THE SOCIAL IMPACT OF ARTIFICIAL INTELLIGENCE

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Introduction

The onset of the digital era has been as significant to human societies as the technological breakthroughs that have preceded it, including the invention of stone tools by early humans, the domestication of wildlife, the control of crop cycles, the invention of the printing press, and the industrial revolution. Each of these technological advancements had massive implications for the evolution of human society. Each raised new opportunities and new problems while leading to the creation of entire civilizations and empires. The technological revolution brought on by the invention of personal computers and the internet, is proving to be just as determinative as these earlier epochal shifts in the course of the human experience.

The rapid rate of technological change and the impact of increasingly sophisticated forms of Artificial intelligence (AI) on human society have forced philosophers, theologians and ethicists to explore their implications for human experience. Human enhancement, genetic modification, remotely controlled weapons, the replacement of human labour and skill by robots, the commodification of data, and the possibility of independent reasoning powers in artificial intelligence all carry both promise and risk. This paper will explore some of the more pressing areas of concern for those wanting to apply a ‘kingdom lens’ to rapidly developing AI technology including the social impact of robotics, autonomous weapons systems, the Internet, social media, and Big Data. Some theological affirmations will be made in the conclusion to which The Salvation Army might consider responding.

I. The Technological Singularity

Many futurists anticipate a moment known as ‘the Singularity’ – the point at which artificial intelligence becomes self-determining and self-perpetuating, able to programme and develop itself without human interaction or control.\(^2\) AI will not necessarily need to develop ‘consciousness’ for this to occur, sufficient levels of ‘super intelligence’ will be enough. According to Kevin Kelly, the Singularity is the point at which ‘all the change in the last million years will be superseded by the change in the next five minutes.’\(^3\)

\(^1\) I have not discussed genetic engineering in this paper as that is the topic of another paper at this Conference.


\(^3\) Cited in Calvin Mercer and Tracy J. Trothen, Religion and the Technological Future: An Introduction to Biohacking, Artificial Intelligence and Transhumanism (Springer, 2021), 186.
‘Singularitarians’ currently anticipate that as early as the year 2040, computer processing and storage capacity will have reached a stage of development capable of storing a human brain. Transhumanists claim that we will eventually be able to leave our bodies and live forever inside a computer simulation programme (silicon-based enhancement) or have such advanced technology applied to our bodies that we will experience god-like capacities and virtual immortality (carbon-based enhancement). Such hopes have a weirdly religious vibe though they often rely on outmoded theological ideas. Milad Doueihi claims that ‘digital culture is the only rival to religion as a universal practice [and is] a world religion with its prophets and priesthood, its institutions and sects and believers, its dissenters and schismatics.’ Of course, technology experts are already theorising about ‘quantum computing’ - a new technology that may leave digital modes of computing behind just as digital earlier replaced analog technology. Like many eschatological theories before it, the Singularitarian utopia may end up proving to be an illusion.

Max Tegmark in his book Life 3.0 outlines three broad responses to the onset of ‘the Singularity’ or something very like it.

- Techno-skeptics – it won’t happen for hundreds or thousands of years, if ever, so there’s no need to worry about it now.
- Digital utopians – it will happen soon, probably in this century and should be welcomed as the next stage in cosmic evolution.
- Beneficial AI movement – agrees it will happen in this century but argues for careful protections through AI safety research to ensure only beneficial outcomes.

Christians who take seriously the possibility of dangerous levels of AI super intelligence being reached will likely be in sympathy with the Beneficial AI movement and support AI research aimed at beneficial use, not only for human beings, but for all of creation.

II. The Social Impact of Robotic Technology

People seem to have a love-hate relationship with the idea of artificial humans. We are drawn to them with deep fascination but at the same time fear their potential to harm us. Of course, most robotic devices currently employed in industry, manufacturing and medical technology are not human-like at all, and we seem quite comfortable with those. Experiments have shown, however, that the more life-like a humanoid robot appears the less comfortable we are in their presence. This phenomenon is known as ‘the uncanny valley.’ First identified in the 1970s, the term refers to the hypothesis that humanoid objects which imperfectly resemble human beings provoke strangely familiar feelings of eeriness and revulsion in observers. Two instinctive responses to robots that have found expression in the arts are the idea that the creation of a human-like being is an act of blasphemy and that the creation of robots will lead to the inevitable destruction of the human race. These two fears may even be seen as causally

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6 Tegmark, Life 3.0, 48.
connected with the blasphemous usurping of the divine prerogative of creation being punished by our extinction.7

