


Homo disruptus and the future church

**Author:**André Ungerer^{1,2} **Affiliations:**

¹Reformed Theological College, Faculty of Theology, University of Pretoria, Pretoria, South Africa

²Netherdutch Reformed Church of Africa, Pretoria, South Africa

Research Project Registration:**Project Leader:** A. Ungerer **Project Number:** 82329542**Description:**

This research is part of the project, 'Contextualized Reformed Theology in South Africa', directed by Dr Andre Ungerer of the Reformed Theological College, Faculty of Theology, University of Pretoria.

Corresponding author:

André Ungerer,
andre.ungerer@up.ac.za

Dates:

Received: 04 Mar. 2019

Accepted: 05 June 2019

Published: 21 Nov. 2019

How to cite this article:

Ungerer, A., 2019, 'Homo disruptus and the future church', *HTS Theologiese Studies/Theological Studies* 75(4), a5447. <https://doi.org/10.4102/hts.v75i4.5447>

Copyright:

© 2019. The Authors.
Licensee: AOSIS. This work is licensed under the Creative Commons Attribution License.

The Fourth Industrial Revolution is a phrase that is frequently heard in the media. This study explores the major changes that this revolution has installed for us. The Fourth Industrial Revolution is an umbrella term for many aspects, and the study takes note of the concepts like the Internet of Things, artificial intelligence, artificial general intelligence, artificial superintelligence, transhumanism and *Homo digitalis*. The spin-off effect of this revolution may cause possible disruptive effects on *Homo sapiens* by creating greater numbers of *Homo disruptus*. The term *Homo disruptus* is not a frequently used term, although it can be used in conjunction with the disruption that will be part of our future. Disruption may occur because of emerging technology, robotics, unemployment, digital dictatorships and exploitation, the side effects of *Homo digitalis* and transhumanism. The church will be part and parcel of this world, although the church does not have to be a victim and can play a significant role in anchoring *Homo disruptus* with the timeless message of the gospel and finding innovative ways to deal with their disruptive world.

Keywords: Homo Disruptus; Homo Digitalis; Church and the Fourth Industrial Revolution; Transhumanism; Post-humanism; Artificial Superintelligence; Fragmentation and the Church; Super Cyber-Specialised Homo Deus.

Introduction

To the best of my knowledge, the term *Homo disruptus* is not a widely known one. An Internet search resulted in only a few hits. One of the more prominent hits was an online learning company, Obami, advertising an online course with the title '*Homo disruptus*, preparing for the future you'. The subtheme to the title is 'Mayor disruptions affecting the world today'. In practical theology, we can argue that the idea of *Homo disruptus* is not a foreign concept keeping in mind the words of the Heidelberg Catechisms, Question and answer 2: '... how great my sin and misery are...'. Sin and misery are part of our existence, and our salvation from it was the church's main message in the past two millennia, but our fast changing world may create a new form of *Homo sapiens* – that of *Homo disruptus*. *Homo disruptus* derives from the genus *Homo* and the species *disruptus*. The term *disruptus* is the perfect passive participle of *disrumpō* which in short means disrupt, with other possible meanings to break apart, to burst and to throw into confusion or disorder.

The aim of this study is to argue that certain phenomena of our current and future society will have a disruptive effect on *Homo sapiens* producing *Homo disruptus*. *Homo disruptus* will be the product of an ever-expanding offer of technology, material goods, the Internet of Things (IoT) connectivity and availability of multimedia. The aim is not to be negative from the start, but with every innovation there may also be backlashes, unforeseen side effects on *Homo sapiens*. Some of the side effects attracted by *Homo disruptus* will have a spill effect on the church in terms of numbers, social skills, availability and general involvement. Church leaders in future must gain a thorough understanding of *Homo disruptus* that they wanted to attract, either on their doorstep or in cyberspace.

To gain a good understanding of *Homo disruptus* and the church, the study will be divided into two main subheadings, namely, the Fourth Industrial Revolution (which will explain the origins of *Homo disruptus*) and the church and the future. The Fourth Industrial Revolution will also serve as an umbrella term for the concepts like the IoT, Artificial Intelligence (AI), Artificial General Intelligence (AGI), Artificial Superintelligence (ASI), transhumanism and *Homo digitalis*. The positive value of this revolution will not only be reflected on, but also the gloomy shady side of it may contribute to the creation of *Homo disruptus*.

The Fourth Industrial Revolution

The word 'revolution' denotes abrupt and radical change (Schwab 2016:6). The Fourth Industrial Revolution seems not to be just a popular idea anymore, but a reality representing

Note: The Church in need of Change (agency), sub-edited by Erna Oliver (University of South Africa).

