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Being human and the emergence of artificial intelligence technology

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The question of being human is shaped by our contexts. The emergence of artificial intelligence (AI) technologies is drastically impacting our contexts and relationships, leaving us with questions about who we are and what our roles are in the experience of daily life. This article explores some of the concepts and conversations raised by Cornel W. du Toit and furthers these thoughts considering recent developments in the science of AI. This article offers some reflection on the discourse between science and religion.

Intradisciplinary and/or interdisciplinary implications: This research contributes towards the science and religion discourse, focussing on the question of being human in the age of AI development.

Keywords: AI; being human; technology; science and religion; consciousness.

Introduction

What does it mean to be human? The answer to this question is evolving; pardon the pun. In the last article that he wrote before his untimely passing in 2019 titled *Artificial intelligence and the question of being* (Du Toit 2019), Cornel W. du Toit asked exactly this question. He framed it within the specific context of the rapidly advancing technological achievements that we are witnessing in our lifetime. It was not the first time that Du Toit raised the question of what it means to be human. When one considers the themes of the South African Science and Religion Forum (SASRF), which he coordinated, one finds that this question runs as a common thread through the different seminars and conferences that it hosted, and publications that resulted from these. I had the privilege of working closely with Du Toit on this question and count it as an even greater privilege to have been part of the process to get his last article finalised and published posthumously.

This last article of Du Toit lies close to my heart and has sparked in me a greater interest in the relationship between being human and the increasing incorporation of technology in our lives. The current buzz-phrase in technological circles is undoubtedly artificial intelligence (AI), and this new reality is bringing with it unique questions of being human, human identity and even the place of religion. Artificial intelligence has taken the world by storm and has become familiar even to the everyday user in the form of accessible programs such as ChatGPT, Copilot, Apple AI and other platforms. Artificial intelligence has, almost in an instant, jumped from being a theoretical construct in computer development to being an accessible tool to the person on the street. Besides creating a storm in academic circles regarding learners' use (or abuse) of this technology, AI has surprised the world by producing artwork, being used in recommendation systems for e-commerce, acting as voice assistants on mobile devices, facilitating fraud detection, assisting with healthcare diagnostics, and even spearheading the reality of autonomous vehicles. Although the ethical guidelines of these different uses of AI are being negotiated 'in real time', there are moral and ethical considerations that need expedient resolution as AI can be harnessed to shift power, determine life and death and wage wars 'on our behalf'.

In a recent study, Engelhardt and Kessler explored the ethical considerations for the use of autonomous weapon systems (Engelhardt & Kessler 2024). Autonomous weapon systems refer to the use of AI-driven hardware that may lead to the elimination of the actual deployment of human beings to the battlefield in armed conflict. Of course, we all would like to see a world where the loss of human life in the context of combat scenarios is minimised. The questions beckon, 'How and who are the powers that harness AI technology to eliminate one's enemy? Who carries the responsibility for the inevitable losses that will be experienced if AI is unleashed to determine on its own accord

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who is a target and who it should protect?' The ethical questions surrounding all these systems and scenarios are overwhelming, and one wonders whether we will be able to keep up with establishing guidelines as rapidly as this technology advances. Already, five years have passed since Du Toit's article and we find that what he anticipated then in terms of the timelines of AI development and what we are experiencing today are worlds apart. Technology has outpaced our wildest expectations. I do not think that Du Toit would have imagined that what we are dealing with today would be possible in such a short timeframe.

The aim of this article is to continue the discussion on what it means to be human in the age of AI. This article will use Du Toit's publication as a framework, discussing and advancing some of the main ideas that he shared, and develop these within the existing realities that we face today. As a Christian theologian, I will view these through the lens of my religious identity and my research interest in the discourse between science and religion.

So, where do we start? Let us find wisdom in Lewis Carroll's words in '*Alice's adventures in Wonderland*' (Carroll & Green 1971) and start at the beginning. Du Toit's article suggests that when we ask the question of what it means to be human, we do so with the pre-empting understanding that human beings find their identity first and foremost within their respective contexts.

