



AI and the Afterlife: From Digital Mourning to Mind Uploading

Nathan Mladin



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Report

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Nathan Mladin

Today, artificial intelligence and information technologies have absorbed many of the questions that were once taken up by theologians and philosophers: the mind's relationship to the body, the question of free will, the possibility of immortality... All the eternal questions have become engineering questions.

– Meghan O’Gieblyn, *God, Human, Animal, Machine: Technology, Metaphor, and the Search for Meaning*

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Contents

Acknowledgments	5
This report in 60 seconds	7
Introduction	9
Grief tech and digital personas	15
Current Market	16
Ethical issues	21
Emotional damage	21
(Mis)use of data	23
Mind uploading: ancient idea, new hope?	30
The intellectual origins of mind uploading	32
What's in a mind?	38
What's in identity?	41
What's in a body?	48
Is technological resurrection possible?	57
Grief tech and mind uploading: what's at stake?	66
Conclusion	73

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This report in 60 seconds

AI is one of the most significant forces shaping the world today. It is poised to transform not only our institutions and capabilities, but our relationships too, including our relationships with deceased loved ones and how we grieve them.

This report explores the intersection of technology with death and grief, an area known as “virtual immortality”. Part one looks at digital legacy and memorialisation, ‘griefbots’ and digital personas. After discussing their representation in popular culture and the market and noting some concerns, the argument put forward is this: while AI-powered digital technology may, under certain conditions, help with remembering loved ones and journeying through grief, the danger lies with hyper-realistic and interactive simulations of the deceased. These risk deceiving vulnerable users and inflicting emotional harm.

Part two explores the notion of ‘mind uploading’ as an example and critique of transhumanism. We show that mind uploading rests on a series of questionable assumptions about the mind, identity, and the body, and is incoherent on both scientific and philosophical grounds. The report ends with a comparison of transhumanist and Christian beliefs about death, the body, and the afterlife, showing that transhumanism is an area of late modern culture where the shadow of Christianity lingers hauntingly, and where Christian beliefs about death, resurrection, and the afterlife are reflected and refracted through a technological prism in fascinating ways.

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Introduction

The transformative implications of widespread artificial intelligence usage crashed into the public consciousness with the general release of ChatGPT in November 2022. Whether it's the profound challenges for democratic processes and the spread of disinformation, the incredible possibilities for improved health outcomes and climate action, or the transformation of modern warfare, this huge acceleration of the Fourth Industrial Revolution affects every field of life – both positively and negatively – and people have started to notice the new world unfolding before their eyes.

Every field of *life*, maybe. But how might such technologies affect our approach to death?

Far less public attention has been given to the emerging field of so-called 'grief technologies' – and especially, the quest for 'virtual immortality'.¹ Virtual immortality is an

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Virtual immortality is an umbrella term which covers a variety of existing, emerging and, indeed, speculative technological capabilities at the intersection of AI and death.

umbrella term which covers a variety of existing, emerging and, indeed, speculative technological capabilities at the intersection of AI and death. At one end of the spectrum, the term covers digital commemoration and the management of the digital footprint left behind by deceased persons (e.g. social media profiles, emails, texts) which are already commonplace. But it also encompasses more futuristic proposals, such as chatbots

or interactive avatars based on the digital footprint of the deceased which leverage so-called generative AI systems like GPT-4 (e.g. multi-modal large language models). And at the

most extreme end are transhumanist proposals that seek to transcend biology and embodied life altogether. One idea that surfaces regularly in public conversation is so-called ‘mind uploading’ – that is, the aspiration to create a digital copy of a person’s brain, ostensibly enabling them to live indefinitely as a disembodied mind or consciousness.

At a time when generative AI, epitomised by ChatGPT, has a hold on public attention and is integrated at pace across many areas of society, is virtual immortality a distraction from the pressing issues of privacy, inequity, safety, disinformation? While avatars of deceased persons are not yet a mainstream phenomenon, a recent poll queried attitudes to AI among Americans and showed that 56% of respondents thought that “people will develop emotional relationships with AI,” while 35% said they’d be open to doing so if they were lonely.² In this way, AI has the potential to transform not only our systems and capabilities, but our relationships – and where grief is concerned, this means our relationships with those we have lost, when we are at our most vulnerable. In the previous Theos report, *Love, Grief, and Hope*, we noted that while the current market for grief technologies such as “griefbots” and interactive avatars based on the deceased is low, openness is higher among the young – again indicating that these technologies may play a growing role in our grieving practices in the future.³ This is especially the case given the continual increase in the quality and power

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AI has the potential to transform not only our systems and capabilities, but our relationships – and where grief is concerned, this means our relationships with those we have lost, when we are at our most vulnerable.

of simulations that comes with the exponential growth in technological capability.

The entire terrain of ‘virtual immortality’, spanning the feasible and the fantastical, not only reflects deep human longings and fears around death and the afterlife and offers important insights into our technologically-driven culture, but is ripe for exploring the ethically salient and philosophically

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rich issues surrounding the use of such technology. These issues include immediate ethical concerns around data collection and privacy, but stretch to more profound issues around the nature of the person, embodiment, mortality, death and grieving, and the afterlife. Fundamentally, a consideration of virtual immortality forces us to confront who we think we are: what is a person? Am I a mind only, or an embodied soul? What is lost when a loved one dies? And what (if anything) could be ‘immortalised’ with the right technology?

This report explores these questions. Part one looks at the phenomenon of digital memorialisation, so-called griefbots and digital personas (aka ‘virtual humans’). It describes their representation in popular culture and the current offering on the market, and discusses immediate as well as deeper ethical issues that arise. Part two explores the fanciful yet fascinating world of mind uploading as an example and critique of transhumanism. Some questions we explore are: what do these technologies suggest about the way our late modern,

technological culture views persons, relationships, death, the afterlife, and the place of the body in human identity? And what, more fundamentally, do they reveal to us about the human condition?

- 1 Also referred to as 'digital immortality' or, less commonly, 'cyber immortality'.
- 2 How people are really using AI (and what they're afraid of) (theverge.com)
- 3 Madeleine Pennington with Nathan Mladin, *Love, Grief, and Hope: Emotional responses to death and dying in the UK* (Theos, 2023), xxii.

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Grief tech and digital personas

Current Market

The intersection of technology, grief and death have been the focus of various popular films and TV series, including *Transcendence* (2014), *Black Mirror* (Netflix), *Upload* (Amazon), and *Altered Carbon*. To give just one example, in the *Black Mirror* episode “Be Right Back” we follow the life of a grieving woman named Martha who, after her boyfriend Ash’s sudden death, discovers a service that enables her to communicate with an AI version of him. Over the course of the episode, she moves from sending a few texts to a chatbot to purchasing a lifelike robot in her boyfriend’s image. The episode explores the themes of loss, grief, and the ethical implications of creating digital replicas of deceased loved ones. It delves into the complexities of human emotions, and ultimately offers an ambivalent answer to the question of whether technology can truly replace authentic embodied relationships.

Black Mirror is a dystopian fiction, but virtual immortality products and services are no longer limited to fictional representation. A range of products similar to the one Martha uses are already available from AI/tech start-ups. For example, the popular ‘social AI app’ Replika started out as a griefbot developed to help the company’s founder, Eugenia Kuyda, process the death of a friend. Today, Replika markets itself as a companion bot and has over two million users. As an AI-based chatbot that typically runs as a mobile app, Replika is designed to engage users in conversation and mimic human companionship. Using machine learning algorithms and natural language processing techniques, it can understand the meaning of messages and generate relevant, personalised responses. Aiming to create a personalized and evolving conversational experience, the chatbot learns from each

interaction, adapting its responses based on the data it gathers from user conversations.

There is also HereAfter AI, a digital legacy app launched by James Vlahos in 2016 after receiving news of his father's terminal cancer, which seeks to "reinvent remembering". Using a virtual interviewer meant to act like a personal biographer, the app allows users to audio record memories and inspiring stories and upload photos and videos to go with them. The app stores and organises the uploaded material making it accessible to the people who have been given access to it. The user experience is based entirely on conversation. Instead of simply browsing an archive, loved ones "hear meaningful stories by chatting with the virtual you."¹

With the arrival of ChatGPT and generative AI more generally, HereAfter is looking to expand the conversational abilities of its app while still restricting to the information provided. This is to prevent not only scraping questionable data from the internet but also emotionally damaging, deceptive interactions with avatars whose outputs would remain unpredictable. As Vlahos has explained, "For our particular application, we really want it to be accurate and truthful. We can't have the AI making stuff up that isn't true to the original person, because that could be a horrible and deceptive experience for relatives later on."²

Vlahos' sense of responsibility here is instructive. He understands that, while in general no individual or purveyor of such digital services actively seeks to deceive, people can still be deceived as they interact with simulations of their loved ones – subliminally (but erroneously) believing they are talking to them, that they are heard and understood. In China, for example, funeral operators and cemeteries are already



GRIEF BOT, *Emily Ikoshi with DALL-E*

“In China, for example, funeral operators and cemeteries are already deploying generative AI to “create digital representations of the deceased... for the dead to ‘come back to life’ in the virtual world”.”

deploying generative AI to “create digital representations of the deceased... for the dead to ‘come back to life’ in the virtual world”. The ‘procedure’ is reported to cost \$7268 “per deceased person, with higher prices depending on what options are chosen”.³

Meanwhile, in South Korea the story of a grieving mother “reunited” with her deceased daughter was the focus of a documentary project early in 2020, attracting attention across traditional and social media. Jang Ji-sung worked with technologists and a child actor to develop her photos and memories of 7-year-old Na-yeon into a virtual reality avatar that spoke, moved, and responded as if a real person. The documentary maker who shared their story said he focused on “remembering” Na-yeon, rather than “recreating” her, though Jang Ji-sung used the opportunity to share with the avatar what she wished she could have told her daughter before she died. In return, the avatar asked her mother, “Where have you been? Have you been thinking of me?” The documentary describes how Jang Ji-sung “had the chance to meet [her daughter] again using virtual reality technology.”⁴

An article that explains the seeming popularity of virtual immortality in China illustrates some of the problems with the language used to describe these phenomena. The headline reads starkly: “China is using AI to *raise the dead*, and give people one last chance to say goodbye.” Reading on, we learn that “the rise of generative AI in China has led to people try[ing] to *recreate their loved ones with tech*” (emphasis ours). The language is more chastened when describing how this all works: “Using old photos, recordings, and messages, they’re training chat programs to *imitate the dead*.” But then philosophical confusion returns: “Mixing an assortment of emerging AI technologies, people in the country have been

building chat programs — known as griefbots — *with the personalities and memories of the deceased*, hoping for a chance to speak to their loved ones again”.⁵

What does it mean to build a chatbot “with the personalities and memories of the deceased”? The philosophical proposition that a chatbot can meaningfully contain someone’s personality and memories, reduced to a series of data points, is here simply taken for granted. The slippage of language and the philosophically curious proposition that one can build chatbots *from* human personalities, for example, are rife throughout the article and illustrate the metaphysical cloud of confusion that surrounds the whole topic of virtual immortality.

