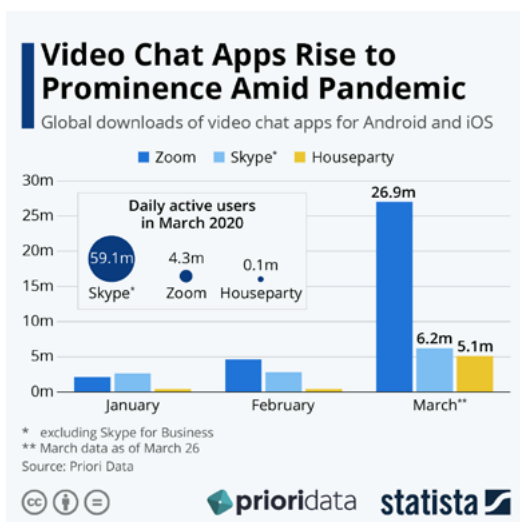


Figure 1: Global downloads of video chat apps for Android and iOS.

3 [Statista \(2020\), Global downloads of video chat apps amid covid 19 pandemic.](#)

Moreover, contrary to what many believe, these technologies are not neutral or apolitical. Rather, they fundamentally reshape the ways in which humans interact in a way that serves some, but certainly not all. As the American journalist Sydney Harris once said “the real danger is not that computers begin to think like men, but that men begin to think like computers”. The growing influence of big Silicon Valley companies is not only problematic because of the rising financial and political power of these corporations, but also because they reshape how we interact, and therefore what it means to be a human being. The Coronavirus crisis and the rapid changes it sparks offer a unique opportunity to engage with, and reflect on these incremental and often invisible developments.

1. COMMUNICATION TECHNOLOGIES INCREASE SOCIAL STRATIFICATION

While Zoë continues presenting various job-offers in 20 second intervals, Olivia is slowly tuning out. She’s thinking about politics. It’s been a long time since she discussed that with someone. Since it’s become such a taboo topic in real-world conversations with friends, she prefers discussing it online. Only platforms and networks known for like-minded members though. It’s better to be safe than sorry. How long has it been since Olivia interacted with people from other segments of society? Grocery shopping, yoga, and having drinks: everything is done with like-minded souls

from like-minded backgrounds. She can't even remember the last time someone disagreed with her on anything.

Communication technologies are solidifying the trend towards more and more digital interactions. The new people a person meets and interacts with has always been limited by factors such as geography, class and level of education. However, since the start of the pandemic offline interaction has been reduced to walks in the park or to the supermarket, often with people we already know. This makes forging relationships with new people offline highly unlikely. Online, we are left to the disgrace of technology to meet new people. This technology operates through algorithms that are dictated by profit-driven market forces rather than sheer coincidence or moments that in hindsight appear 'meant to be'. This means that we are likely to meet more people like ourselves, on and offline, which ultimately leads to a more stratified society.

Take dating apps for example, *the* prototypical method to meet new people in the 21st century. In Spain the use of Tinder has gone up by 94.4% amongst 35-year-olds since the lock-down started.⁴ The main goal of these apps is to keep you swiping, not to create meaningful lasting connections that would make swiping superfluous. Even alternative apps such as Bumble that intend to help you find your soulmate, work through algorithms. These don't allow for the higher level of serendipity

⁴ [Nadia Oelsner \(2020\), 'Netflix and ill' anyone? Online dating in the time of coronavirus, Euronews](#)

found in real-world interactions. Of course real world dating is also limited by existing networks, but it is still far less predictable than online dating is. Online our new connections are determined through an algorithm that bases itself on parameters like your level of education, your social network, or your 'attractiveness score'. Dating apps ensure an unlimited, but very predictable supply of partners similar to oneself, which turns meeting people with an opposing set of values, backgrounds and experiences into a real challenge.

Our Corona-increased dependence on technology for social contact can therefore lead to a decreased likelihood of interacting with people outside our own social bubbles who have different worldviews. Due to rising wealth and income inequalities since the 1980s⁵, European societies are already becoming increasingly stratified with vulnerable middle classes⁶, gentrified cities and debt-based access to higher education systems. The rise of Communication technologies solidifies this trend by decreasing the number of interactions outside of pre-existing social groups and networks. As our social democracies depend on internal debate, social cohesion, solidarity and minority rights, this stratification undermines our democracies on a fundamental level.

2. COMMUNICATION TECHNOLOGIES

⁵ See Piketty (2020), [the World Inequality Database](#)

⁶ WWR (2017), [De val van de middenklasse](#)

ALLOW FOR INCREASED SURVEILLANCE

“Grandma, you there?” Zoë asks impatiently. “Sorry dear, my mind drifted off, you were saying?” Zoë hesitantly repeats the last part of her pitch. It’s about corporate responsibility. Not the kind of corporate responsibility Olivia knows from her childhood, but the corporate responsibility of risk-minimization and surveillance. Employees are assets and should not be exposed to risks. That’s why most multinational companies keep an eye out for their employees, at all times. They monitor eating habits at home, offer the safest and most efficient routes to work and have algorithms in place that accurately schedule leisure time. Its corporate responsibility at its best, Zoë argues.

The more we rely on technology as our means of communication, the more we allow an architecture of surveillance to be put in place. Since everything digital can be more easily tracked, measured, and optimized than its analogue counterpart, businesses will be eager to adopt technological communication methods. With facial recognition software becoming increasingly accurate and accessible every year, it is only a matter of time before our offices are all located in the virtual realm, filled with endless tracking possibilities.