Read online:

Scan this QR code with your smart phone or mobile device to read online.

changes that will have an effect on the world in numerous ways (Schwab 2016):

We are at the beginning of a revolution that is fundamentally changing the way we live, work, and relate to one another. In its scale, scope and complexity, what I consider to be the fourth Industrial revolution is unlike anything humankind has experienced before. (p. 1)

The first shift in the way of living, namely, the transition from foraging to farming, happened about 10 000 years ago and is known today as the agrarian revolution. The agrarian revolution was followed by a series of industrial revolutions that began in the second half of the 18th century. The first revolution (approximately from 1760 to 1840) was characterised by the invention of the steam engine and associated mechanical production. The Second Industrial Revolution (late 19th century to early 20th century) made mass production possible because of electricity and the assembly line. The Third Industrial Revolution started in the 1960s and is usually called the computer or digital revolution (Schwab 2016:6–7, compare Bloem et al. 2014:11–12). The fourth revolution can best be described in Schwab's own writing (Schwab 2016):

It began at the turn of this century and builds on the digital revolution. It is characterized by much more ubiquitous and mobile internet, by smaller and more powerful sensors that have become cheaper, and by artificial intelligence and machine learning. (p. 7)

Schwab (2016:3) argues that recent developments can simply not be part of the Third Industrial Revolution because of the following three reasons:

Velocity: The evolving pace is exponential rather than linear and it is because of the multifaceted and deeply interconnected world we live in.

Breadth and depth: A factor that builds on the digital revolution and combines multiple technologies that are leading to unprecedented paradigm shifts in the economy, business, society and individually. It is not only the 'what' and 'how' that are changing but also the 'who' we are.

Systems impact: It is about the transformation of entire systems across and within countries, companies, industries and the society as a whole.

The Fourth Industrial Revolution involves AI and AGI, which results in megatrends like autonomous vehicles, 3D printing, advanced robotics, new materials, new digital approaches like the blockchain (see Harari 2018:6) and technology-enabled platforms. There is also the biology realm with synthetic biology and genetic engineering/editing at the forefront of new inventions (Schwab 2016:14–23).

This is a fascinating stuff, but as mentioned, the aim of this study is to anticipate the disruption that might have an influence on *Homo sapiens* causing him to become *Homo disruptus*. According to Bloem et al. (2014:3), everything can

be reduced to the Human-to-machine Chain (H2M), Machine-to machine (M2M) and Machine-to-human (M2H). Schwab (2016:9,11–13) uses the words development and diffusion, benefits and big challenges (in equal measure), and innovation and disruption when referring to the profound and systemic changes awaiting us. There is also a fear of rising inequality, the rising gap in wealth between those who depend on their labour and those who own capital. In terms of disruption, he made the following remark (Schwab 2016):

The question for all industries and companies, without exception, is no longer, 'Am I going to be disrupted?' but 'When is disruption coming, what form will it take and how will it effect me and my organization?'. (p. 13)

Internet and the Internet of Things

On 8 December 2018, News 24 carried an article about a UN agency for International Telecommunication Union (ITU) report. The ITU chief Houlin Zhou announced that 3.9 billion people are now using the Internet. By the end of 2018, a full 51.2% of people around the world will be using the Internet. According to this report, there was a dramatic growth in developing countries, with 45.3% currently online compared to 7.7% 13 years ago. Another finding, according to the report, is that a full 96% of people now live within the reach of a mobile cellular network and 90% of people can access the Internet through a 3G or higher speed network.

Harari (2018:6) refers to the rise of the Internet since the early 1990s and the way it changes the world.

Engineers directed the Internet revolution more than any political party and then his ironic remark: 'Did you ever vote about the Internet?' The internet allows humans to search their ways in unknown territory and distribute knowledge beyond all borders (Montag & Diefenbach 2018:1). The phrase 'beyond all borders' confirms Harari's remark about political parties and their lack of control concerning the global movement in terms of connectivity.

The concept IoT, according to Technopedia, is the 'computing concept that describes the idea of everyday physical objects being connected to the internet and being able to identify themselves to other devices' (visited on 12/12). According to Bloem et al. (2014:13), the Internet progresses in four steps, for example, from Web 0 (1995) that connected documents, to Web 1.0 (2000) that connected companies, to Web 2.0 (2005) that connected people to the Internet of Things & Services (2010) linking the virtual to the physical world. There are multiple advantages like, for example, the connection to all kinds of domestic appliances like refrigerators, toothbrushes, televisions and vacuum cleaners (Bloem et al. 2014:9; Montag & Diefenbach 2018:8).

Harari (2015:97) emphasises the importance of algorithms: 'Algorithm is arguably the single most important concept in our world'. Schwab (2016:40) also refers to algorithms, robots and other forms of non-human assets as increasing abilities to replace humans because of better monitoring and more

higher quality data around the task. The effect of automation will have a huge effect on humans, although the effect will be difficult to determine. Harari (2018:xii) took data algorithms to the extreme and argued that it:

[M]ight create digital dictatorships in which all power is concentrated in the hands of a tiny elite while most people suffer not from exploitation, but from something far worse – irrelevance. (cf. Göcke 2017:354)

Schwab (2016:36) draws the attention to two camps concerning the effect of emerging technologies on the labour market, namely, those who believe in happy endings believing that workers who lost their jobs because of technology will find new jobs versus those who believe that it will cause unemployment on a massive scale causing a progressive social and political Armageddon. Schwab argues that history shows the outcome to be likely in the middle.