At one level, this simply reflects the struggle of finding language that accurately describes the issue at hand – or indeed, the product on offer. It should be obvious, however, that no description is innocent of assumptions about the nature of reality, what it means to be human, and the nature of the afterlife. For example, the very term ‘virtual immortality’, presupposes – in one interpretation at least – the possibility of achieving immortality through technological means, one of the main aspirations of transhumanism, which we discuss in more detail in part two of the report.

This struggle for language reflects and is compounded by a broader disorientation in late modern culture: confusion about the nature of personhood, the role of the body, and the nature of identity. And ambiguity of language can be commercially helpful for the purveyors of ‘grief tech’. The metaphysical question therefore matters not just as an intellectual curiosity, but because it has a real impact on how we approach death and grieve our most painful losses.⁶ As the following sections

explore in greater depth, the use of grief technology is therefore ethically fraught and its potential for misuse is significant.

Ethical issues

Emotional damage

The stated purpose of griefbots and other similar services is to help with the grieving process and with keeping alive the memory of a deceased person. On this reading, they are allegedly a technologically-powered evolution of ancient memorial practices.⁷ Before the age of the personal computer, for example, people would write down stories about their dead or carry a lock of hair from a departed beloved. More recently, memorial practices include custom-made jewellery that includes ashes following a cremation, or “memory [teddy] bears” created from clothing or fabric belonging to a deceased person. Griefbots and avatars are – the argument goes – a technological step up. Echoing this view, FT journalist Emma Jacobs writes: “Strip out the exuberance of tech inventors and what you find is nothing new — just the latest machine through which to process grief.”⁸

But before we accept this argument, it is worth noting an important difference. Older means of grieving and remembering did not obfuscate and conflate the reality of the person that had died and the means of remembering her. But this is precisely what is happening with AI-powered grief tech.⁹ Indeed, the potential for emotional damage and manipulation is significantly increased with the expansion of datafication and the explosion of generative AI. Even a modest amount of data, in the form of old emails, photographs or video recordings can be used to generate realistic simulations of the

dead. Of course, the more the data, the better the simulation and interaction with the bot or avatar. And the better the simulation, the greater risk both of both emotional damage and manipulation, not least for profit.

In an article for MIT Technology Review, Courtney Humphries explains the marketing potential of such technologies: “The power of the digital dead to manipulate the

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living is enormous; who better to sell us a product than someone we’ve loved and lost?”¹⁰ As for the role of such bots in the grieving process, do they hinder or help? While a limited, time-bound interaction with a griefbot or simulation of a loved one may help some with coming to terms with loss and processing grief, there is the danger of becoming overly reliant on such simulated presences, especially as these become increasingly persuasive. In an article for Euronews, Dr Kirsten Smith, a Clinical Research Fellow

at the University of Oxford, is recorded indicating “there is evidence from multiple studies that proximity seeking [behaviours aimed at restoring a closeness with the person who died] is actually linked with poorer mental health outcomes...” She goes on to note that “[it] may block someone forging a new identity without the deceased person or prevent them from making new meaningful relationships... avoiding the reality that the person has died – a key factor in adapting to the loss”.¹¹ The potential for emotional damage from simulations of the dead is explored in more detail further below.

(Mis)use of data

In a context of rapid technological change and progress in generative AI, one very practical risk is the creation of bots or avatars based on either stolen data or publicly available data used without the person's consent (or without the consent of those who have rights over the person's data). Should we allow simulations of the dead without their consent? One can certainly foresee a future where drafting wills will include prohibitions or permissions to use data for simulation purposes.

Legislating to prevent misuse of data is not straightforward, not least given the ambiguities surrounding the relationship between the data and the deceased person. In a paper published in *Nature*, ethicists Carl Öhman and Luciano Floridi from the Oxford Internet Institute argue for an ethical framework for the burgeoning digital afterlife industry. Should we treat digital remains by the same code that museums use for human remains? Doing so would severely limit the ways in which companies can use (or exploit) our data. If digital remains are like “the informational corpse of the deceased”, they write, they “may not be used solely as a means to an end, such as profit, but regarded instead as an entity holding an inherent value.”¹²

Whatever its other merits, this proposal springs from a good instinct: to safeguard personal data from being used for illicit and abusive purposes in the burgeoning digital

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afterlife industry. But the analogy undergirding this conceptualisation of personal data is open to questioning. Should data have the same sacred status as the bodily remains of a person? Should one's angry texts, or metadata about one's movements, carry the same weight as one's corpse? Does this not risk diluting our view of what a person is? One's view of how data relates to and maps onto personhood is decisive here. As we shall explore further in part 2, while our data

are digital reflections of our movement in the world, they are not us.¹³

Alternatively, we might view data as intellectual property. Here, the potential of digital personas extends beyond the realm of posthumous communication – as we are already seeing in popular culture. Canadian pop star Grimes says songwriters and fans are free to use an AI synthesised version of her voice in their original music. Inspired by *Heart on My Sleeve*, a song that used an AI synthesised voice of Drake and went viral (only to be subsequently taken down), the singer says she will share revenues with any creators who leverage her AI-voice in their work.¹⁴

Indeed, it is not inconceivable that musicians, writers and other artists will soon be able to train AI models on their work and license it to various third parties. While the artists are still alive, distinguishing real recordings or artefacts from synthetically produced simulacra will be a real challenge, if not impossible. After their death, we can imagine creative outputs

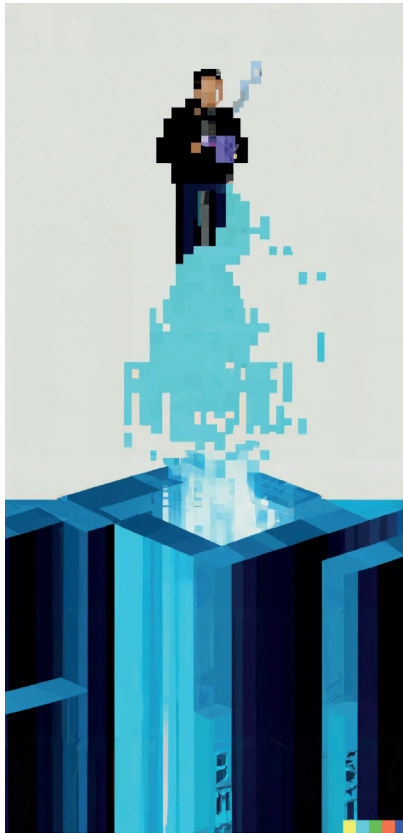
in the style of [insert name of favourite artist] continuing to be made under license or not. ABBA Voyage, a virtual ABBA concert based on historical videos and recordings, illustrates this well. In this way, says David Mattin, “AI makes possible a strange new kind of ghostly afterlife for artists and creatives.”¹⁵

Of course, this has implications across a range of industries. Mattin goes on to speculate that “eventually, we’ll come to view the life and work of an artist as only a kind of preliminary stage; one that trains an AI model on the artist’s unique style, perspective, and voice so that this style can live on, and create new works, forever.” The culture’s reaction to the proliferation of synthetic outputs is hard to predict, although if ABBA Voyage is any indication, with its \$2 million a week in ticket sales, virtual entertainment has a clear future.¹⁶ What is certain is that, faced with synthetic persons in our ears and visual fields, our ability to tell what is real and what is fake, and even to hold to that distinction, may soon be heavily tested.

Another area where we can expect to see digital personas or virtual persons is in business. Executives may soon be able to train models (GPTs) on their emails and any other data source of their choosing, to create digital clones. We may be on the brink of a whole new understanding of multi-tasking and productivity. As our digital footprints (our personal compute) continue to expand and generative AI systems increase in power, virtual managers and other realistic avatars may become a reality. For example, Hossein Rahnama, an entrepreneur affiliated

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Faced with synthetic persons in our ears and visual fields, our ability to tell what is real and what is fake, and even to hold to that distinction, may soon be heavily tested.