All species are context-specific

Not only human beings, but all beings live in a reciprocal relationship with their environment (Du Toit 2019:1). This seems to be a rather obvious statement, but it is a point that is underestimated and overlooked in the quest for determining human identity. Psychology uses the distinction between 'nature or nurture' to differentiate between who we become because of learnt behaviour (within our environments), and which characteristics are inherently linked to our genetic makeup. Such binaries are nevertheless too clinical and a closer look at human formation and identity suggests that the relationship between nature and nurture is much more complex than what the proposed dualism suggests (Yaden Jr., Reinking & Smagorinsky 2021).

Nevertheless, context plays a vital role in shaping human identity. Adams and Marshall argue that environmental influences can be classified in terms of macro- and micro-categories (Adams & Marshall 1996:429). From a macro-environmental influence, one identifies the role culture, religion, politics and the like form in the development of human identity. Even language contributes towards human identity formation (Noels, Yashima & Zhang 2020). These macro-factors play a vital role in facilitating ingroup and outgroup dynamics (Preston & Ritter 2013:1482). Being part of an 'ingroup' creates a sense of belonging, acceptance and shapes the way we see the world, make moral and ethical determinations and contribute towards a greater whole (community). Micro influences refer to more subtle forms of contextual changes. My identity at work, for instance, is different from who I am at home. My person in contexts of conflict is worlds apart from who I am in intimate moments. Context makes one point clear: human identity is not only complex but also dynamic.

The integration of technology adds another layer to the complexity of human identity. In earlier articles, I explored the effects technology has on human behaviour (Bentley 2019) and even mental health (Bentley 2023). The incorporation of technology in our daily lives is inevitable and has an impact on our sense of self. In this regard, Du Toit offers an important observation: with the incorporation of technology in our daily functioning, we are not the recipients of evolutionary change because of external variations in context, but we are manufacturing these changes ourselves (Du Toit 2019:1).

As AI becomes part of, for instance, the job-market, which is a place that is one of the primary identity formation contexts, the sense of self becomes increasingly fragile. Mirababaie et al. (2022:95–99) conducted a study on the impact of AI integration in the workplace and the sense of self and came to the conclusion that three shifts in identity are observable. Firstly, the integration of AI changes the very nature of work. Certain skillsets that belonged exclusively to human beings are now more efficiently and cost-effectively applied by AI-driven systems, negating the need for many skilled people in the workforce. Secondly, AI-driven systems challenge the position of status workers have in the workplace. Rather than being respected skilled experts in a certain field, the efficiency of AI systems now requires humans to serve as systems managers. Thirdly, the emergence of AI creates the sense that its superiority in many aspects of the workforce makes it seem to be indispensable, and that human beings are becoming semi-redundant. These three drivers facilitate a profound shift in human identity and sense of contribution or participation in something bigger than ourselves.

Not only does AI have this effect on the workforce, but similarly when employed in decision-making in the retail sector, has the capacity to shape human behaviour (Riegger et al. 2021). The intelligent way in which adverts appear on social media or on commercial platforms is because of complex algorithms that identify commercial behaviour of individuals and lead to a 'shaped' form of commercial activity, convincing consumers of what they perceive to be a need or desire for living a more complete life. Considering these subtle switching of roles, one feels like the scientists in Adams' '*Hitchhikers' guide to the galaxy*' (Adams 2017), who discovered that mice had been deliberately manufacturing results from tests conducted on them to lead the scientists' thinking and so manipulate human behaviour. Of course this is meant in a fictional, comedic genre, but the underlying lesson seems to resonate well with current experiences.

From a theological perspective, one must ask the question whether we are shifting from being creators, to standing on the threshold of becoming human in the image of that which we have created. Du Toit argues that we can indeed find a theological trajectory in the development and integration of

AI technologies in our daily existence. Du Toit (2019) states the following:

> God gave man [sic.] dominion but restricted it to dominion over creation. Humans wanted more. They desired the heavenly realm of the gods. They wanted to become *sicut Deus,* like their maker, which means dominion over God. With AI, human dominion enters a new stage. And man [*sic.*] said: 'Let us make machines in our own image and likeness and let them have dominion over the menial tasks we do not want to do, process difficult calculations and give us access to vital statistical information; let them help us develop the best military hardware and give us god-like influence in the social sphere and increase our profits'. But similar to humans, machines may also want to revolt and become like their creators [*sicut homo*], which does not exclude dominion over their creators. (p. 5)

It sounds a bit like science fiction, but one has to consider that our notions of self, of sin and even salvation are challenged by this new AI environment, which is growing at a rapid rate, leaving behind their creators who cannot keep up with thinking about the consequences this technology has for our own well-being. Of course, it is not all doom-and-gloom when it comes to AI. Through this technology, we are becoming more accurate in our thinking and in the execution of tasks. Efficiency, nevertheless, should not come at the expense of our identity of being human.