Schwab (2016:42–44) refers to the Gender Gap Report 2015 of the World Economic Forum that revealed two worrying trends. The first pronounced that at the current pace of progress it will take another 118 years before economic gender parity will be achieved. Secondly, there is a concern that the progress towards parity is remarkably slow and possibly is stalling. Owing to automation, there is a cumulative effect of losses across whole job categories that have traditionally given women access to the labour market. With the increasing demand on specialised technical skills, men still tend to dominate computer science, mathematical and engineering professions which may exacerbate gender inequalities.

Internet of Things and possible disruptors

The Internet and IoT are, undoubtedly, here to stay. One can hardly imagine a life without the Internet and all the benefits associated with it. It is predicted that by the year 2025, 80% of the people will have a digital presence on the Internet. But will a digital presence necessarily mean sharing the luxury of IoT? The following are most probably disruptors to *Homo sapiens*:

- A lack of privacy is a common aspect in most shifts¹ that are expected to have taken place by the year 2025, for example, because of a person's digital presence, wearable Internet (clothes connected to the Internet), the IoT, the connected home and smart cities' AI. Along with it is the looming danger of identity theft and a potential of surveillance (Schwab 2016:121–172).
- Irrelevance and inequality because of the digital dictatorship in the hands of a tiny elite (Harari 2018:vii). Inequality leading to irrelevance for those 'falling foul of the algorithm' (Schwab 2016:149).
- Online bullying/stalking is an inevitable result of our digital presence. It seems that it is much easier to do cyber bullying in the privacy of a home behind a computer screen or with a smartphone in the hand.
- Job losses, especially for unskilled labourers, are also a common denominator in most of the shifts (Schwab 2016: 121–172). The unemployment rate in South Africa during

1.Schwab (2016) predicted 23 technological shifts that will be on our doorsteps in 2025.

October 2018 was 27.7% and is still at record high levels, last seen in 2003. The latest figures show that 6.2 million South Africans are currently without work. Of the current 15 million non-economically active people in the country, 2.4 million were discouraged work seekers – a 75 000 increase from the second quarter of 2017 (Peyper 2017).

Artificial intelligence, artificial general intelligence and artificial superintelligence

By 2025, it is expected that the first AI will be on a corporate board of directors. It is also expected that in 2025, the CPUs will reach the same-level processing power as the human. In the same year, it is also expected that the first robotic pharmacist will be used in the United States, the first transplant of a 3D-printed liver, the first human whose genome was directly and deliberately edited will be born and the first implant of fully artificial memory in a human brain will have consummated (Schwab 2016:149–150, 153, 164, 168, 170). South Africans are very proud of Professor Mashudu Tshifularo who pioneered a surgical procedure on 13 March 2019 using 3D-printed middle ear bones (The Citizen 2019).

What is the difference between AI, AGI and ASI? Ulbert (2017) provides the following information: AI is a machine's ability to imitate human cognitive abilities like problem-solving and learning. It also involves language, speech and strategic thinking, for example, when we ask Google maps for directions. AGI computers would be equally intelligent as human beings, performing the same tasks with the same level of success, for example, a robot making coffee by using the right tools and ingredients. ASI is about an intellect that is much smarter than the human brain in every field with the danger of a machine capable of constantly learning and improving itself to an unstoppable extreme.

What will be the outcome of AI as mentioned above? McFarland (2014) wrote an article in *The Washington Post* about Elon Musk voices his concern by saying: 'With artificial intelligence, we are summoning the demon'. Others are more optimistic and a recent robot with the name of Sophia made headlines for being the first robot that received honorary citizenship of a country, namely, Saudi Arabia in November 2017. Sophia was developed by David Hanson and can talk in an intelligent way, can express feelings and even have a sense of humour (cf. Stone 2017). Perhaps Harari (2018) viewpoint can be used as a summary of AI in general:

Already today, computers have made the financial system so complicated that few humans can understand it. As AI improves, we might soon reach a point when no human can make sense of finance any more. (p. 6)

Artificial intelligence and possible disruptors

- A big concern by some experts is that the constant learning of super machines (ASI) will accelerate to such an unstoppable extreme that someday the inner works and processes of super machines will be a total riddle to human beings, surpassing their abilities in exponential ways (cf. Harari 2018:6; McFarland 2014; Schwab 2016:138,149).

- Again job losses are high on the agenda. Garimella (2018) is of the opinion that AI-driven automation will eliminate lots of jobs in the most unexpected ways and at an unexpected pace. Skills at this stage that seem immune to AI are higher math, theoretical physics, the higher levels of art and music. Even the sex industry is under siege. Searching the Internet with the keywords: 'AI and sex workers' – it seems that even the oldest profession is in trouble.