It is no coincidence that the online virtual office Pragli was launched during the height of the pandemic.⁷ With companies that use it, employees are always online and (video) calls can be activated without the receiver ac-

7 [Pragli \(2020\), Introducing Pragli, a virtual office for remote teams](#)

cepting the call. To increase pressure even more, employees' mouse and camera movements are tracked to recognize when a user is idle, and when they are active. This allows managers to rank employees by their 'productivity-score' with just a single click.

Employee tracking and monitoring can go even further than merely recognizing a user's state of activity. Programs like AktivTrak and InterGuard allow managers to peek over the shoulders of employees and watch their screens in real-time, while A.I. powered software automatically classifies their visited websites as 'productive' or 'unproductive'. Under the credo of elevated productivity and pseudo-objectivity, managers are increasingly using these kinds of tools as the foundation of their employee performance evaluations.

In 2014 Edward Snowden said that, "Under observation, we act less free, which means we effectively are less free."⁸ Just like how Foucault's panopticon prison nudges inmates towards good behavior, so does the modern manager's ability to observe an employee's behavior online change their actions. It is no coincidence that this makes employees feel a little uneasy. Increased surveillance through communication technologies impacts our behavior.

⁸ [Gregory Ferenstein \(2014\), NSA spying is causing Americans to self-censor their Internet activity.](#)

3. COMMUNICATION TECHNOLOGIES MONOPOLIZE SPARE TIME

“Bye grandma, thanks for helping out!” And off she goes, Zoë’s face disappears from the screen. Olivia is greeted by the silence of her apartment. ‘Time’, she asks out loud. The digital clock in the living room lights up and tells her it is almost 6 pm. Dinner is delivered at 7 so what to do in the meantime? Sitting here feels restless and meaningless. Maybe opt for an online class of cyber yoga? Or should she use this spare time to improve her Japanese using Triple Lingo? “Just choose and do something meaningful”, she tells herself.

“Doing something meaningful.” Apart from stratification-issues and increased surveillance, communication technologies have a third drawback: the monopolization of spare time. Olivia was in and out of meetings; not because she prefers to, but because it is possible. While offline meetings require people to drag themselves to a room, sit in a chair and tune in, online meetings have no physical limitations. Internet connection is key and since the majority of the world is connected, everybody should be able to tune in at any time. Going idle is not an option. It’s the nature of these new habits that change our social behavior. And since these new habits are created and stimulated by multinationals with the sole purpose of keeping users activated instead of idle, they are not likely to change in the near future. In the brick-and-mortar office there are coffee-machine moments where people

chit chat about last weekend's football match, current affairs, or gossip about the latest family drama. Similarly, students use spare time in between classes to hang out in the park or play football. Although these activities may seem meaningless from an outcome-oriented perspective, they are incredibly important. Why? Precisely because of their meaninglessness! There is no target to be met when hanging out with friends or chatting at the coffee machine. Spare moments are free of 'efficiency', 'productivity' or 'purpose'. The Dutch even have a term for this kind of recreation: 'niksen'⁹ – the art of doing nothing. It is this art that is being lost.

Communication technologies minimize idle time and regular use of these technologies is giving rise to new feelings of tiredness, anxiousness, or worries about yet another video call. This newly coined "zoom fatigue" is caused by the unnatural conversational environment that video calling creates. To name a few: extreme prolonged eye contact, enlarged faces, and the turn-based conversations of zooming all contribute to the heavy cognitive load that makes us feel so drained¹⁰. To ensure a healthy living and working environment now and in the future, it is therefore crucial to protect ourselves against surveillance technology's mental effects, as well as against the threat it poses to relaxation and 'doing nothing' every once in a while.

9 [Carolien Hamming \(2018\), Niksen: The Art of Doing Nothing](#)

10 [Julia Sklar \(2020\), 'Zoom fatigue' is taxing the brain. Here's why that happens. National Geographic.](#)

LET'S THINK TWICE BEFORE COMMUNICATION TECHNOLOGIES STICK AROUND

The widespread adoption of technologies during this pandemic poses major risks to the future of social interactions. Will it be just Corona-temporary? The history of policies introduced during crises suggests otherwise. Many of the anti-terrorist measures introduced after 9/11 are still in place today. Or as Yuval Noah Harari explains in the Financial Times: “Temporary measures have a nasty habit of outlasting emergencies”. So should we just stop using these technologies all together then? No, not per se. Communication technologies play an important role in coping with this crisis. In order to use these technologies responsibly *and prevent* our world from becoming like Zoë’s, we have to rethink what real connections mean and ensure that these considerations help shape future technologies and – perhaps more importantly – our interaction with them.

Only by collectively reframing the public debate can we do what Olivia in 2059 wishes she had done 39 years ago. It is up to you and me, and it is not going to be a walk in the park. Conversely, multinationals are more powerful and merciless than ever before. In the name of profit, they allow a world run by efficiency, while promising to make it more open and connected. Preventing a Zoë-like future from occurring requires us to unmask this narrative and expose it as fraudulent. This requires us to make different decisions not only as consumers, but also as citizens of democratic nations. Only in this

way can we become less like Zoë and more like Olivia. Ain't that something worth telling your grandchild.

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Notes

CHAPTER 2

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CHAPTER 5

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