VIRTUAL MANAGER, *Emily Ikoshi with DALL-E*

“For now, this is a speculative scenario, but as our digital footprints (our personal compute) continue to expand and generative AI systems increase in power, virtual managers and other realistic avatars may become a reality.”

with the MIT Media Lab, is building what he calls “augmented eternity”, a service that allows people in business settings to create digital personas “that can interact with people on your behalf after you’re dead”.¹⁷

Professional expertise transfer could itself be ‘upgraded’, changing the way professional knowledge and institutional memory is stored, passed on, and accessed. For example, an outgoing employee may be able to (or indeed required!) to create a virtual avatar of themselves which the organisation can access at will, long after the employee has left. Or one can imagine a scenario where people access digital legal services in the form of consultations with digital counterparts to real lawyers at a fraction of the cost. Indeed, Mitra Rahnama, a leading researcher in the field, argues that such avatars hold the promise of shaping new business models cropping around their creation, maintenance, and use-cases. Could the future herald a whole new industry of bespoke digital consultancy services with digital avatars of respected scientists, academics, public intellectuals, and artists?¹⁸

Given the speed of technological progress in AI (particularly the push towards greater autonomy for AI systems that can not only generate content, but execute complex tasks in the real world) it is reasonable to expect a proximate future where humans work alongside and relate to AI/synthetic agents.¹⁹ There are significant legal and ethical issues at play around the relationship between a person and their AI agent, not least how responsibility is distributed and discharged. These are beyond the scope of this report. Legal issues aside, however, living with digital clones and quasi-autonomous virtual assistants and personas will surely, initially at least, make for a disconcerting experience.



The principal issue is the subtle slide towards a world of increasing artificiality: artificial persons/personas, synthetic relationships, and highly mediated interactions in a world of synthesised everything.

However, it should be clear by now that the issues explored above run deeper than immediate concerns around data governance and privacy. Taking a wide lens view, the principal issue is the subtle slide towards a world of increasing artificiality: artificial persons/personas, synthetic relationships, and highly mediated interactions in a world of synthesised everything. Indeed, the direction of travel in much of technological development

(e.g. virtual reality, the metaverse) is away from the body – and this, even as advances in neuroscience and inter-personal neurobiology are growing in appreciation how body and mind are fundamentally intertwined (see part 2 below).

- 1 The rise of 'grief tech': AI is being used to bring the people you love back from the dead | Euronews
- 2 <https://www.euronews.com/next/2023/03/12/the-rise-of-grief-tech-ai-is-being-used-to-bring-the-people-you-love-back-from-the-dead>
- 3 China's Cemeteries Use AI to Bring Dead 'Back to Live' for Tomb-Sweeping Day (yicaglobal.com)
- 4 South Korean mother given tearful VR reunion with deceased daughter | Reuters
- 5 China Using AI to Raise the Dead, Give People a Chance to Say Goodbye (businessinsider.com)
- 6 'It was as if my father were actually texting me': grief in the age of AI | Artificial intelligence (AI) | The Guardian
- 7 China Using AI to Raise the Dead, Give People a Chance to Say Goodbye (businessinsider.com)
- 8 How technology is changing the way we grieve (ft.com)
- 9 I'm grateful to Michael Burdett for this observation.
- 10 Digital immortality: How your life's data means a version of you could live forever | MIT Technology Review
- 11 The rise of 'grief tech': AI is being used to bring the people you love back from the dead | Euronews
- 12 An ethical framework for the digital afterlife industry | Nature Human Behaviour. See also <https://unherd.com/2023/06/the-dilemma-of-displaying-corpses/>
- 13 See Michael Burdett and King-Ho Leung, 'The Machine in the Ghost: Transhumanism and the Ontology of Information', *Information and Reality: Contributions from the Science and Religion Forum, Zygon*, Vol. 58.3:
THE MACHINE IN THE GHOST: TRANSHUMANISM AND THE ONTOLOGY OF INFORMATION - Burdett - 2023 - Zygon® - Wiley Online Library
- 14 Grimes says anyone can use her voice for AI-generated songs - BBC News
- 15 (21) New Week Same Humans #21 - by David Mattin (substack.com)
- 16 'ABBA Voyage' Tour Makes \$2 Million a Week With an Avatar Band - Bloomberg
- 17 Digital immortality: How your life's data means a version of you could live forever | MIT Technology Review. See also: Overview < Augmented Eternity and Swappable Identities — MIT Media Lab
- 18 A New Kind of AI Copy Can Fully Replicate Famous People. The Law Is Powerless. - POLITICO
- 19 See Mustafa Suleyman, *The Coming Wave* (Bodley Head, 2023).



Mind uploading: ancient idea, new hope?

As noted in the introduction, at the extreme end of virtual immortality is the concept of ‘mind uploading’. This is the aspiration to copy or transpose what is perceived to be a person’s essence from its ‘biological substrate’ to a digital one, in the hope of achieving a sort of technologically mediated immortality. How that essence is defined varies, but the most common way of parsing it is (perhaps unsurprisingly) in terms of mind – hence the name ‘mind uploading’. Other candidates include the endlessly elusive notions of ‘consciousness’ and ‘personality’. Once again, this variance in terminology is itself indicative of the philosophical confusion that clouds the whole enterprise from the start. But we are getting ahead of ourselves.

While mind uploading does not exist as a technology, it is perhaps best understood as the crude, fictional distillation of what highly influential transhumanist technologists are actively pursuing and quietly promoting: greater integration with computer systems, through robotic and nanotechnological enhancements and other similar ‘frontier technologies’.¹ Transhumanism can be broadly defined as an ideology and movement centred on the belief that humanity must be enhanced with the help of technologies such as genetic engineering, AI, robotics, and nanotechnology and ultimately



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‘upgraded’.² Stated reasons for these efforts include solving humanity’s wicked problems, including reversing climate change and environmental breakdown, but also supposedly ensuring that humans keep up with, and have the upper hand over a super intelligent AGI – the holy grail of AI research – that has the potential to ‘go rogue’, wreaking havoc on the world. This is a future-orientated philosophy but, as we shall see, it has its origins firmly in the past.

The intellectual origins of mind uploading

The Western intellectual origins of mind uploading coincide with the origins of the elevation of mind over body and the correlative depreciation of the latter. This move can be traced all the way back to ancient philosophical and mystical traditions, with the Greek philosophers and, later, Gnostics. Plato is (in)famous for his notion that the soul is the immortal part of a person, which is superior to and even trapped within the body. Yet his is only a particularly influential distillation of a widespread notion in antiquity: “σῶμα σῆμα” (sōma sēma), a Greek pun literally meaning “body tomb”, according to which the body is like a prison or tomb for the soul, and material existence is therefore inferior to living as disembodied souls or pure minds.³

Reflecting the influence of Platonism and its particular brand of anthropological dualism (i.e. the belief that the soul and the body are distinct dimensions of the human person) Gnosticism took an especially negative view of the material world and the human body in the first centuries BC, seeing them as corrupt, intrinsically fallen or evil. Gnostic writers like Valentinus (c.100-c.160 AD), Marcion (c.85-c.160 BC), and Mani (216-274 BC) rejected materiality and flesh as intrinsically flawed, and embodied life as inherently deficient.

Early Christian writers like Irenaeus fought Gnosticism with vehemence, seeing it as an attack on the goodness, purposefulness, spiritual openness, and intrinsic value of the material world.

These ancient philosophies are early precedents to conceptions of souls or minds uploaded to digital or cybernetic ‘substrates’. The Gnostic mistrust of the body and Greek notions of souls unshackled from their mortal frames resonate powerfully and dissonantly in the ongoing quest for technological immortality.⁴

Perhaps it was René Descartes in the 17th century who most influentially strengthened these ancient foundations for the modern world, with his view of the mind as a thinking, non-material substance, which he considered “mankind’s heavenly endowment”. Descartes aspired to a purified and perfected form of thinking ‘innocent’ of the body.⁵ Mathematics was the perfect candidate for the job, becoming in the mid-19th century “not just a model for pure thinking but the means of describing the process of thought itself.”⁶

Following what he described as a mystical experience, the 19th-century mathematician George Boole took up the ambition of expressing the mathematical foundations of human thought. Later, building on Boole’s efforts, mathematical logicians such as Gottlob Frege, Bertrand Russell and Alfred North Whitehead sought to provide the basis for a mathematical calculus of human reason. This made the simulation of a human mind, reduced to a series



The Gnostic mistrust of the body and Greek notions of souls unshackled from their mortal frames resonate powerfully and dissonantly in the ongoing quest for technological immortality.



ANCIENT SOUL, *Emily Ikoshi with DALL-E*

“Reflecting the influence of Platonism and its particular brand of anthropological dualism (i.e. the belief that the soul and the body are distinct dimensions of the human person).”

of mathematical representations, an imaginable possibility. As historian David F. Noble puts it, “once the mysteries of the immortal mind were rendered transparent and comprehensible, they might be mechanically reproduced, and thereafter independently manipulated.”⁷

In the modern era, the same concerns have largely been explored through literature. One of the earliest works of fiction that anticipates the idea of virtual reality and uploading is found in E.M. Forster’s 1909 novella *The Machine Stops*. In it, humans live in isolated pods and communicate exclusively with the help of technology. Although not a direct depiction of mind uploading, the narrative invites contemplation of the potential consequences of excessive dependence on technology and the consequent isolation from embodied life.

The concept of uploading became more popular still in the latter half of the 20th century, particularly with the rise of cyberpunk literature. One of the most famous works in the genre is the 1956 novel *The Last Question* by Isaac Asimov, which describes humanity uploaded into a cosmic computer to survive the heat death of the universe. In a similar vein, authors like Arthur C. Clarke (see *The City and the Stars*, 1956) and Philip K. Dick (see *Do Androids Dream of Electric Sheep?*, 1968) envisioned in their novels scenarios where the human mind could be copied, transferred, or even downloaded into machines or virtual realms.

