

the OPEN ENCYCLOPEDIA of ANTHROPOLOGY



Transhumanism

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The social and intellectual movement known as transhumanism questions the figure of the 'human' at the centre of humanism and modern political formations. As part of a broader 'posthuman turn' it is frequently associated with technological enhancements that redefine human bodies and their limits. However, the core argument of transhumanism has to do with the human mind or consciousness. Transhumanists suggest that the human mind is reducible not only to its biochemical substrate but also to something more fundamental called information that characterises all existence in the universe. Since silicon-based computation is the basis of informatic processes today, transhumanists argue that machine intelligence can become conscious, eventually making fleshy humans obsolete. This process of technological advancement towards a super-intelligent computational civilisation is regarded as part of a larger unfolding of intelligence in the universe, a universal telos of existence of which humans are only one instance. Thus, human intelligence is set to yield to a nonhuman destiny. This entry traces the formation of transhumanism, reviews some of the anthropological studies, and concludes by questioning transhumanism's narrow social and metaphysical visions of post-humanity in which both intelligence and biology end up being delimited around particular (civilisational, racialised) forms of life and thought.

Introduction

Transhumanism is a recent set of common ideals, or ideology, with the stated aim of transcending the current physical and mental limitations of the human by technological means. It has primarily taken shape as an American secular scientific project, albeit with growing international reach. Proponents of transhumanism explicitly state that the current form of our species is not its final one, and that a technologically enhanced computational form—transcending the human—will emerge through what they see as the inevitable and exponential acceleration of technoscience, especially in the areas of nanotechnology, biotechnology, and the informatic and cognitive sciences (NBIC).

Because of its unwavering espousal of these technologies as the only and ideal route to transcending human limits, transhumanism has grown in reach, appeal, and power alongside the twenty-first century rise of Silicon Valley and the digital tech and biotech sectors more generally. Many of the tech sector's power players at companies such as Google, Paypal, and Space X are associated with transhumanism. What's more, ideas that have circulated amongst transhumanists have entered a broader social milieu: for instance, as anthropologist and media scholar Tamara Kneese (forthcoming) has documented, digital and cybernetic immortality (the maintenance of avatars, profiles, and conversations after death) are now part of the discourse and concerns of many tech companies and start-ups.

Transhumanism is part of a broader 'posthuman turn', a series of ideas and social and technological developments that have put under question the figure of the 'human' at the centre of humanism and modern political formations. Scholars trace humanism's roots to currents in Greek and Roman thought, and later to the European Renaissance where writers and thinkers began to focus their concerns on human affairs, human thought, and the human condition, rather than on theological (pertaining to a transcendent God) or parochial (pertaining only to their own group delimited by religion, ethnicity, or geography) concerns. But as a specific intellectual tradition and social ideology bearing the name, humanism took form starting in the early nineteenth century. The central tenets held that humans, unlike other parts of nature, are endowed with reason and the capacity for thought and self-awareness; that humans are undetermined and free to make their own laws, and shape their own environment with tools and imagination; and that there is no pre-determined future, fixed destiny, or a transcendent and otherworldly destination, meaning that humans were entirely responsible for making their own history and hence their own future in this earthly world (Janicaud 2005; Sartre [1946] 2007 Chakrabarty 1997; Taylor 2005). This set of claims outlined at once the nature of humanity as a whole and built an idea of humans in contrast to other beings to which the same attributes did not apply and hence the same set of political and legal rights did not extend.

Critics of humanism have pointed out that the supposedly universal figure of the human was at the same time an exclusionary device, erasing or even explicitly justifying the on-going exploitations of non-European people through slavery and colonialism. Along with colonial expansion, the rise of scientific thought, and the gradual advance of secularism, a supposedly universal humanism was marshalled to exclude a vast range of non-European peoples from full participation in modern politics and power. Thus, for example, women were barred from political participation because they were said to not be as fully endowed with reason as men. People of African descent, as well as Indigenous, Aboriginal, and tribal people, were not included in the Euro-American image of humanity (Wynter 2003) and were rendered morally and legally subject to enslavement, extermination, and exploitation.

In another vein, there has been a critique of humanism as a form of unwarranted and destructive exceptionalism. That is, by imagining human thought and action as categorically different from the way the rest of the universe operates (the universe being biologically or physically determined, without thought or self-awareness), humanism rendered the human an exception to nature, with tragic consequences. For example, this exceptionalism has led to the over-exploitation of nature and the hubristic use of technology to harness unlimited but destructive power beyond the control of humans such as with nuclear bombs or the use of fossil fuels, causing climate change.

These critiques gave rise to a range of posthumanist positions, such as new materialism (Coole and Frost 2010), vitalist materialism (Braidotti 2013), multispecies ethnographies (Helmreich and Kirksey 2010), new animism (Harvey 2006) and animacies (Chen 2012), cyborg studies (Downey and Dumit 2006) and critical

posthumanism (Roden 2015). These attempt to dissolve the figure of the exceptional human into a broader context wherein the human is neither master of its environment nor maker of its own future; rather, the human appears as part of (indeed, as an effect of) a wide array of forces, agents, and relations over which it cannot have proper and predictable control.