Erik Brynjolfsson at the Massachusetts Institute of Technology has a vision of the future which he refers to as ‘Digital Athens.’ In Brynjolfson’s utopia, human drudgery and stress would be eliminated by a robot workforce that freed us all up to be dreamers, musicians, artists, and philosophers. Of course, such a reality would require a very different kind of economic system. For one thing, a guaranteed income, one not based on a return for labour, would be required, raising important questions about equitability and access. In the time it took to develop such a robot utopia, only those in wealthier parts of the world would have access to the technology that frees them from drudgery, leaving the world’s poor open to exploitation as an underclass grinding away at soul destroying physical labour for the benefit of the world’s wealthy and privileged technocrats. It doesn’t take too much thought to realise that we are to a great extent already in that situation. Would progress toward a digital utopia simply reinforce the present system of the exploitation of the labour of the world’s poor to serve the acquisitive needs of a wealthy technocracy?

We are already seeing the social impact of AI and robotics in the workplace. Automatic checkouts at the supermarket, automatic teller machines in banks, automated assembly lines in manufacturing plants, all mean fewer jobs for people. At least, that is, fewer jobs of particular kinds. As employment patterns shift new kinds of jobs become necessary, putting pressure on people to retrain in order to remain employable. We are seeing the emergence of a ‘precariat’ in which people’s sense of vocation is being negatively impacted in a dehumanising process brought on by a more technological workforce.

More positively, robots can be used in very helpful ways to assist us, for example in manufacturing, in medical care and in elder care. AI researchers are currently attempting to teach machines to infer goals from behaviour. If an elderly person needed to explain to a home care robot that they needed to move out of a sedentary position once an hour to reach their health goals, it would be helpful if they didn’t have to create a computer programme to enable it. What if the robot could independently learn our needs and preferences and then prompt, remind and assist the person as and when needed? This is not as easy and straightforward as it might sound, however. The ability to understand the purpose or goals of behaviour is known as ‘inverse reinforcement learning’ and is a very sophisticated learning function. Designing a robot with that capacity is a problem that will need to be solved before robots can offer consistent, reliable, and safe assistance to people. It will also be very important as robotic intelligence advances to higher levels to ensure that robot goals are always aligned with human goals.

7 Mary Shelley’s famous novel Frankenstein, or Prometheus Unbound (1816) was one of the earliest works of English literature to explore the idea of a ‘man-made man’ as an act of blasphemy. As the experimental scientist Dr Frankenstein anticipated a creature made from the reanimated tissues of corpses assisted by electricity, he saw the horror of what he had done in usurping the role of the Creator - ‘I saw the hideous phantasm of a man stretched out, and then, on the working of some powerful engine, show signs of life, and stir with an uneasy, half vital motion. Frightful it must be; for supremely frightful would be the effect of any human endeavour to mock the stupendous mechanism of the Creator of the world.’
One of the most beneficial uses of robots is in manufacturing, where robots are used to build planes, cars, and other machines with much greater precision and efficiency than previously possible. Cottage-level ‘manufacturers’ now use 3D printers to design and create anything their imaginations can devise. While there have been deaths from industrial accidents involving robots, these are small compared to similar deaths in the pre-robotic era of manufacturing. It is estimated that AI-controlled cars could prevent up to 90% of road fatalities by eliminating accidents caused by human error.

Robots are no real threat to human beings at present (though AI researchers are aware of the need to anticipate that possibility). My robot vacuum cleaner can’t even cope with an upturned rug, so I can’t see it overthrowing me any time soon. The rationality of machines is at present very limited without anywhere near the sophistication and flexibility of the human brain. The rules a machine has to learn in order to figure out what to do in any given circumstance are too simplistic to allow them what we might consider ‘agency.’ As technosceptic Andrew Ng puts it, ‘Fearing a rise of killer robots is like worrying about overpopulation on Mars.’ Remote controlled weapons systems, however, do raise important ethical challenges, especially the possibility of their becoming autonomous.

Autonomous Weapons Systems, sometimes referred to as Lethal Autonomous Weapons Systems (LAWS) are military weapons that can independently search for and engage targets through programming rather than human triggering (though, at present, most still involve a human element). Such ‘slaughterbots’ naturally raise fears and ethical concerns. An Open Letter on Autonomous Weapons has so far attracted over 4,500 signatures from AI and Robotics researchers as well as over 2,600 others.