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The notion also features prominently in the sci-fi classic films *Tron* (1982), *The Lawnmower Man* (1992), *The Matrix* (1999) and *Transcendence* (2014). And more recently, the popular series *Black Mirror*, *Westworld*, and *Altered Carbon* all delve deep into the philosophical questions and implications of merging with machines. Among other questions, they particularly tackle issues of identity, for example whether continuity between human identity and the identity of an ‘upload’ could be achieved or maintained, the relationship between memory and personal identity, and the authenticity of virtual afterlives.

In the *Black Mirror* episode “San Junipero” (S3 E4), for example, we follow the story of two women, Yorkie, a shy and socially awkward young woman, and Kelly, who is more outgoing and carefree, who meet in the beach town of San Junipero during the 1980s. The two form an unexpected connection, but Yorkie is hesitant to engage fully in the experiences of San Junipero. It is later revealed that San Junipero is a simulated reality: a digital afterlife where the consciousness of the deceased can live on. Yorkie and Kelly are in fact both now elderly, and must navigate the ethical and emotional complexities of deciding whether to live on in San Junipero as young lovers, or to pass on to whatever comes next.

Or take the Amazon series *Upload*, set in a future where humans can upload themselves into virtual realms of their choosing – or, rather, what their wallets allow. There is an important strand of social commentary running through the series, in parallel with the light-hearted exploration of the philosophical and ethical questions raised by the very idea of virtual lives and relationships. It becomes clear that upload social life is just as stratified, unequal and dominated by corporate interests as ordinary social life. The rich get

better simulations, while the poor end up in digital solitary confinement when they run out of credit.

But the notion of mind uploading is perhaps most fully expounded in the work of Hans Moravec, former director of robotics at Carnegie-Mellon University and a pioneering robotics engineer. In his seminal 1988 book *Mind Children*, Moravec puts forward the notion that as technology develops exponentially, particularly in terms of computing power and robotics, the possibility of ‘uploading’ or transferring the human mind to a digital form or substrate and living perpetually becomes feasible. Personal identity, Moravec avers, could in the future be preserved by scanning the vast and intricate web of neural connections and pathways in the brain and reconstituting the conscious mind in an artificial system or substrate which could simulate essential cognitive functions, including memory, the sense of self, and even one’s entire personality.

Moravec’s vision of cybernetic reincarnation was further expanded by author and inventor Ray Kurzweil, a key proponent of transhumanism. In writings like *The Singularity Is Near*, Kurzweil forecasts a coming era when accelerating computing power will enable detailed emulations of the human brain. In fact, Kurzweil has suggested the idea of ‘resurrecting’ his own father from the dead in the form of an avatar.⁸ He famously predicts that humanity will have reached the capacity to simulate conscious minds within

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immensely powerful machines by the 2040s. For Kurzweil, progress towards this scenario is intertwined with the rise of ubiquitous superintelligent Artificial General Intelligence (AGI) and a merger of human and computer (cyborg). This would supposedly see humans transcending biological existence, the frailties and limitations of the human body, and leapfrogging into a post-human future.

In sum, the aspiration to develop mind uploading can be understood as the latest and most ambitious project of a much older and broader strand of thought, as humans throughout history have grappled with the relationship between mind

and body. Technology has given this ancient idea a new form. So, while the technology underlying mind uploading does not exist, its driving concerns undergird much of the wider direction of travel of technological development in the 21st century, particularly in the context of the pursuit of superintelligent AGI.

What's in a mind?

Taken as the primary example of a more pervasive school of thought, the concept of mind uploading is built upon a series of questionable assumptions and reductionist viewpoints.

Perhaps the single most important one is what we might call the physicalist fallacy: that the mind



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is reducible to the brain (as merely a ‘biological substrate’). By this model, all aspects of cognition and consciousness are thought to be explainable by the functions and the processes of the brain alone. Counter-intuitively, it is precisely this mechanical understanding of the human mind that lays the groundwork for a transhumanist escape from the body – for if the mind is purely the result of a mechanical process, it is easily replicable outside the natural body.

However, the relationship between neural processes and subjective aspects of consciousness such as colour or pain (known in the philosophy of mind as ‘qualia’), and indeed the nature of consciousness more broadly, remains shrouded in mystery and cannot be fully captured by descriptions of neural processes, however complex. Noreen Herzfeld, the Nicholas and Bernice Reuter Professor of Science and Religion at St John’s University, summarises the scientific picture as follows:

Our brains are more than neurons and their connections. Our neural connections are both enabled and inhibited by a variety of neurochemicals such as serotonin, dopamine, and oxytocin. These chemicals allow for a variety of firing thresholds and receptions, making the firing of a neuron more complex than a simple binary on or off[...] Furthermore, spontaneous fluctuations occur in which neurons fire even when no external stimulus or mental cogitation has occurred, and these spontaneous fluctuations make up almost 95 percent of brain activity: Our neurons are continually firing,



If we lack insight into the formatting of memory, can we assume that merely simulating cell interactions would reliably generate a person’s implicitly learned, felt, and embodied life experiences?

*but we do not yet know why, nor how this affects our thoughts or consciousness!*⁹

Consequently, we do not fully understand the brain's coding system and how, for example, complex concepts or episodic memories are stored in the brain's neural networks. Some theories suggest memory is distributed diffusely across the brain rather than discretely stored in synapses. If we lack insight into the formatting of memory, can we assume that merely simulating cell interactions would reliably generate a person's implicitly learned, felt, and embodied life experiences? The debate continues, but prominent neuroscientists like Miguel A. L. Nicolelis of Duke University or Christof Koch of the Allen Institute for Brain Science at California Institute of Technology remain unconvinced.¹⁰

Moreover, while proponents of mind uploading focus exclusively on the human brain, it is increasingly understood that the brain is only one (albeit crucial) part of the human nervous system. As early as the 1850s and 60s, neurologists such as Henri-Léon Hartmann and Leopold Auerbach ran experiments and led research into what later came to be known as the enteric nervous system or our 'second brain' in the gut. Ongoing research continues to unravel the enteric nervous system's role in digestion, immunity, neurotransmitter signalling, and gut-brain interactions. It is now understood as a key part of the human nervous system.¹¹

Herzfeld concludes: "While we are only beginning to understand the import of our microbiota, a complete model of the human mind would need to simulate brain, gut, and the millions of bacteria that inhabit the gut."¹² In light of the significant technological challenges of producing a precise map of the brain alone, which contains over 80 billion neurons,

each of which can connect to several thousand others, the challenge of producing a simulation of the entire human neurological system seems insurmountable.

All this is before we raise the question of how thought occurs: it is one thing to map neurons and their dynamic patterns, it is another thing to explain, let alone digitally replicate conscious thought. Still further, would digitally rendered behavioural dispositions (assuming this were possible in the first place) be the same as the accumulated struggles and joys that temper a human life and remain true to one's embodied narrative arc that lends existential wisdom and substance? This is doubtful. After all, it is one thing to duplicate the 'substrate' that hosts memories of those experiences, it is another for a presumed 'upload' to feel that they are its own.¹³

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What's in identity?

A second influential assumption of whole brain uploading is that the locus of human identity and personhood is exclusively the mind. This implies that the essence of who we are as individuals is centred on our cognitive processes, such that reproducing the mind would resurrect the person. This is a conclusion that seems identical to the Cartesian one, but from the opposite point of view (physicalism). It underpins much of AI research and discourse. Nobel Laureate Francis Crick illustrates this view well:

You, your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are in fact no more than the behaviour of a vast assembly of nerve cells



IDENTITY, *Emily Ikoshi with DALL-E*

“Sue Johnson’s work on attachment theory underscores how our connections with others leave lasting imprints on our identity, challenging the reductionist notion that personhood is solely anchored in the mind.”

and their associated molecules ... You're nothing but a pack of neurons.¹⁴

The phrases “nothing but” and “no more than” alone should be a warning that what is being put forward is reductionist. Indeed, far from being located solely in the mind, human identity is a dynamic complex that arises over time from the interplay of various factors, including emotions (which themselves cannot be reduced to neurological correlates), the rest of the human body (not merely the brain), relationships, and the wider social and environmental setting in which any one person is embedded. The paragraphs below summarise some of the evidence for this point.

Interpersonal neurobiology (IPNB), championed by clinical professor of psychiatry and author Daniel J. Siegel, explores the intersection of neuroscience, psychology, and relationships to understand how the mind, brain, and interpersonal experiences shape human development and well-being, and offers a lens through which to understand the interconnected nature of identity formation.¹⁵ IPNB posits that the mind is not confined to the brain but encompasses the entire body and its interactions with the environment. IPNB also emphasizes the interconnectedness of the mind, brain, and relationships in shaping human experiences and identity. For

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example, studies around mirror neurons and neural coupling effects indicate people's brain activity patterns synchronize during social interactions. In short, minds fundamentally permeate one another, and selfhood breathes across perceived boundaries.¹⁶ Similarly, developmental studies confirm identity formation occurs in early attachment relationships through patterns of caregiving attunement. The infant mind-self is profoundly other-dependent initially.¹⁷ Sue Johnson's work on attachment theory underscores how our connections with others leave lasting imprints on our identity, challenging the reductionist notion that personhood is solely anchored in the mind. Overall, the interpersonal paradigm argues self-processes meaningfully exist *between* as much as *within* people. Core aspects of identity and subjectivity emerge through emotionally resonant embodied interactions that structurally couple individual nervous systems.