Transhumanism

Transhumanism is a term that can be traced back to an essay of Julian Huxley's (1957) with the same title (cf. Gleaves 2017:92; Göcke 2017:348; Kotze 2018:1). Related to transhumanism is a similar movement post-humanism. Wilson distinguishes between the two in the following way, namely, although transhumanism uses technology to just make humanity better, post-humanism uses technology to pursue a newer, more advanced species (Wilson 2016:1). With transhumanism *Homo sapiens* strives to overcome natural limitations, for example, human ageing or intellectual limitation and others by means of genetic engineering, nanotechnology, robotics or uploading our consciousness to super computers (Kotze 2018:1). The international non-profit organisation 'Humanity' advocates the ethical use of technology, such as AI, to expand human capacities because they want people to be better than well – that is their goal for transhumanism (2018). According to Bostrom (2003:1–2), 'transhumanists view human nature as a work-in-progress, a half-baked beginning that we can learn to remold in desirable ways'. The goal of transhumanists is to become post-human beings with greater capacities than present human beings have. Göcke (2017:349–350) understands transhumanism as the moral demand to change the body or genome of an individual human subject through the use of applied science. He divides it as internal and external changes to human nature, for example, internal as genetic engineering, nanotechnology, robotics and so on, and external as technical extensions of the body or technical replacements of parts of the body (Harari 2018):

The revolutions in biotech and infotech will give us control of the world inside us, and will enable us to engineer and manufacture life. We will learn how to design brains, extend lives, and kill thoughts at our discretion. Nobody knows what the consequences will be. (p. 7)

Transhumanism and disruptors

- One of the questions arising is the issue about living an indefinite lifespan by technologies designed to stop the ageing process or to overcome death by the use of cybernetic technology, or abandoning our bodies with computer intelligence (e.g. ASI) that will accelerate intelligence even further to a point where our biological minds will be left in the technological dust (Wilson 2016:8). Humans will quite literally be able to 'upload' their consciousness to computers and live a digitally based existence and as long as processors can sustain the 'mind', life would be indefinite (cf. Schwab 2016:169,170; Wilson 2016:8).
- Designer beings are also a reality, and according to Schwab (2016:168), the first human whose genome was directly and deliberately edited will be born by 2025.
- What will be the effect of AI and transhumanism on the church and Christianity in general? In the literature on this topic, the opinions differ vary from outright dismissive (against playing God), cautiously optimistic and overall receptive, although with certain reservations (cf. Göcke 2017; Kotze 2018; Wilson 2016).

Homo digitalis

It is nearly 26 years ago that since the programming of the first website by Tim Bernes-Lee, this unprecedented event in the digital world has shaped our societies and how we can communicate over long distances at nearly no cost (Montag & Diefenbach 2018:1). In their article, Montag and Diefenbach (2018) focus on side effects because of our digital world. A few examples will be briefly discussed:

- Zirschky (2015:5) mentioned that according to a research of the Pew Research Centre in 2010, the average teenager has 3.5 personal digital gadgets and spends 10.5 hours per day in mediated screen time. He also writes that youth aged between 12 and 17 years lead the way as creators of content on the Internet which may be in the form of pictures, videos, blog posts, tweets or status updates (Zirschky 2015:105).
- The computer mouse can be perceived as a lengthening of the human hand because of studies based on the variations of the 'Rubber-hand Illusion' (RHI) paradigm. The Rubber-hand Illusion is experienced when people are facing a fake hand that is simultaneously stroke with their own occluded hand. They experienced the illusion that the fake hand becomes part of their body (Montag & Diefenbach (2018:3). The smartphone also serves as a lengthening of the human being. Montag and Diefenbach (2018:13) mention the omnipresence and destructive influence of smartphones on conversational atmosphere in cafés and other meeting places. An accepted habit is that digital conversation comes first, especially among the younger users, 'Any impulse from the digital world – a phone call, a smartphone push notification, a text message – evokes instant reaction. You read the message, and probably even answer it immediately... Thus, it is no wonder that studies already demonstrated that a silent phone lying on the table has negative impacts on the conversation atmosphere. The threat is always present – the conversation could be interrupted any time' (Montag & Diefenbach 2018:13).
- Abovementioned resonates with the issue of fragmentation because of the use of Internet and social media. Did you ever check your smartphone for time at work and then end up doing something else on your phone? Montag and Diefenbach (2018:6–7) say that our attention is often getting hijacked by the phone and that a high load of incoming messages and e-mails absorbs our attention. Altmann et al. have shown that even short interruptions of 2.8 s can double the rate of sequence errors, while interruptions of average 4.4 s tripled the rate of sequence errors (Altmann et al. 2014:215–226). In a working environment, this type of interruptions on a frequent base contributes to lower productivity.