Just as most chemists and biologists have no interest in building chemical or biological weapons, most AI researchers have no interest in building AI weapons — and do not want others to tarnish their field by doing so, potentially creating a major public backlash against AI that curtails its future societal benefits…Starting a military AI arms race is a bad idea, and should be prevented by a ban on offensive autonomous weapons beyond meaningful human control.

In 2020, the Catholic Church signed the ‘Rome Call for AI Ethics,’ along with European Union and United Nations officials as well as IBM and Microsoft representatives. It outlines the principles that should guide the development and implementation of AI technologies with the end purpose being to ‘benefit humanity and protect human rights and dignity.’

III. The Information Revolution

The impact of the Internet s being felt in all aspects of modern life. It has not only changed the way we create, share and consume information, but is also reshaping the way we live as

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8 Cited in Tegmark, Life 3.0, 33.
individuals and society; entertainment, politics, business, learning, trade, social life, relationships, church life, and the list continues. Relational connections are now often forged in a disembodied digital space well ahead of any physical or material connection. This raises many interesting theological questions for Christians, who affirm a materially-based and Incarnational view of reality. By ‘materially-based’ I mean that in Christian thought, ‘matter matters.’ Because mainstream Christian thought rejected the spiritualised disembodied approach of the Gnostics in favour of stressing the goodness of the material creation and the central mystery of the Word become flesh, it has always been nervous about the disembodied nature of the digital world and the identities and communities that are created there. Think, for example, of the flurry of theological comment that arose in light of the global pandemic and the consequent shifting of worship into a digital space. How do we ‘go to church’ online? How are we ‘present’ to each other in a Zoom meeting? Most seem to agree that the physically-distanced conditions created by the global pandemic have forced churches not only to introduce ‘emergency measures’ to stay connected online, but also that church life post-COVID will significantly change as a result of lessons learned from new digital practices and experiences.

The question of digital identities is also of great importance for Christians. Social media, in particular, is a place where personal identities are formed and curated. To what extent are our online identities congruent with our ‘real’ identities? And what of social media etiquette? It seems that social media brings out the best and the worst in human nature as cooperative and supportive activities sit right alongside the worst kind of bullying, hate speech, misogyny, homophobia, misinformation, and dissemination of flaky conspiracy theories, with Christians often seeming to be the worst culprits (or at least just as bad as everybody else). Part of the problem is that social media platforms encourage us to think that our viewpoints and opinions are of such importance and value to the world that they simply must be shared. (This is particularly intoxicating to preachers who are always looking for an audience.) In expressing ourselves so frequently we sometimes forget that social media platforms are not just sites of private opinion but also of public pillorying and in that intersection of the public and the private we can find ourselves entangled in toxicity and malice. Little wonder that many Christians find that a periodic ‘fast’ from social media is a necessary spiritual discipline, or that opting out altogether is the best choice for them.

Another set of concern arises out of the increasingly sophisticated technology behind ‘Big Data,’ defined as ‘extremely large data sets that may be analysed computationally to reveal patterns, trends, and associations, especially relating to human behaviour and interactions.’ It is these data sets that enable companies to identify consumer buying patterns and target them with their products. You may have purchased an item online and then noticed that, almost immediately, advertisements for related products begin to pop up on your Facebook feed. That’s Big Data at work in a closely-knit alliance with consumer capitalism. This is often experienced as ‘someone is watching me’ but this is only true in a metaphorical sense, since this information is generated by an automated set of algorithmic 0s and 1s. There is no

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‘evil genius’ sitting at a computer terminal watching what you buy, or what movies you watch, or whether you support more memes that support conservative or progressive values. However, there certainly are real people in the businesses and corporations who are on the receiving end of such information and who want to use it in ways that directly affect our lives.

Digital natives who have grown up with this technology have accepted what older people might consider the ‘invasion of privacy’ as a small price to pay for the obvious benefit and convenience that Big Data brings. I grew up carrying a street directory in my car and had to learn to read road maps in order to arrive at my destination. Now the built in GPS system in my car will guide you me exactly where I want to go (and in a pleasant voice) without my having to balance a map turned upside down on the steering wheel. The fact that the GPS ‘knows’ exactly where I am at all times seems to be a small price to pay for the convenience gained.

Theologians, philosophers and ethicists need to think carefully about the era of Big Data especially around questions of hermeneutics (the theory of interpretation). What worlds of meaning are being constructed in the digital worlds with which we engage on a daily basis? How do we balance our privacy needs with our desire for the convenience and creative opportunities that digital technology enables and enhances? What strategies should governments, media outlets, educational institutions, churches and other agencies put in place to preserve the values and behaviours that contribute to healthy, cohesive and compassionate societies? Or should such agencies remain out of that process, leaving such choices entirely up to the individual?