In the same vein, authors like Bessel van der Kolk, best known for the best-seller book *The Body Keeps the Score*, which popularised the science of trauma, accentuate the importance of acknowledging the bodily dimensions of identity, as experiences become imprinted not only in the mind but also in the very fabric of our physicality.¹⁸

Moreover, a broader socio-environmental perspective, as proposed by ecologically-minded scholars such as Urie Bronfenbrenner, further strengthens the notion that that personhood and identity emerge as an intricate fusion of neurological, bodily, relational, and environmental dynamics.¹⁹

An interesting conception of identity that takes us into the territory of the soul is put forward by computer scientist Ray Kurzweil, who ponders: "So who am I? Since I am constantly changing, am I just a pattern? What if someone copies that

pattern? Am I the original and/or the copy? Perhaps I am this stuff here – that is, the both ordered and chaotic collection of molecules that make up my body and brain.” Ultimately, as Noreen Herzfeld shows, Kurzweil rejects the idea that molecules are the seat of identity, and settles for the idea of patterns:

We know that most of our cells are turned over in a matter of weeks, and even our neurons, which persist as distinct cells for a relatively long time, nonetheless change all of their constituent molecules within a month... I am rather like the pattern that water makes in a stream as it rushes past the rocks in its path. The actual molecules of water change every millisecond, but the pattern persists for hours or even years.²⁰

The notion of patterns presupposes a mind capable of discerning them in the first place, which raises the interesting question of what/ whose mind could hold the pattern of the highly complex creatures that human beings are?

Kurzweil is not far removed from C. S. Lewis’s analogy of the soul as a cascade or waterfall, with the water flowing through it at any given moment being the physical atoms that comprise the human body. In his book *Miracles*, Lewis writes:

On the one hand the living organism is being physically built up by the dead atoms and on the other hand it transcends and dominates them. The waterfall is not merely the descending

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movement of the water but also something emergent from it, something still there when the winter stops the flow. In the same way the soul is not merely the movements of atoms in the brain. We tearlessly strip our material organism down to the bare bones but 'I' still remains.²¹

Lewis is deploying poetic imagery to suggest that the soul or conscious identity is more than just the sum of its material parts. Just as the cascade effect of the waterfall represents something novel beyond the aggregation of individual water droplets, so the unified experience of consciousness and the continuity of the self cannot be reduced to the firing of neurons.

Indeed, the foremost philosophical and legal challenges posed by uploading concern the relationship between a presumed uploaded mind or digital emulation and the conscious person whose mind it is (was?) in the first place. From a legal point of view, should the emulation be considered a legal person with rights, responsibilities, and obligations? Should they be entitled to exercising property rights over their data (their memories and digital experiences). And from a philosophical and theological point of view, should the digital replica be considered a person in the absence of a body? If so, on what basis?

Transhumanist philosopher Nick Bostrom posits that “an upload could have a virtual (simulated) body giving the same sensations and the same possibilities for interaction as a non-simulated body... For the continuation of personhood, on this view, it matters little whether you are implemented on a silicon chip inside a computer or in that grey, cheesy lump inside your skull, assuming both implementations are conscious.”²² Physicist Michio Kaku is not convinced. He warns

that that a brain without a body could suffer the same effects of sensory isolation as prisoners in solitary confinement. He writes: “Perhaps the price of creating an immortal, reverse-engineered brain is madness.”²³ He goes on to note that forced to choose between ‘high-tech’ and ‘high-touch’, people generally choose the latter.

This takes us from brain to whole body uploading. Even if this were possible, simulated brains connected to, and receiving inputs from sensors communicating with the outside world would be markedly different from the intricate way in which the brain receives and registers information through the physical senses. Herzfeld makes

the interesting suggestion that, even “if the essence of the human personality were maintained in the uploading process, the reproduced mind would still crave physical human contact.” It is doubtful fully simulated touch would be satisfying enough, if only because it would be vastly different from the experience of touch we know. Would an existence bereft of touch and physical connection be desirable? Popular mythologies and folk stories about ghosts, she suggests, hold the clue to this answer and channel some of the cultural anxiety around such a notion. Herzfeld explains:

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Would an existence bereft of touch and physical connection be desirable? Popular mythologies and folk stories about ghosts, she suggests, hold the clue to this answer and channel some of the cultural anxiety around such a notion.

While a disembodied mind is a source of hope for transhumanists and AI entrepreneurs, it has been a source of horror in folklore and literature. A soul without a body, and the converse, a body without a soul, have been staple themes of horror films and the

*late-night stories children scare each other with around the campfire. A soul without a body is a ghost; a body without a soul is a zombie.*²⁴

According to folklore across different people groups, ghosts are disembodied souls that hover restlessly between the world as we know it and an alternate, invisible world. They are neither here nor there, but stuck in an inescapable in-between, liminal space. Herzfeld sees transhumanist ambitions such as

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If ghosts are minds without a body, then zombies are bodies that lack mind and consciousness, and thus cannot experience the world. Ghosts or zombies, the future of mind uploading is, well, creepy.

mind uploading as the attempt to separate mind and body with the use of technology, an enterprise which, if successful (although we have noted several technical difficulties) risk producing “a ghostlike existence, turning us, or our successors, into bodyless spirits.”²⁵ In this ghostlike existence, while uploaded minds might be capable of intellectual operations, they would “lose human consciousness and qualia – the ability to feel – thus becoming more zombies than

ghosts”.²⁶ If ghosts are minds without a body, then zombies are bodies that lack mind and consciousness, and thus cannot experience the world. Ghosts or zombies, the future of mind uploading is, well, creepy.

What’s in a body?

At this point it is worth noting that on certain transhumanist readings, a disembodied mind or emulation can be technologically re-incarnated in some sort of body. For example, Kurzweil posits that “a reinstantiated mind will

need a body, since so much of our thinking is directed towards physical needs and desires” and goes on to imagine a “virtual 2.0” body.²⁷ Similarly, Nick Bostrom talks about simulated bodies capable of the sensations and experiences of physical bodies.²⁸ However, in general, transhumanism stems at best from a disappointment with, and at worst from a disdain or even downright contempt for the human body and ordinary human life.

Hans Moravec captures the transhumanist view of the body when he defines the human being as “the *pattern* and the *process* going on in my head and body, not the machinery supporting that process. If the process is preserved, I am preserved. The rest is mere jelly.”²⁹ Or take this even starker, visceral view of the body summarised by Mark Dery:

*It's the body's job to be a symbol of detestable putridity in the eyes of an information society characterized by an exaltation of mind and a contempt for matter, most of all the body - that aging, earth-bound relic of Darwinian evolution that Net junkies refer to as meat.*³⁰

At one level, this is nothing new. From spears and wheels to personal computers and AI systems, technology has always been driven by the desire to transcend the limitations and fragility of the human body. All of us benefit from technologies which protect, restore, and enhance the capabilities of our bodies. But how far should we go pushing against our limitations?



All of us benefit from technologies which protect, restore, and enhance the capabilities of our bodies. But how far should we go pushing against our limitations? Transhumanist proponents of mind uploading present a simple answer: all the way!



JELLY BODIES, *Emily Ikoshi with DALL-E*

“However, in general, transhumanism stems at best from a disappointment with, and at worst from a disdain or even downright contempt for the human body and ordinary human life.”

Transhumanist proponents of mind uploading present a simple answer: all the way!

Those of us who intuit that our limitations and vulnerabilities are ‘features not bugs’ of what it means to be embodied creatures will recoil at the idea, sensing our very existence to be threatened. But there is something undeniably comforting in the idea of transcending the limitations of our bodies – particularly as they age, deteriorate, and eventually die.

To say the least, our culture has a conflicted relationship to bodies, where a disposition of care and concern clashes discordantly with an (often unconscious) disposition of disdain and even contempt for the body.

Here, think of the many diets and dieting fads, the fitness movement and industry, the body positivity and inclusivity movement, the popularity of mindfulness and yoga, which are reminding Westerners that they have bodies in the first place; gadgets like Fitbit or Apple Watches in so-called ‘health tech’; as well as the rise of personalised medicine. When thinking about the culture of disdain and contempt for the body, one can point to the lower cultural and economic value placed on manual labour and caring professions, that necessarily involve physical presence, over ‘knowledge work’. There are also unrealistic and flattening standards of physical beauty, reinforced by the film, advertising, and fashion industries, and amplified by social media, with troubling consequences for our

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mental health, especially the health of teenage girls, although no one is immune. One could also mention the more subtle trend towards relentless virtualisation of experience, which threatens to alienate us from our physical selves and condition us to live increasingly disembodied lives, slouching to binge on Netflix or game for multiple days and nights in a row, texting instead of meeting in person; and who knows what will happen if and when the metaverse goes mainstream.

Christian thought offers an important response to this culture. At its heart is a profound theology that calls for cherishing the human body as an integral part of being human – a perspective that, while not in itself uniquely Christian, is necessary given the features of our cultural moment.



In a culture that promotes idealised images of human bodies, the notion that God has a scarred human body brings with it not only an affirmation of all bodies, able or disabled, but also the reassurance that God is, in fact, and in a real sense, one of us.

To this end, an appeal to an ancient text like Genesis may sound antiquarian to some. However, rightly understood, the first chapters of Genesis do not offer primitive science, but a richly poetic theological interpretation of the nature and purpose of creation, including human beings. With this hermeneutic in hand, it is worth noting that in the Genesis account, the human person is the only part of creation for which God stoops; the Creator God gets down on his knees, so to speak, to mould the human body “from the dust of the ground”

like a potter who lovingly moulds clay. There is no other part of creation, and indeed no other comparable Ancient Near Eastern creation text where divinity is so tenderly involved in

the creation of humanity.³¹ Later in the Hebrew Bible, Psalm 139 conveys in poetic language something of the mystery of this process:

*You created my inmost being; you knit me together in my mother's womb. I praise you because I am fearfully and wonderfully made; your works are wonderful, I know that full well. My frame was not hidden from you when I was made in the secret place, when I was woven together in the depths of the earth.*³²

One of the key teachings of the Jewish and Christian faiths is that God is the creator of the human body, with all of the splendour and shame it carries. Indeed, Christians believe that God so loved humanity that he assumed a human body. This is the literal meaning of the Incarnation. God “became flesh”, lived among us as an embodied human being, experiencing our joys and enduring our sorrows and wounds, so that through his life, death, and resurrection, we might be healed. At the end of his time on earth, Jesus ascended to heaven with a scarred human body, bearing the marks of his torture and death. In a culture that promotes idealised images of human bodies, the notion that God has a scarred human body brings with it not only an affirmation of all bodies, able or disabled, but also the reassurance that God is, in fact, and in a real sense, one of us.