On one level, transhumanism has emerged as one of the many symptoms of the exhaustion of humanism, breaking down and transcending ideas of human exceptionalism in the way that other posthumanisms purport to, for example by merging humans with the technology that they have created. Some analysts, however, describe transhumanism as simply humanism on steroids (Wolfe 2010, Fuller and Lipinska 2015); that is, as a set of goals and practices that merely extend Enlightenment notions of a human essence set apart from the world by language, reason, culture, emotions, and so on (Pickering 2011).

Transhumanist arguments and narratives themselves often claim both: on the one hand, they claim humanism and the Enlightenment as their true heritage (Bostrom 2005, Hughes 2012) and argue that humans have always used tools and have co-evolved with their technologies, so that contemporary versions such as cyborgs or other human-machine hybrids are not new but only a more complex and more intelligent aspect of this history (Bostrom 2014); on the other, they project a radical break from humanity and human history, such that superior forms of machine intelligence will take over and be an independent force in the universe, transcending the human condition, including the evolutionary inheritance of a biological body, and making humans obsolete (Kurzweil 2005; Bostrom 2014). What's more, this process of technological advancement towards a superintelligent computational civilisation, started off by human projects of mind uploading, is regarded as part of a universal *telos* (or ultimate purpose) of existence beyond the human, where the emergence of humans is only an instance of a larger unfolding of intelligence in the universe. Thus, human intelligence, which results in control over and the modification of nature via science and technology, becomes part of a nonhuman destiny. In these instances, transhumanism breaks with its humanist roots.

If transhumanism's speculative ideology of posthuman intelligence and destiny is often disregarded by anthropologists and other social theorists, it may be due in part to the focus on more immediate social concerns regarding the body, technological enhancement, and genetic manipulation. It also may be due in part to the fact that transhumanism's projection of nonhuman intelligence and destiny in the universe are difficult to place within a recognisable political philosophy or genealogy. This division between the enhancement projects of transhumanism, which may well fit the limits of a secular humanism, and the speculative focus on mind, consciousness, and eventually superintelligence, is sometimes characterised as carbon-based versus silicon-based transhumanism (Sorgner 2021). Regardless, given the centrality of the figure of the human (*anthropos*) for anthropology, these debates coincide with long-standing core concerns in the discipline on the nature of human nature. Ironically, transhumanism's position that there is nothing either fixed or sacred about human nature overlaps with a strong trend in anthropology that challenges

unitary theories of the human (Fuentes et al. 2010).

This entry first traces the formation of transhumanism in relation to relevant histories of humanism. It then highlights people and ideas that speculate on and project futures reflective of transhumanism's specific stripe of posthumanism. It will review some of the anthropological studies of transhumanism and conclude by questioning transhumanism's narrow social and metaphysical visions of posthumanity in which both intelligence and biology end up being delimited around particular (civilisational, racialised) forms of life and thought.

The emergence of transhumanism

The term 'transhumanism' was coined in 1957 by Julian Huxley, an evolutionary biologist with eugenicist visions of a future scientific utopia honed through a strange mid-twentieth century marriage of socialism and evolutionary biology, of social equality and eugenicist reform. By the time he published the now-famous essay titled plainly 'Transhumanism', Huxley had already written on humanism, biology, and evolution, including a seminal text on the modern evolutionary synthesis. He was an atheist and, in his own terms, a 'scientific humanist', serving as the first president of the British Humanist Association (Weindling 2012), and later as first director of UNESCO. Importantly, Huxley begins the essay not with humans but with the cosmos and specifically 'cosmic self-awareness'. That is, he begins by applying evolutionary schemas not just to biology on earth, but to consciousness in the universe: 'As a result of a thousand million years of evolution, the universe is becoming conscious of itself'. The emergence of self-awareness, he continues, 'is being realized in one tiny fragment of the universe - in a few of us human beings'. (2015, 12) The formulation is striking as much for its teleological vision (some latent potential is being realised in the cosmos) as for the odd place it assigns humans in that realisation. For humans appear at once as central actors and incidental vectors: 'man's responsibility and destiny', Huxley writes, is to 'be an agent for the rest of the world in the job of realizing its inherent potentialities as fully as possible'. Humans are appointed to take charge in this new version of evolution, driving the universe towards its self-awareness, yet they are mere vehicles for the fulfilment of a destiny beyond the human. Later, transhumanists would push this logic to its end in imagining a future yielded by humanity to superior computational forms of intelligence.

It is noteworthy that Huxley, along with a cohort of fellow scientists and eugenicists such as J.B.S. Haldane, was very much engaged in technological prediction, speculating on space travel, reproductive technologies, and mechanical and industrial prowess (Farman 2015), and yet his essay on transhumanism does not mention any of that. Rather, its vision is centred on 'the most ultimate satisfaction' which he describes as the 'depth and wholeness of the inner life' for which we need 'techniques of spiritual development'. In proper pursuit of this dimension,

The human species can, if it wishes, transcend itself—not just sporadically, an individual here in one way, an individual there in another way, but in its entirety, as humanity (2015, 15).