- Another phenomenon is the 'selfie-paradox' which describes individuals' attitude towards the taking of selfies. According to a poll among 3000 people, age 18–24 years, 30% of pictures taken are selfies (Hall 2013:1). There is a concern related to the excessive self-expression and the obsession of people striving to take that perfect selfie. This obsession causes a decrease in mindfulness, the focus on photographing oneself rather than taking in the surroundings or taking in account the needs of others. This may cause conflict in relationships and foster bodily dissatisfaction and narcissistic behaviour. The interesting thing about the 'selfie-paradox' is the fact that the critical attitude towards selfies is more about the evaluation of others than one's own selfie picture... 'While own selfies were judged as more authentic and self-ironic, others' selfies were judged as more self-presentational' (Montag & Diefenbach 2018:4–5).
- There is an urgency for young people to build their own network which depends substantially on personal skill, individual motivation and the maintaining of the right connections. This can lead to a survival-of-the-fittest approach that can send them into a panic of frenetic activity. The constant Fear of Missing Out (FOMO) can make place of Fear of Losing Out (FOLO) – the fear that one's friends and acquaintances will move on and desert one (Zirschky 2015:105, 107).
- Social media have become an important source of self-esteem because posting one's life can turn into a social competition and usually results in hunting for 'Likes' as a built-in incentive mechanism. The 'Last Seen' and 'Read Receipts' as features of WhatsApp may cause an atmosphere of stress when participants are constantly checking if a sent message has been read (Montag & Diefenbach 2018:4,14). Zirschky (2015:105) writes the following: 'Fail to please the audience and you might find yourself without an audience. Lose the audience and you have lost your network'. And then the importance of network and identity: 'Lose the network, and at some level you lose the community that in some way affirms and creates your very identity'.
- Montag and Reuter (2015:9) stated that compulsive Internet use is a new clinical phenomenon and described in their study the evolution of Internet addiction disorder and functional brain changes, to name but a few. Montag and Diefenbach (2018) asked and answered the following questions: 'Do digital worlds even have the potential to change our brain structure and brain functionality (hence also our psyches)? Will the current ongoing technological/digital revolutions have a lasting imprint on our mammalian—human nature? The answer to this question is very likely a "Yes"'. (p. 8)

Our brain is characterised by being neuroplastic, and when we learn something, the relevant brain regions are trained like a muscle. Learning is re-wiring your brain and can also work in a destructive way as studies pointed out the phenomenon of Internet gaming disorder – a term included in Section III of DSM-5. There is numerous studies by different researchers about the effect of the digital world on

the brain, and the future will discern to what extent the IoT will shape the human brain to *Homo digitalis* (Montag & Diefenbach 2018:8–10).

Summary of disruptors

Schwab (2016) predicted 23 technological shifts that will be on our doorsteps in 2025. There is a lot of thinking, rethinking and research need to be conducted by the church. The side effects of the Fourth Industrial Revolution will cause a lot of *Homo sapiens* to become *Homo disruptus* and others to think of themselves as *Homo deus*. In my view, human beings just thinking of themselves as *Homo deus* may already be *Homo disruptus*.

What will be some of the main disruptors the church has to deal with in the nearby future?

- A society, especially the marginalised (have nots), will be more prone to feelings of diffusion, irrelevance and worthlessness because of the spin-off effect of the Fourth Industrial Revolution. Along with it, a lack of privacy and possible surveillance might exacerbate feelings of powerlessness and being out of control which will contribute to the misery of the marginalised. But there is also the possibility that not only the marginalised will be affected but every human being falling prey to the unstoppable extreme of ASI.
- For the privileged (the rich and people with jobs in future), the church might become irrelevant because *Homo sapiens* will see himself as *Homo deus* because of bio-implants, computer intelligence, indefinite lifespan and so on. Basically there are two scenarios, namely, a relevant church for the 'irrelevant' *Homo disruptus* and a church becoming more irrelevant for the super cyber-specialised *Homo deus*.
- The phenomenon *Homo digitalis* contributes to certain emotional related problems like fear of losing their network and being forgotten, feelings of inferiority with lower self-esteem, the separation between a cyber-image and the real self in normal life. All these can lead to feelings of being alone, abandon and disconnected – a life of total misery. How can the church help *Homo digitalis* to experience Christian community where one can experience equality and belonging?
- *Homo digitalis'* attention span is becoming more and more fragmented because of the addictive effects of the Internet and social media. It was already mentioned that social media comes first in conversations, but what will the effect be on *Homo digitalis* contemplating on a Bible text, listening to a sermon or trying to pray? What remedies must the church implement to counter the effect of fragmentation?
- The neuroplasticity of our brain makes us vulnerable for brain structure changes, for example, the Internet gaming disorder (DSM-5) and other extremes. What role can the church play in helping people that became addicted to the Internet and social media?
- Transhumanism and its concubine, post-humanism will challenge the church in increasing ways on ethical issues like digital-based existence and the possibility of an indefinite lifespan, to name just two examples. How will

the church handle the dogmatic issues associated with the outcome of this movement? How can the church with its life-giving message still be attractive to the super cyber-specialised *Homo deus*?

The church reflection on *Homo disruptus*

What would be an appropriate way for the church to reflect on *Homo disruptus*? Although not a Christian, Harari (2018) provides some wisdom that can help the church discerning the way forward:

So what is next? The first step is to tone down the prophecies of doom, and switch from panic mode to bewilderment. Panic is a form of hubris. It comes from the smug feeling that I know exactly where the world is heading – down. Bewilderment is more humble, and therefore more clear-sighted. If you feel like running down the street crying ‘The apocalypse is upon us!’, try telling yourself ‘No, it’s not that. Truth is, I just don’t understand what’s going on in the world. (p. 17)

The same truth is also valid for the church – we just do not understand what’s going on in the world. The temptation will be to provide a number of dogmatic reasons on what is going on in the world, which will, of course, be relevant, but the Fourth Industrial Revolution with *Homo disruptus* as an inevitable product forces the church to discern each part of the upcoming future in the most intensive manner.