The body is a precious and wonderful thing. It is not a ‘meat sack’ or embarrassing ‘wet ware’, as some transhumanists suggest. The body is the sacred, tangible – literally, touchable – presence of a person. Our bodies are not mere containers but an essential aspect of our being. Or, as Abigail Favale puts it, “bodies are persons made manifest.”³³

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**The body is the sacred,
tangible – literally,
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EMBODIED, *Emily Ikoshi with DALL-E*

“The body is the sacred, tangible – literally, touchable – presence of a person. Our bodies are not mere containers but an essential aspect of our being.”

Moreover, the body connects us inextricably to one another and the rest of nature. We move around in the world, experience pleasure and express love and care through our bodies.

Advances in neuroscience are also showing us the inextricable link between our minds and our bodies. Embodied cognition, a multidisciplinary field of study, spanning neuroimaging, philosophy of mind, experimental psychology and AI/robotics, is challenging traditional views of how we perceive and know, showing that the mind is deeply influenced by the body and its interactions with the environment. It recognizes that cognition is “deeply dependent upon features of the physical body of an agent,” and that “aspects of the agent’s body beyond the brain play a significant causal or physically constitutive role in cognitive processing.”³⁴

George Lakoff and Mark Johnson’s study into the neuroscience of metaphors bears this out. In their classic volume *Metaphors We Live By*, and even more comprehensively in *Philosophy in the Flesh*, Lakoff and Johnson draw on multiple research strands and disciplines to show that metaphors, in the way we deploy them, point clearly to our embodiment and situatedness

in the material world. They note: “Many primary metaphors are universal because everybody has basically the same kinds of bodies and brains and lives in basically the same kinds of environments.”³⁵ For example, we say we “extend a warm welcome” to guests, trading on the shared understanding that the act of welcoming may be viscerally felt as a warmth in one’s body.



Metaphors point clearly to our embodiment and situatedness in the material world.

In the same vein, psychiatrist and philosopher Ian McGilchrist writes that embodied metaphors are “the only way in which understanding can reach outside the system of signs to life itself”, and goes on to say that “everything has to be expressed in terms of something else, and those something else eventually have to come back to the body.”³⁶ In stating this, McGilchrist is arguing that abstract thought and semantic description alone cannot fully encapsulate direct lived experience. Embodied metaphors, which encode physical experiences, are needed for true understanding of life to take place.



The trend towards escaping the body, with its natural fragility and limitations through technological means is inherently dehumanising. An attack on the body is an attack on the embodied human person.

The field of phenomenology further strengthens the case that we know not merely through our brains, but through our bodies’ pre-conscious perceptions – what French philosopher Maurice Merleau-Ponty calls “preconscious knowledge”.³⁷ Summarising the contribution of embodied cognition, ethicist Victoria Lorrimar writes that “the growing field of embodied cognition recognizes the hybridity of human being and its implications for cognition, exploring the centrality of the body for human thought.”³⁸

If this is all true, then the trend towards escaping the body, with its natural fragility and limitations through technological means is inherently dehumanising. An attack on the body is an attack on the embodied human person. To diminish the body is to diminish ordinary human life.

At this point it is worth noting how transhumanist visions operate with an implicit dualistic anthropology – a belief in the existence of a soul, of ‘something more’ and beyond the sum of the parts that make up a human body – an essence, a personality, one’s soul that supposedly can be extracted and uploaded to cyberspace/the cloud. Christianity has historically affirmed the existence of the soul as either a substance (following Aristotle’s metaphysics, where the soul is the form of the body), a dimension or an ineffable ‘more-ness’ of the human person, that is distinct from, although based in one’s embodiment. A computational conception of the soul that remains consistent with mainstream Christian teaching and, perhaps surprisingly, with Kurzweil’s notion of self-identity quoted above, is put forward by the late Cambridge physicist and theologian John Polkinghorne. He writes: “I think that we must understand the soul as being the almost infinitely complex, dynamic, information-bearing pattern in which the matter of our bodies at any one time is organized.”³⁹

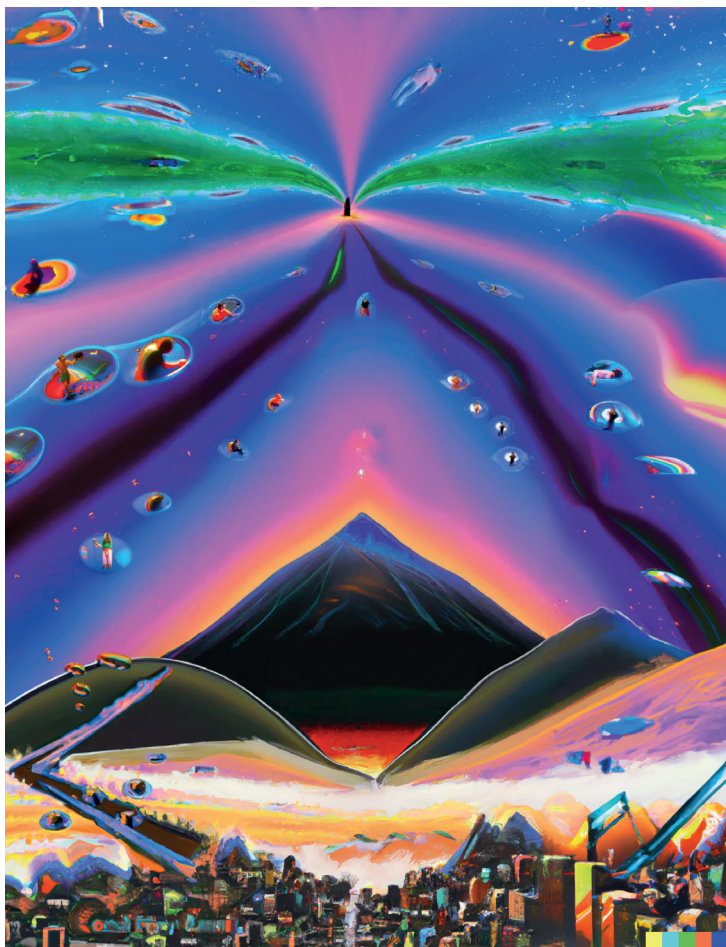
If C.S. Lewis suggested an analogy between the soul and the cascade effect of the waterfall, another way we might picture the soul is as the contour or silhouette of a camp fire. The image assumes a conscious subject capable of receiving, processing and memorising sensorial data about the fire and the ever-shifting shapes of its flames.

Is technological resurrection possible?

A particularly fruitful way to view mind uploading and whole brain emulations is through the prism of Christian eschatology (the doctrines about the fate and

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Mind uploading is a speculative, post-secular vision of technologically mediated ‘resurrection’.



TECHNOLOGICAL RESURRECTION, *Emily Ikoshi with DALL-E*

“On this reading, mind uploading is a speculative, post-secular vision of technologically mediated ‘resurrection’.”

ultimate ends of humanity and the cosmos as a whole). On this reading, mind uploading is a speculative, post-secular vision of technologically mediated ‘resurrection’.

First of all, it is worth noting some similarities between Christianity and transhumanism. Christianity and transhumanism are united in their hope of liberation from the constraints of a body that is currently, in St Paul’s language, in “bondage to decay”, “subject to death” (Rom. 8:10), and bound up with a creation that has been “subjected to frustration”, “groaning as in the pains of childbirth” (Rom. 8:21-22). In connection to this, theologian Brent Waters writes:

Transhumanists and Christians agree [...] that the finite and mortal human condition is far from ideal. For transhumanists humans have fallen short of achieving their true potential, whereas for Christians humans have not yet become the kinds of creatures God intends them to be. In response both agree that humans require release from their current condition.⁴⁰

Both transhumanism and Christianity look forward to some kind of resurrection from the broken present reality. But they differ starkly in the way they conceive of the means of release, the nature of death, and the afterlife.

First, transhumanism looks to technology as a form of secular saviour that would remove the vulnerabilities and vicissitudes of embodied life altogether. In contrast, Christianity affirms the goodness of embodied life alongside

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its challenges and pains, and looks to the Creator God to release creation from the grip of decay and death. In the Christian view, the body is redeemable and – in God’s eyes, no less – worth redeeming. As Waters goes on to say:

Through the Incarnation, God vindicates and redeems the creation from its futility, thereby conquering death as witnessed by the resurrection of Jesus Christ from the dead. It is the empty tomb that most starkly differentiates Christian eschatology from its posthuman counterpart.⁴¹

And while transhumanism understands death as a purely physical reality, Christians believe that death is primarily a spiritual and relational reality of alienation from God due to Sin.



The transhuman body is a human project to be completed, whereas Christians looks forward to receiving, as a gift, an imperishable, resurrected, spiritual body, the preview of which is the resurrected Jesus, who heralds the fate that awaits the entire cosmos.

Transhumanism, moreover, conceives eternal life in terms of infinite duration. Christianity, in contrast, understands it not simply as a long duration of chronological time but as a qualitatively superior form of existence (‘resurrection life’) and flourishing.⁴²

Transhumanism, as noted above, either has no place for the natural body or seeks to radically alter it through the application of science

and technology. The transhuman body is a human project to be completed, whereas Christians looks forward to receiving, as a gift, an imperishable, resurrected, spiritual body, the preview of which is the resurrected Jesus, who heralds the fate that awaits the entire cosmos.