One of the ways that digital technology is used maliciously is in the creation and distribution of ‘deep fakes’ - digitally created images and videos that are becoming increasingly more sophisticated and difficult to spot. In an era in which trusted mainstream media is dismissed by political leaders as ‘fake news’ and where media start-ups have little if any moral scruples but have access to the distribution of content on a massive scale, it is little wonder that people are becoming confused about what can be trusted in the media space. Paul Ricoeur’s concept of a ‘hermeneutic of suspicion’ is helpful when applied to the new digital landscape.12 A ‘hermeneutic of suspicion’ questions the meaning of any discourse and asks questions about ‘what’s really going on’ behind it. What are the hidden purposes, agendas and power plays that underlie any and every piece of information we encounter on the Internet? What remains hidden from view lest it disrupt the intended narrative of the text and how might we unmask that? In an age in which digital media is so easily manipulable, a hermeneutic of suspicion is made perhaps more necessary than ever.

**Concluding Theological Reflection**

Christians should consider technology among the good gifts of God, a gift that draws on divinely-given knowledge, wisdom, and skill for the benefit of creation. Like all divine gifts,

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however, a danger lies in their misuse and misapplication arising out of the falleness of the human condition and the debilitating impact of sin on all human endeavour. Technology is power, and power is a seductive capacity that is open to prideful and idolatrous misuse.

There is no doubt that the use of artificial intelligence in robotic applications is creating many opportunities to enhance the quality of human lives, especially for those with disabilities of various kinds and in delivering human beings from the drudgery of repetitive, meaningless activity in the manufacturing sector. However, we need to be aware of the impact of this on employment patterns as more and more tasks once performed by humans are increasingly becoming robotised. Attention should be given to retraining people for new and, perhaps more interesting and rewarding work, so that the transition is not from paid work to unemployment but from one kind of paid work to another.

The Salvation Army’s particular calling to work among the poor should direct its attention to ensuring that any medical benefits that accrue from advanced technology should be made available to all of the world’s people. Any movement in the direction of a world in which only the wealthy have access to advanced technologies, thus creating a privileged class of enhanced humans and a subclass of others would be unwelcome and should be resisted. A good example of how this equitable distribution is possible is the mobile/cell phone, a piece of advanced technology which can be found widely even in the poorest communities.

While recognising the need in a fallen world for nations to develop defence capabilities, Christians ought to bear witness against militarisation as a means of resolving conflicts between nations. We are called to be peacemakers and to follow the Prince of Peace. We have already reached the stage where lethal unmanned drones are directed against human targets by an operator sitting thousands of miles away from the impact site. This has a devastating effect not only on the targeted victims and their communities but also upon the operator who experiences post traumatic stress arising out of the ease with which their killing of fellow human beings has taken place. The development of Lethal Autonomous Weapons Systems would be a step too far as human agency would be removed altogether and the long-feared ‘killer robots’ will have become a reality. The churches should join AI researchers and scientists in calling for a worldwide ban on their development and use.

The call to holiness means that our public and private selves should be alike in character and identity. The Internet, and especially social media is a place where we construct and curate our identities – how we want the world to see us. While privacy is a valuable commodity, integrity is of even higher value. Christians should learn to engage with people on social media just as they do in physical interaction, treating others with dignity and respect, offering the love of Christ to all with whom they interact. While boycotting social media is an appropriate choice for believers, boycotting the Internet altogether would leave the church unable to engage in mission in a world primarily connected through the web. This would be equivalent to an Amish-style reversion to the horse and buggy in the age of space exploration.

As we use the Internet, we need to develop discernment, alert to the ways that social media discourse often persuades by deception, distinguishing between conspiracy theories and
critical research and resisting the manipulation of corporations interested more in their own economic growth than in human flourishing. Jesus taught us to be ‘harmless as doves’ but also ‘wise as serpents’ (Matt 10:16). The appearance of increasingly sophisticated forms of AI will require us to seek this wisdom with ever greater urgency. We need not be fearful, however, because we also see divine purpose in the development of that same technology, especially in its therapeutic applications and in its capacity to address real human problems. To the extent that advanced technology contributes to the human flourishing which will find its ultimate fulfilment in the new creation, we may embrace it with gratitude as a good gift of God.