The above-mentioned facts also counter the temptation to provide premature answers to all the questions that were presented under the heading: ‘Summary of disruptors’. Some answers to the questions may come quite naturally, while others (the most) need thoughtful discernment. The truth is that if you take Schwab’s (2016) 23 predicted technological shifts that will be on our doorsteps in 2025, there is still a lot of uncertainty about precisely how it will impact the church. At its best, one can only work with *Homo disruptus* that are now part of our landscape.

Theologians need to be reflective practitioners concerning the Fourth Industrial Revolution, *Homo disruptus* and how it will impact the church. Reflection is a continuous process that cannot be forced into time frames and deadlines. It is worth to take note of a few authors on this matter. The work of Scharmer (2009, 2016) is well known and an excellent example of a reflective process. Ancona et al. (2017) also provide helpful insights as well as Viljoen (2017). In November 2018, I had the privilege to meet Mark Lau Branson at the Fuller Institute as part of a group of South African pastors. At that stage, the facilities of the Fuller institute have been sold, and they were preparing themselves to move from Pasadena to resettle in Pomona. A magazine of Fuller with the title *Disruption* was dedicated to this happening. An article of Branson described the effect of disruption and how practical theology responds to it in a process he named action-reflection. Branson’s (2018) quest for discernment and doing theology in the midst of disruption and bewilderment accentuate the need for reflection. In my opinion, he provides the means in a simple and intelligible way.

According to Branson (2018:43–45), theology is simply how humans think about God. In the context of this article, the question: ‘How can we do theology well in the midst of disruptions?’ He also pointed to what he calls a central affirmation of practical theology, namely, that God is active and God’s current initiatives (actions) take place among people and in specific contexts. The question is: ‘How can we discern what God is doing, and what experiments can we begin in order to participate with what God is initiating?’ Furthermore (Branson 2018):

If God is the primary agent (this is what is at stake in the theological concepts of grace, *missio Dei*, pneumatology, and soteriology), then central to our vocation is discernment and participation. Disruptions make this more acute, but they don’t change our calling. God is present and active, and we are invited to join. (pp. 44–45)

Under the heading, ‘Rise of Disruption’, Scharmer (2016: Loc 231) names a few examples: technology, terrorism, Trump, climate chaos, conflict zones, refugees and polarisation. He is convinced that the rate of disruption will continue to go up, not down, and that there is only one thing we can really control or shape – our interior response! Branson (2018:42) argues that those who are affected by disruptions (including leaders) are likely to use tactics of avoidance like ‘denial, blame, retrenchment, tighter management, increased training and a retreat to (somewhat unreliable) habits’. On the flipside, Ancona et al. (2017:1) warn against what they call ‘the myth of the complete leader, the flawless being at the top who’s got it all figured out’. She and her co-authors elaborate on this issue (Ancona et al. 2017):

It’s an alluring myth. But in today’s world of increasingly complex problems, no human being can meet this standard. Leaders who try only exhaust themselves, endangering their organizations... Accept that you’re human, with strengths and weaknesses. (p. 1)

Although Viljoen (2017) does not argue from a church angle, she distinguishes between foresight and forecast, and says that even the cavemen used leading indicators in foreseeing the future, for example, reading signs in nature to predict a change in weather patterns. She (Viljoen 2017) continues and argues that:

[F]oresight in an organization happens when efforts are made to spot discontinuous change as early as possible and to imagine the possible consequences of that change. Forecast is a good technique to apply when thinking about the short-term future. (p. 1)

Viljoen (2017) provides the following working definition of foresight in an organisation:

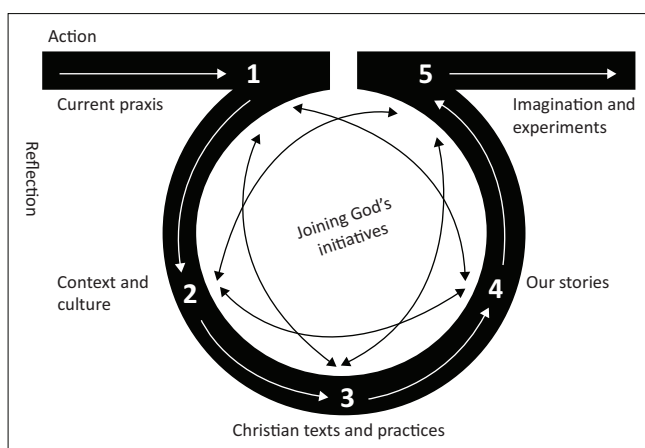
The aim of fostering foresight in an organisation is to develop an informed view of the multiple futures it could be facing so that the organization can learn from the future before it arrives and be prepared for action when it does. (p. 1)

To discern with what initiatives God is busy and where the possibility lies for joining God’s activities, Branson (2018:44–45) prefers a practice-theory-practice practical theological framework rather than a theory-to-practice mode. He offers overview of an action-reflection

(practice-theory-practice method) which focuses on the church but is also adaptable to other situations.