All resurrections are not, therefore, created equal. And even setting aside both the technical challenges of mind uploading or whole-person emulations, and the confused philosophical beliefs about the relationship between brain and mind, personal identity and its physical correlates, at the heart of the issue is a stunted vision of the human person that is rightly challenged not only by religious but also by scientific anthropologies. In short, technological resurrections of all descriptions are bound to fail because the human is a far more complex creature than materialist and transhumanist anthropologies presuppose (and there is often an overlap between the two).

We have already seen that the human person is far more than a self-contained, self-possessed, atomized entity that can be reduced – without loss – to its brain or, indeed, any other constituent biological parts or systems. Rather, multiple scientific disciplines, including neuroscience, inter-personal neurobiology, and embodied cognition, converge on a vision of the human being as enmeshed and entangled, via the body, with all other living things. Taking this non-atomised view further, human identity cannot therefore even be understood in beyond-physical terms at the level of the individual human being. Rather, evolutionary history reveals “the entanglement between human beings and other creatures that persists in current multispecies relationships.”⁴³

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Technological resurrections of all descriptions are bound to fail because the human is a far more complex creature than materialist and transhumanist anthropologies presuppose.

If indeed we are constitutionally entangled with all living things, to ‘upload’ a person is, by implication, to ‘upload’ the entire cosmos with its unfathomably vast interconnections

and patterns of information and energy. However, there is no conceivable super-computer capable of storing this amount and level of information. And while, in science

the ancient cosmological idea of a Great Chain of Being, with human beings at the top of the pyramid, has been replaced by the concept of a network... transhumanism, in its more extreme form and perhaps ironically, seems to depend on a network for its understanding of computer technologies, but projects the human out into the future in a way that shears human identity from the creaturely network in which it is placed.⁴⁴

The analogy is evidently limited, but what if we understood God as a kind of super-computer – the only mind capable of storing (and running, for that matter) the vast and continual flow of information and shifting energy that we call the world?

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According to the perennial Christian tradition, as the ground and source of all being, God is unfailingly present to, and continually acts in the entire cosmos, at all levels of life, from the infinitesimal level of quanta to the highly complex systems and systems of systems. Only this sort of God, only this sort of super-computer, could ‘upload’ a whole person and the totality of relationships which constitute it (the whole cosmos, effectively). But is this not a restatement, in a techno-analogical key, of orthodox Christian eschatology? Indeed it is.

- 1 See, for example: OpenAI's chief scientist thinks humans could one day merge with machines | MIT Technology Review; Y Combinator President Sam Altman Said the Future of Humanity Is a 'Merge' With Technology (businessinsider.com); Elon Musk wants us to all become cyborgs, or risk total eradication | WIRED UK; Vitalik Buterin, My techno-optimism (eth.limo)
- 2 For an overview of transhumanism, see *The Transhumanist Reader: Classical and Contemporary Essays on the Science, Technology, and Philosophy of the Human Future* eds. Max More, Natasha Vita-More (Wiley-Blackwell, 2013).
- 3 Celia Deane-Drummond points the finger to Augustine who also elevated the mind over the body and whose influence on the intellectual conditions favourable to transhumanist thought should not be overlooked. See Celia Deane-Drummond, "Taking Leave of the Animal? The Theological and Ethical Implications of Transhuman Projects" in *Transhumanism and Transcendence* ed. Ronald Cole-Turner (Georgetown University Press, 2011), 121.
- 4 See Jeffrey C. Pugh, 'The Disappearing Human: Gnostic Dreams in a Transhumanist World,' *Religions*, 8.5 (2017).
- 5 David F. Noble, *The Religion of Technology: The Divinity of Man and the Spirit of Invention* (Alfred A. Knopf, 1997), 158.
- 6 Ibid., 155.
- 7 Ibid., 158.
- 8 Futurist Ray Kurzweil Says He Can Bring His Dead Father Back to Life Through a Computer Avatar - ABC News (go.com)
- 9 Noreen Herzfeld, *The Artifice of Intelligence: Divine and Human Relationships in a Robotic Age* (Fortress Press, 2023), 35.
- 10 Will We Ever Be Able to Upload a Mind to a New Body? (gizmodo.com). See also Christof Koch, *The Feeling of Life Itself* (The MIT Press, 2019).
- 11 See, for example, Enteric nervous system: sensory transduction, neural circuits and gastrointestinal motility | Nature Reviews Gastroenterology & Hepatology; McCorry L. K. (2007). Physiology of the autonomic nervous system - PubMed (nih.gov), American Journal of Pharmaceutical Education, 71(4), 78; Furness, J. B., Callaghan, B. P., Rivera, L. R., & Cho, H.-J. (2014). The enteric nervous system and gastrointestinal innervation: integrated local and central control. *Advances in experimental medicine and biology*, 817, 39–71. https://doi.org/10.1007/978-1-4939-0897-4_3
- 12 Ibid, 36.
- 13 I'm grateful to Michael Burdett for this insight.
- 14 Francis Crick, as quoted by Noreen Herzfeld, 'Cybernetic Immortality versus Christian Resurrection' in *Resurrection: Theological and Scientific Assessments* eds. Ted Peters, Robert John Russell, Michael Welker, (Eerdmans, 2002), 192.
- 15 See, for example, Daniel J. Siegel, *Pocket Guide to Interpersonal Neurobiology: An Integrative Handbook of the Mind*, part of Norton Series of Interpersonal Neurobiology (W. W. Norton & Co,

- 2012) and Daniel J. Siegel, *The Developing Mind: How Relationships and the Brain Interact to Shape Who We Are*, 3rd edition (Guilford Press, 2020).
- 16 Uri Hasson, Asif A. Ghazanfar, Bruno Galantucci, Simon Garrod, Christian Keysers, 'Brain-to-brain coupling: a mechanism for creating and sharing a social world', *Trends in Cognitive Sciences*, Vol. 16, Issue 2, 2012. Brain-to-brain coupling: a mechanism for creating and sharing a social world - ScienceDirect, 114-121.
- 17 Siegel, D.J. (2001), 'Toward an Interpersonal Neurobiology of the Developing Mind: Attachment Relationships, "Mindsight," and Neural Integration'. *Infant Mental Health Journal*, Vol. 22, 67-94. [https://doi.org/10.1002/1097-0355\(200101/04\)22:1<67::AID-IMHJ3>3.0.CO;2-G](https://doi.org/10.1002/1097-0355(200101/04)22:1<67::AID-IMHJ3>3.0.CO;2-G)
- 18 See Bessel van der Kolk *The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma* (Penguin, 2015).
- 19 See, for example, Urie Bronfenbrenner, *The ecology of human development: Experiments by nature and design* (Harvard University Press, 1979) or ed. Urie Bronfenbrenner, *Making human beings human: Bioecological perspectives on human development* (Sage, 2005).
- 20 Herzfeld, *The Artifice of Intelligence*, 34.
- 21 C.S. Lewis, *Miracles: A Preliminary Study* (New York: HarperOne, 2001), 25.
- 22 As quoted in Herzfeld, 37.
- 23 Michio Kaku, *The Future of the Mind*, 276, as quoted in Herzfeld, 37.
- 24 Herzfeld, 32.
- 25 Ibid. 33.
- 26 Ibid. 38.
- 27 Ray Kurzweil, *The Singularity Is Near: When Humans Transcend Biology* (Penguin Books, 2005), 199.
- 28 Nick Bostrom, "The Transhumanist FAQ: A General Introduction (Version 2.1)." World Transhumanist Association. <http://www.nickbostrom.com/views/transhumanist.pdf>
- 29 Moravec quoted in Victoria Lorrimar, "Mind Uploading and Embodied Cognition: A Theological Response", *Zygon*, vol, 54m no. 1 (March 2019), 193.
- 30 Mark Dery quoted in Lorrimar, *ibid*.
- 31 See John Walton, *The Lost World of Genesis* (IVP, 2009).
- 32 Psalm 139.13-15.
- 33 Abigail Favale, *The Genesis of Gender: A Christian Theory* (Ignatius Press, 2022), 64.
- 34 Wilson and Foglia as quoted by Lorrimar, "Mind Uploading and Embodied Cognition: A Theological Response", 196.
- 35 George Lakoff and Mark Johnson, *Metaphors We Live By* (University of Chicago Press, 1980), 257. See also, George Lakoff and Mark Johnson, *Philosophy in the Flesh: The Embodied Mind and Its Challenges to Western Thought* (Perseus Books, 1999).

- 36 Ian McGilchrist, *The Master and His Emissary* (Yale University Press, 2009), 115-6.
- 37 Merleau-Ponty quoted in Victoria Lorrimar, “Mind Uploading and Embodied Cognition: A Theological Response”, 195.
- 38 Ibid., 195-6.
- 39 John Polkinghorne, ‘Eschatological Credibility: Emergent and Teleological Processes’ in *Resurrection: Theological and Scientific Assessments* eds. Ted Peters, Robert John Russell, Michael Welker (Eerdmans, 2002), 51.
- 40 Brent Waters, ‘Whose Salvation? Which Eschatology? Transhumanism and Christianity as Contending Salvific Religions’ in *Transhumanism and Transcendence: Christian Hope in an Age of Technological Enhancement* ed. Ronald Cole-Turner (Georgetown University Press, 2011), 164.
- 41 Ibid., 171-2.
- 42 For a detailed exploration of transhumanist and Christian eschatology, see Michael Burdett, *Eschatology and the Technological Future* (Routledge, 2014).
- 43 Celia-Deane Drummond, “Remaking Human Nature: Transhumanism, Theology, and Creatureliness in Bioethical Controversies” in *Religion and Transhumanism: The Unknown Future of Human Enhancement* eds. Calvin Mercer and Tracy J. Trothen, (ABC-CLIO, 2015), 250.
- 44 Ibid., 251.