But seeing that human identity is so complex and dynamic, adaptable to change, is this in the ambit of AI technology to be as malleable as its creators? Can it understand the necessity for macro- and micro-forms of identity fluidity, or will its 'genetic makeup' of 1s and 0s determine an almost deontological view of the world and AI's place in it? Perhaps the one aspect that differentiates AI from personhood is the human trait of consciousness.

The link between intelligence and consciousness

The conundrum we face with AI is that we as humans label it as having a measure of intelligence. What is intelligence? Could we gauge AI's intelligence in terms of Gardner's 'Multiple Intelligences' (Gardner & Hatch 1989:6)? Would it suffice to subject AI to IQ testing or is it enough for AI to pass the Turing test for it to be considered truly intelligent? For the time being, AI's measure of intelligence is limited to its capacity to employ 'machine learning', by accumulating data (information) and through complex algorithms, produce human-like responses to input (queries and suggested function-based operations). The question of intelligence and consciousness is difficult to determine as the measures used in natural and artificial 'subjects' cannot be universalised (yet) (Gamez 2020:51). To Du Toit, human intelligence is linked to human consciousness, which is '… embedded in language, logic, enhanced memory and significant processing power' (Du Toit 2019:1). May I suggest that consciousness goes further than this? Consciousness gives birth to enquiry, intuition (See Du Toit 2011), emotion, desire, marvel, wonder and awe, all of which are rather abstract when compared to the mechanical-technological form of intelligence we encounter through AI technologies.

The question still remains: 'If machines become "intelligent", will they also be conscious?' (Du Toit 2019:1). Or is consciousness required before true intelligence becomes apparent? For the time being and we have to make this chronological disclaimer, for it seems as if the evolution of technology to some form of consciousness is only a matter of time, the greatest challenge in AI development and research is for AI to develop characteristics such as 'ability to sense, understand, reason, learn and act in dynamic environments' (Ng & Leung 2020:63). Currently, AI can only use the existing data that has been generated and operate within these parameters. It can apply the data creatively, for example, in generating artworks, but it can only use what is available, what is known in order to mimic human creativity. If AI becomes intelligent enough to function autonomously as entities within society, then we have a completely different ballgame. In this case, it would have to be debated whether AI could be afforded certain rights and privileges that traditionally have been allocated to their creators. The debate will then not be between human beings to determine such rights and privileges but would have to be between humans and their AI creations. Meissner argues that careful consideration should be given to develop virtual consciousness and conscience as, for example, AI–human socioeconomic equality could have a negative effect on society as a whole (Meissner 2020:225). Artificial intelligence would outmanoeuvre, outwit and outcalculate their human competitors, leaving the door open for new forms of economic 'have's' and 'have nots'. Perhaps the question is not whether AI is, or can be truly intelligent or conscious, but to what extent can AI experience or determine its own freedom?

May I throw another stone in the bush? When considering the distinction between AI technologies and human beings, we still speak of these as two separate entities. What about the way in which we are increasingly using machines to substitute human organs, limbs and physical functions? Within the world of prosthetics, AI is already incorporated in the manufacturing of myoelectric prosthetics,[1] mind-controlled prosthetics,[2] adaptive prosthetic limbs,[3] bionic limbs with sensory feedback,[4] exoskeletons[5] and assisting in the design and fabrication of new forms of prosthetics (See Bryant 2019; Hassan 2023; Nayak & Das 2020). Not even to speak of the advances being made in the use of AI in 3D bioprinting of organs (Brownell 2024), physical artificial organs and miniature organoids (Procyk 2022) that can 'grow' organs from within the body. Within this context, one can ask: how much of the human body can be replaced by technology before one will cease to be human? Or to stretch the imagination even further: would it be possible, when frail human bodies are no longer capable of functioning, for

1.Devices using muscle-generated electrical signals to control movements.