The following (see also Figure 1) is a brief description of the steps of the action-reflection practices (Branson 2018:45):

- *Current praxis* is about describing some aspects of church life, whether some aspects of everyday life or a disruption. This is part of the sensemaking described by Ancona et al. (2017:2–8). Churches need to evaluate their ministry very seriously. Zirschky (2015:111–112) refers to the tendency of youth ministry to create a social hierarchy by putting a high value on attendance, Bible memory and service. By ticking these boxes, teenagers quickly learn to earn some affection. It is a natural impulse to give attention to those students ticking the boxes, but sometimes at the expense of those struggling with difficulties. It is of utmost value for churches to discern what current practices are keeping newcomers from the church. It will also be valuable to include multiple voices and welcome diverse perspectives.
- Analysing *context and culture* and culture (still part of Ancona et al. [2017] sensemaking) by seeking to understand the importance perspectives from social science, history, humanities, philosophy, organisational and communication theories and cultural studies. In the focus of this study, the side effects of the Fourth Industrial Revolution, like irrelevance, unemployment, fragmentation, internet addiction and fear of losing a network, must be explored. This step looks into two directions, back to understand the various influences contributing to the current situation and forward to imagine alternative futures. It resonates with Scharmer's (2016:loc 1141–1156) two selves: the one looking back and the other embracing the future.
- Studying and reflecting on *Christian Texts and practices* like Scripture, theology, Christian history and relevant literature will help to understand our context and what God is doing among and through his followers. Concerning *Homo disruptus*, it is of utmost importance for the church to be acquainted with tendencies and problem cases. With this step, the group can see how the current situation is being shaped.



Source: Branson, M.L., 2018, 'Disruptions meet practical theology', *Fuller Magazine*, Issue #12, pp. 42–47.

FIGURE 1: Action-reflection practices.

- *Our stories* are an important part of action-reflection. It can be stories about the effect of AI or even ASI in peoples' everyday life. Stories about the effect *Homo digitalis* has on each one of us, Internet addiction and gaming disorder and what it did to relations. It can be stories about our own misunderstanding and waywardness or narratives full of wisdom and faith. Again it is necessary to hear diverse voices. In this step, it is also appropriate to look back for perspectives about what influenced the current situation and looking forward for new images of what might be a new reality.

Zirschky (2015:109–128) writes about epileptic practices using Daisy as example who was unconditionally excepted by Kari and Savannah who was part of a church youth group – this is because of a youth minister who created a culture where teenagers were welcomed and loved by all. In the end, Daisy and her brothers stayed with three foster families who taught them the basic skills of life in a loving way.

- With *imagination and experiments*, it is to corporately discern and shape a new praxis by working with the results of step one to four, concerning it a prayerful process to discern what God is doing in our lives and context and experimenting with alternatives. Examples can be the following: How to set up a youth ministry that is welcoming to everybody, how to set up sermons that are user-friendly to the fragmented *Homo disruptus*, how to help the victims of the gaming disorders and how to help jobless people to still have fulfilment.

Conclusion

The Fourth Industrial Revolution and *Homo disruptus* are synonyms. The name of the game will be disruption and the church will not be spared. There is no easy answer, and the church will have to discern how to involve herself in the world of *Homo disruptus*. But with the disruption and uncertainties, there are also opportunities. The action-reflection practices provide a workable way to engage in the process of discernment. In the process of discernment, one outstanding feature of the church must be kept in mind – the church offers *Homo disruptus* what the disrupted world cannot give – a different operating system than that of the IoT, AI, transhumanism and post-humanism and network individualism associated with *Homo digitalis* – an operating system (cf. Zirschky 2015:107–111) of radical love, complete acceptance, radical equality, unity in the midst of radical diversity, radical belonging and grace upon grace on account of Christ.

Acknowledgements

Competing interests

The author declares that they have no financial or personal relationships which may have inappropriately influenced them in writing this article.

Author's contributions

A.U. is the sole author of this article.

[AQ5]

Ethical considerations

This article followed all ethical standards for a research without direct contact with human or animal subjects.

Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Data availability statement

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Disclaimer

The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of any affiliated agency of the author.