Grief tech and mind uploading: what's at stake?

In the final section of this report we offer a more detailed ethical appraisal of grief tech and mind uploading. But first, it's worth noting a connection between the two. Immediately it becomes clear that mind uploading can be seen as the answer to the problem of imperfect simulations under the constraints of current technology. If presently one might interact with a chatbot or avatar based on data of, say, one's deceased brother, the future envisioned by transhumanists would supposedly enable interaction with the uploaded version of said brother. In this way we might say that mind uploading is the envisioned main event to which current grief tech is the preview.

As we have done in this report, philosophers and theologians can wax philosophical about the ontology (that is, the being or nature) of the simulations that are likely to be part of the furniture of our lives. There is value in this. Clarifying the differences between real persons and simulations is vital to protect human agency and dignity and to steer people away from digital experiences that manipulate, deceive and exploit them, especially in times of emotional vulnerability following the death of a loved one.

But in a world of 'artificial everything,' the risk is that persuasion wins. We are constitutionally predisposed to see persons everywhere – in dolls, in clouds, in pets and, indeed, in robots. We cannot resist

“

Clarifying the differences between real persons and simulations is vital to protect human agency and dignity and to steer people away from digital experiences that manipulate, deceive and exploit them, especially in times of emotional vulnerability following the death of a loved one.



ANTHROPOMORPHISM, *Emily Ikoshi with DALL-E*

“We are constitutionally predisposed to see persons everywhere – in dolls, in clouds, in pets and, indeed, in robots.”

anthropomorphising. How much stronger will this temptation be when grief takes hold and we grasp for the consoling continuities of the presence of our loved ones?

We might currently recoil at the idea of creating an avatar or digital double of ourselves. Indeed, our own polling data confirms this: in *Love, Grief, and Hope*, Theos's 2023 study of emotional responses to death and dying in the UK, 67% of people polled disagreed with the statement "I would like to create a digital version of myself that could live on after I die". However, if we were to be presented with a hyper-realistic simulation of a loved one, would we not perhaps settle for it? Would it not perhaps be 'alive enough', especially as the 'creep factor' begins to disappear, technology improves, and cultural norms shift to make it more culturally permissible?¹ Again, our polling data suggests a degree of openness on this matter. While the majority (62%) disagreed with the statement "It would comfort me if I could interact with a digital version of a loved one that died", 14% agreed, 13% answered "I don't know" and 11% said they neither agreed nor disagreed. Adding these percentages up, it is fair to suggest that 38% of people are either open to or could be persuaded to interact with avatars of the dead. This openness is highest among 18-24 year olds.

Give me a sufficiently convincing digital rendition of my father that plausibly looks and talks like him, and that I can turn to for counsel at a critical time, and I may not care that it is not my real, flesh-and-blood father. We can hold out sound criteria for what makes relationships authentic, but in the

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38% of people are either open to or could be persuaded to interact with avatars of the dead. This openness is highest among 18-24 year olds.

end we may settle for less-than-ideal ones. Experience may win over qualms about ontology. The reasons for this run deep into our very nature, as creatures made for love, who persist in believing that death cannot be the end either of our loved ones or our most precious relationships.²

In the end, we need a differentiated ethical assessment of the spectrum of ‘virtual immortality’ offerings. The jury is still out, but digital memorialisation products and services that use data collected ethically, based on informed consent, and with user experiences designed to prevent manipulation and deception, could be seen as legitimate ways of leveraging

technology to process loss and grief, in continuity with older memorial practices.



Because a simulation, however convincing it may seem, will always be a fraction of the embodied reality of another human being.

The greater danger lies with bots and avatars that lack such safeguards. Such simulations of persons should be seen as intrinsically manipulative, prolonging and adversely affecting the grieving process. These run the risk of trapping people in

relationships that will produce emotional damage and stunt growth in the long run. Because a simulation, however convincing it may seem, will always be a fraction of the embodied reality of another human being. As Martha says to the robot version of her partner in the *Black Mirror* episode “Be Right Back”: “You’re just a few ripples of you. There’s no history to you. You’re just a performance of stuff that he performed without thinking. And it’s not enough.”

In the absence of a body and soul, simulations of persons, however seamless and realistic, are constitutionally incapable of love. For those who might engage with them, they are a form of a promise of love that they cannot, by their very nature, keep. One can show up for a simulation, but a simulation cannot show up for you. For to love someone, and not merely romantically, is to show up for them, physically, through acts of care, generosity, even sacrifice.

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To love someone, and not merely romantically, is to show up for them, physically, through acts of care, generosity, even sacrifice.

- 1 Sherry Turkle, *Alone Together: Why Expect More from Technology and Less from Each Other* (Basic Books, 2011), 18.
- 2 Andy Crouch, *The Life We're Looking For: Reclaiming Relationship in a Technological World* (Convergent Books, 2022), 30.

A large, light gray, stylized number '6' is positioned on the left side of the slide, partially overlapping the title. A thin white horizontal line extends from the right edge of the '6' across the slide.

Conclusion



ETERNITY IN THE HUMAN HEART, *Emily Ikoshi with DALL-E*

“Seen in this light, transhumanism might even be understood as an outworking of what the author of the Book of Ecclesiastes calls “eternity in the human heart” set by God. These are basic human intuitions and longings, implanted by the Creator, that there is more to human existence than the vagaries of organic life and the struggle of life in a fragile, vulnerable body; that death is not a dead end, but a passageway to a higher mode of existence.”

This report has considered some of the ethical issues and implications arising at the intersection of artificial intelligence with our 21st-century navigation of death and dying. It has covered a range of potential risks to the use of technology in this field. Some are pragmatic and legal, but others – perhaps the foundational ones – hint at the most time-honoured questions of human existence: who am I? What makes me who I am? What am I afraid of? Who can help?



Whatever else it is, transhumanism is also an arena of late modern, post-secular culture where the shadow of Christianity lingers hauntingly, and where Christian beliefs about the human person, the body, death, resurrection, and the afterlife, are reflected and refracted through a technological prism in fascinating ways worth unravelling.

Consequently, the report has moved from a consideration of currently available technological products to the greatest ambitions of transhumanist technologists. There is far more to say about transhumanism than can be covered in one short essay. But one thing that could be said is that, whatever else it is, it is also an arena of late modern, post-secular culture where the shadow of Christianity lingers hauntingly, and where Christian beliefs about the human person, the body, death, resurrection, and the afterlife, are reflected and refracted through a technological prism in fascinating ways worth unravelling.

Indeed, transhumanism as a whole delivers yet another blow to the standard secularisation thesis, according to which societies become more secular and godless the more they develop scientifically and technologically.

Much of transhumanist ideology rests on religious impulses and motivations, even if those are not acknowledged or directly rejected by transhumanists themselves.¹ Seen in this light, transhumanism might even be understood as an outworking of what the author of the Book of Ecclesiastes calls “eternity in the human heart” set by God. These are basic human intuitions and longings, implanted by the Creator, that there is more to human existence than the vagaries of organic life and the struggle of life in a fragile, vulnerable body; that death is not a dead end, but a passageway to a higher mode of existence.

After all, when we talk about mind uploading, we tend to imagine it crudely, as a discrete technological procedure performed in a laboratory setting by specialists using cutting edge technologies – and this has indeed been the predominant focus of this piece. But there is another possibility. Might we instead see the progression from cave paintings, tablets, parchments, to the explosion of literary culture following the invention of the printing press, and most recently the internet, as a series of inflection points in the long history of human beings ‘uploading’ and extending their minds, reaching for the afterlife? In our current moment, we interpret this fundamental urge in the context of ongoing developments in computer technology, the arrival of the internet, the expansion of cloud computing, and the push towards so-called

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Might we instead see the progression from cave paintings, tablets, parchments, to the explosion of literary culture following the invention of the printing press, and most recently the internet, as a series of inflection points in the long history of human beings ‘uploading’ and extending their minds, reaching for the afterlife?

ambient or ubiquitous computing. Indeed, perhaps we can speak of our minds being already ‘uploaded’ to a certain extent in cyberspace, transposed in an inorganic, silicon-based substratum – the internet and the physical infrastructure on which it runs.

Yet these latest developments towards virtual immortality – even mind uploading itself – might instead be understood against the backdrop of a much wider horizon, not as humanity’s most hubristic imagined future, but as a constant of the human condition; not as a one-off event, but as a continuum. And while the project of transhuman mind uploading, especially in its cruder versions, is evidently hubristic and individualistic in its focus – individuals seeking self-transcendence – it should not be dismissed out of hand. Rather, we should see it as our post-secular culture’s continued wrestling with God and the call of “eternity in the human heart”.

- 1 Michael Burdett and Victoria Lorrimar, “Human Technological Enhancement and Transhumanism” in the *Oxford Handbook of Theological Anthropology* (Oxford University Press, forthcoming).



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AI and the Afterlife

Would you create a digital version of yourself that could live on after you die? What about an interactive avatar of a loved one? And would you upload your mind to a super-computer, if this were possible?

Starting from these questions, *AI and the Afterlife* explores the intersection of AI with death and grief, an area known as “virtual immortality”. Spanning the feasible and the fanciful, the report engages, in part one, with the ethics of digital memorialisation, ‘griefbots’ and interactive avatars of the deceased. Part two explores the notion of mind uploading as an example and critique of transhumanism. The report seeks to show what these technological offerings and ambitions reveal about our culture’s beliefs about what it means to be human, death, the afterlife, and what (if anything) could be ‘immortalised’ with the right technology.



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