2.Advanced brain-computer interfaces, which interpret brain signals to produce movement and control.

3.Prosthetics that have the ability to adjust movement based on the user's activity.

4.Prosthetics that allow the user to 'feel' pressure or touch.

5.Mechanisms that allow movement-impaired individuals to actively move.

human consciousness to be uploaded to forms of hardware that will enable the person to 'live' outside their body?

The lines between biological human identity and the incorporation of AI technologies in advancing healthcare are becoming very blurred. Not only do we find that through mobile devices we already have an e-presence, but the physical incorporation of AI technologies is becoming physical extensions of our humanhood, and by default, our identity.

Consciousness and emotions

Perhaps the key to determining the dividing line between humanity and AI integration is in Du Toit's definition of freedom. 'Freedom is strongly linked to our emotions. To be free is to feel free' (Du Toit 2019:2). The feeling of freedom cannot be quantified or captured within an algorithm. It is contextual, dynamic and is experienced rather than explained. No one can truly give a comprehensive description of what it feels like to be free, yet we know when this feeling is absent. The same can be said about feelings like love. What does it feel like to love or to be in love? Words fail us, yet we know when we love, are in love and are loved. The ability to feel is a level of consciousness that would be hard to replicate in an AI environment or platform. Perhaps the functional word in this sentence is 'replicate', mimicking what we understand to be the essence of these feelings and artificially imitate it on a platform that is distinctly non-human. Even then, how will we know that what AI 'feels' is an accurate simulation of our experience of these feelings? The freedom to feel is part and parcel of our human identity. We feel included or excluded, heard or unheard, seen or unseen. We feel love, disgust, attraction, intrigue, curiosity, all of which are generated spontaneously depending on the dynamic contextual influences that we are confronted with. More than that, our emotions assist us in determining ethical and moral frameworks. The feelings of guilt or empathy drive our notions of what is just and how to fight for other's 'freedoms' to secure a just and equitable society. These are characteristics of how we differentiate between morality and ethics, acceptable behaviour and being and taboos.

How far away are we from machines being able to fully feel these emotions? To what extent will ethical and moral frameworks be governed by AI's (current) limitation in the use of algorithms based on data generated by feeling humans? In the context of AI being able to process data at much faster rates than humans, it will still be some time before AI will be able to not only interpret data considering dynamic contexts, but to employ moral and ethical functions and reasoning based on subjective feelings within these contexts. Deontological ethics may come quite naturally to AI, but teleological and virtue ethics will evade it if AI is unable to truly develop emotions and feelings that guide such moral and ethical reasoning.

To be human is to possess consciousness, to feel, to be and feel free, and to use all these traits alongside intelligence to experience 'life'. How far should we go in developing AI technologies? Bagozzi, Brady and Huang (2022:499) argue that AI systems should be limited to 'routine mechanical tasks, analytical tasks, or empathic feeling tasks'. The latter refers to the ability to detect emotions from their human counterparts and to respond in an algorithm-based form of appropriate action. How far do we go in creating machines, able to feel emotions? Up to this point in history, AI is limited to mechanised systems devoid of true human emotions, consciousness or intelligence. Whether emotions, consciousness and intelligence will develop independently from human input is a different question altogether.

What if the development of AI is an extension of human evolution (See Claassen 2014)? What if being human is encapsulated in our ability to transfer information intelligibly, of which AI is the most recent form of human self-expression (Harari 2024:529–577)? These are points that Du Toit did not engage with. Max Tegmark, researcher at Massachusetts Institute of Technology argues that AI can be described as the third wave of 'life' (Tegmark 2017:37–38). The first wave of life can be described as 'Biological'; this ranges from single-cellular organisms to more complex life forms. Life 1.0 is the emergence of life that is solely determined by its deoxyribonucleic acid (DNA) and cannot change either its physical attributes (hardware) or thought (consciousness, software). The second wave of life is found in the emergence of culture, where although physical attributes are still largely determined by DNA, new skills can be learnt like language, tradition, and religion (software). The third wave of life is described as technological, but to the extent that this form of 'life' can redesign its own hardware and software (AI-driven self-propagation).