References

- Altmann, E.M., Trafton, J.G., Hambrick, D.Z., 2014, 'Momentary interruptions can derail the train of thought', *APA PsychNet, Journal of Experimental Psychology: General* 143(1), viewed 13 December 2018, from <http://psycnet.apa.org/doi/and ing?doi=10.1037%2Fa0030986>.
- Ancona, D. & Malone, T.W. & Orlikowski, W.J. & Senge, P.M., 2017, 'In praise of the incomplete leader', *Harvard Business Review*, viewed 13 December 2018, from www.hbr.org.
- Bloem, J., Van Doorn, M., Duivestijn, S., Excoffier, D., Maas, R. & Van Ommeren, E., 2014, *The Fourth industrial revolution, things to tighten the link between IT and OT*, Sogeti VINT, Groningen.
- Bostrom, N., 2003, 'Human genetic enhancement: A transhumanist perspective', *Journal of Value Inquiry* 37(4), 493–506, viewed 25 February 2019, from <https://nickbostrom.com/ethics/genetic.pdf>.
- Branson, M.L., 2018, 'Disruptions meet practical theology', *Fuller Magazine*, Issue #12, pp. 42–47.
- Garimella, K., 2018, 'Job loss from AI? There's more to fear!', *Forbes*, viewed 10 January 2019, from <https://www.forbes.com/sites/cognitiveworld/2018/08/07/job-loss-from-ai-theres-more-to-fear/#c33219523eba>.
- Gleaves, J., 2017, 'Beyond Prometheus, strawmen, and science fiction: Ethicists and the moral debate over enhancements to human performance', *Kinesiology Review* 6(1), 91–98. <https://doi.org/10.1123/kr.2016-0042>
- Göcke, P., 2017, 'Christians Cyborgs: A plea for moderate transhumanism', *Faith and Philosophy* 34(3), <https://doi.org/10.5840/faithphil201773182>, viewed 12 January 2019, from https://www.academia.edu/37622311/CHRISTIAN_CYBORGS_A_PLEA_FOR_A_MODERATE_TRANSHUMANISM.
- Hall, M., 2013, 'Family albums fade as the young put only themselves in picture', viewed 13 December 2018, from <http://www.telegraph.co.uk/technology/news/10123875/Family-albums-fade-as-the-young-put-only-themselves-in-picture.html>.
- Harari, Y.N., 2015, *Homo Deus, a brief history of tomorrow*, Penguin Random House, London.
- Harari, Y.N., 2018, *21 Lessons for the 21st century*, Penguin Lukraak House, London.
- Huxley, J., 1957, 'Transhumanism', in J. Huxley (ed.), *New Bottles for New Wine*, pp. 13–17, Chatto & Windus, London.
- Kgosana, R., 2019, 'SA professor pioneers 3D inner-ear surgery', *The Citizen*, viewed 15 May 2019, from <https://citizen.co.za/news/south-africa/health/2101000/sa-professor-pioneers-3d-inner-ear-surgery/>.
- Kotze, M., 2018, 'The theological ethics of human enhancement: Genetic engineering, robotics and nanotechnology', *In die Skriflig* 52(3), a2323. <https://doi.org/10.4102/ids.v52i3.2323>
- McFarland, M., 2014, Elon Musk: 'With artificial intelligence we are summoning the demon', *The Washington Post*, viewed 08 January 2019, from https://www.washingtonpost.com/news/innovations/wp/2014/10/24/elon-musk-with-artificial-intelligence-we-are-summoning-the-demon/?noredirect=on&utm_term=.8296d438c170.
- Montag, C. & Diefenbach, S., 2018, 'Towards Homo Digitalis: Important research issues for psychology and the neurosciences at the dawn of the internet of things and the digital society', *Sustainability* 10(2), 415. <https://doi.org/10.3390/su10020415>, viewed 11 December 2018, from www.mdpi.com/journal/sustainability.
- Montag, C. & Reuter, M., 2015, *Internet addiction, neuroscientific approaches and therapeutic interventions*, Springer International Publishing, Bonn.
- Peyper, L., 2017, 'Unemployment at record high for third quarter in a row', *Fin 24*, viewed 09 January 2019, from <https://www.fin24.com/Economy/unemployment-at-record-high-for-third-quarter-in-a-row-20171031>.
- Scharmer, C.O., 2009, 2016, *Theory U, Leading from the future as it emerges*, Berrett-Koehler Publishers, Oakland, CA.
- Schwab, K., 2016, *The fourth industrial revolution*, Penguin Random House, London.
- Stone, Z., 2017, 'Everything you need to know about Sophia, the world's first robot citizen', *Forbes*, viewed 09 January 2019, from <https://www.forbes.com/sites/zarastone/2017/11/07/everything-you-need-to-know-about-sophia-the-worlds-first-robot-citizen/#7195071b46fa>.
- Technopedia, viewed 12 December 2018, from <https://www.techopedia.com/definition/28247/internet-of-things-iot>.
- Ulbert, S., 2017, *The difference between artificial intelligence, general intelligence, and super intelligence, Coresystems as part of SAP*, viewed 08 January 2019, from <https://www.coresystems.net/blog/the-difference-between-artificial-intelligence-artificial-general-intelligence-and-artificial-super-intelligence>.
- UN Report, 2018, *More than half of global population now online: UN*, viewed 10 December 2018, from <https://www.news24.com/World/News/more-than-half-of-global-population-now-online-un-20181207>.
- Viljoen, D., 2017, *The next organisational capability*, viewed 22 July 2019, from <https://www.fin24.com/Finweek/Featured/the-next-1-organisational-capability-20170829>.
- Wilson, L., 2016, '1-introducing some basic promises and concerns of enhancement technologies', *Metaxu Journal* 2(2), viewed 10 January 2019, from <http://metaxujournal.com/1-introducing-some-basic-promises-and-concerns-of-enhancement-technologies/>.
- Zirschky, A., 2015, *Beyond the screen: Youth Ministry for the connected but alone generation*, Youth Ministry Partners and Abingdon Press, Nashville, TN.