Tegmark asserts that the development and integration of AI in our world is inevitable. Within this context, humanity should prepare itself to harness this technology that will align human goals to the goals of AI, thereby creating what he calls 'Friendly AI' (Tegmark 2017:334). It is this AI that can assist humanity to better the experience of life on earth by bridging gaps that separate communities (Tegmark 2017:352).

Human being and being human

The last suggestion Du Toit (2019:7) makes in his article is that the experience of being cannot be revealed or emerge in isolation from other beings. What is meant by this? This thought brings us back to the beginning, creating a full circle. Being human is shaped by our interactions with other human beings. These engagements create the macro- and micro-contexts that impact on the formation of our identity as human beings. It may sound like a cliché, but is this not the underlying philosophy of *ubuntu*? 'I am who I am because we are or I am who I am because of others' (*author's own wording*). Being human, besides having the capacity for intelligence, consciousness, emotion and freedom, is to acknowledge that we are social beings, that we '… have a propensity for desiring social inclusion, or at least a sense of belonging' (Steffen 2012:78).

With the emergence of AI, can this be said of its 'being' as well? Can AI exist, developing its identity by engaging with

other AI, or even with humanity? The communal component, which is also at the core of religious belief, is essential in our understanding of being human. This is not to say that to be human requires a belief in God, gods or some form of higher power. Humans have the propensity for religious beliefs because we can engage with the idea of something greater than ourselves, greater than what can be understood, and thereby engaging in metaphysics. Steffen goes further to suggest that these community-oriented vehicles, such as religion, culture, language, and so on play a role in forming these social bonds (Steffen 2012:76), which in itself contributes towards the identity of self within the person, in the context of community. This is what sets being human apart from any development of artificial systems, including AI. Now, although humanity may adapt its own identity while it engages with the emergence of AI technologies, AI can only interact in a being-like fashion with humans on a personal level if it '… has a sense of self and would be able to argue with humans, understand human feelings and emotions and respond with sympathy' (Du Toit 2019:8).

Being human is to experience vulnerability, to have a sense of belonging, desire, dependence, even the limitations of our own mortality (Du Toit 2019:9). This is the 'playing field' of our propensity for religion; finding some form of meaning, even if it is shrouded in mystery, to the complexity of life (Du Toit 2007:11).

Where does this leave religion? Religion is a distinctly human trait, a vehicle to find belonging, but also some form of meaning within the existential reality of life. For this reason, it is unlikely that the emergence of AI and other technologies will render religion and belief null and void. The creation cannot supersede the creator. The creation may 'choose' its gods, but the notion of taking the place of 'the Other' remains an unattainable goal. In religious terms, humanity cannot replace God. Humanity can bow to many other gods, formed from their own hands, including technology and AI developments, but AI cannot become human. Artificial intelligence may be able to put humanity under its authority in future by virtue of its capacity to calculate and process information, but it cannot replace the human spirit, which can feel, express emotions, think of its own mortality and to embrace it.

Humanity may have to rethink some of the tenets of its belief systems in light of AI integration in human life. Pulis (2022:199–219) argues that with the emergence of digital presence of the person, is it moral or feasible to blur the lines between one's physical and digital presence? How do we understand concepts such as salvation, or *imago Dei* or eschatology? How do we understand the questions: 'Where do we come from?' or 'Where are we heading?'.

To be human is a dynamic experience and our encounter with our own creation, AI, is putting humanity on the precipice of redefining who we understand ourselves to be.

Conclusion

What does it mean to be human? What does it mean to be human in the age of AI? At the very basic level, being human is a communal experience, forming our identity as a unique, intelligent species in the context of our interactions with others, as well as the technologies we develop. Being human is to possess consciousness, an understanding of self which sees and understands ourselves in the context of community, the world and all that is in it. To be human is to experience emotion, to feel free, to have the capacity to imagine beyond oneself and to be driven to new frontiers through emotions such as desire, inquisitiveness, intuition and to marvel and stand in awe of that which is beyond our grasp.

Artificial intelligence is certainly playing a new and substantial role in the formation of human identity, by virtue that it is impacting human contexts and relationships. We would be wise to limit the function of AI so that we may not find ourselves ensnared and enslaved by the very tools that we have created. Or perhaps, judging by our addictions to our technological extensions of self, we are already there (and therefore need healing, salvation and a return to the basics of being human).

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