Two main tensions in these passages remain coiled in transhumanism's practical, ideological, and anthropological features. The first is the tension between a humanist (i.e. non-theistic) sense of responsibility for humanity's own future and the fulfilment of a larger non-human potential: a notion of a human destiny beyond the human that characterises the strongest posthumanist vision in transhumanism. The second is the tension between a scientific, materialist notion of consciousness and a non-reductive one, often glossed as spiritual.

The focus on consciousness and an awakening universe would be taken up by later transhumanists, notably Ray Kurzweil and Martine Rothblatt, but the first re-uptake of the term 'transhuman' comes via the 'father of cryonics' (that is, the low temperature freezing and storage of human bodies), Robert Ettinger. A physics teacher, Ettinger began ruminations on death and the power of science in hospital beds after being wounded in World War II, publishing his own science fiction story about freezing and immortality in 1948. He shifted to non-fiction, describing the technical possibility of storing humans in cold freeze. Initially self-published, his first book, *The prospect of immortality* (1965), was eventually distributed by the publishing company Doubleday after the science fiction writer Isaac Asimov gave Ettinger a thumbs up. The idea garnered some attention in the United States at the time, with Ettinger securing an appearance on the Johnny Carson show and the book getting translated into 11 languages. But none of that translated into a large following or a proper movement nor into volunteers who wanted to get frozen.

Cryonics attracted a small, motley crew of dedicated people who wanted to push the limits and utopian possibilities of science in remaking humans and society. With a set of actual practices (storing bodies for the future), and the prospect of defeating death—the hardest of human and humanist limits—cryonics became transhumanism's catchment site (Farman 2020), attracting space enthusiasts, biologists, cryobiologists, physicists, writers, sci-fi enthusiasts, and, crucially, computer scientists. This assemblage, navigating the space between science and science fiction, a space that later came to be known as futurism, became the core of the transhumanist movement, though it did not yet bear that name.

The term 'transhuman' does not appear in *The prospect of immortality*, but the book does set out to explore the key notion of non-human intelligence:

Modes and standards of conduct and intercourse may have to be developed with respect to intelligent creatures other than human. The three outstanding possibilities seem to concern the dolphins, robots, and extraterrestrial life forms. (1965, 152)

The anti-exceptionalist move to shift intelligence away from an exclusively human attribute to one shared by aquatic creatures, aliens, and robots had roots in the emerging post-war theories of cybernetics.

Without distinguishing between the organic and non-organic, cybernetics examined the behaviour of complex systems in terms of feedback loops, wherein all behaviour could be gauged based on input and output signals which would then modify the system. The simplest example was a thermostat which could be thought of as self-aware, on some level, because it would constantly gauge and modify its behaviour based on information it received from the environment. All behaviour and communication, according to cybernetics (Wiener 1954), was based on this kind of loop, whether the system in question be biological or machinic. Here information and feedback loops became merged with behaviour and intelligence, blurring the boundaries that separated humans from other animals, animals from machines, and inanimate matter from animate beings.

Whilst many secular humanists recoiled from the prospect of the computational reductionism of mind and machine, Ettinger, following cybernetics, tapped into the potential offered by this line of thinking, suggesting the continuation of personal identity beyond biological death through some version of non-organic or artificial intelligence (AI) where a human mind/self would be instantiated on non-biological platforms (1965, 129-33). This was, as Ettinger himself acknowledges, an older trope in science fiction, but from early on, cryonics and immortalism moved beyond simple biological survival to imagine and claim such a post-human future.

It is in Ettinger's next book, first published in 1972 and provocatively titled *Man into super man*, that the terms transhuman and transhumanity begin to find a place in the vocabulary of immortality and technological futurism for the first time. Without referencing Julian Huxley (even though he writes several pages on his anti-utopian brother Aldous), Ettinger discusses the achievement of transhumanity as a human goal, with prospects for greater intra-human warmth (110) as well as 'the storage of personalities in electronic data banks' (35), an idea he takes, like many others, from science fiction, where disembodied brains had been present at least since 1929 when Huxley's colleague, another socialist scientist, J.D. Bernal proposed the possibility in his well-known work of speculation *The world, the flesh and the devil*. Like Huxley, Bernal is amongst the figures claimed today by transhumanists as a predecessor.

Attempts to move away from humanism feature in Ettinger's earlier edition of the book, in which he counts 'Eastern Communism and Western humanism' as 'the flakiest forms of the traditional insanity - idealism', and calls them 'principal secular religions' (120). However, it's in the preface for the 1989 edition that he clearly marks a division with humanism: 'What is happening is a discontinuity in history, with mortality and humanity on one side - on the other immortality and transhumanity' (5). This position becomes a call that continues to echo in the transhuman world in many ways: humanity must choose transhumanism or fall behind and possibly keep on dying, for, as Ettinger writes, 'Human stupidity is formidable' (162).

Transhumanism as a term and an ideology gained additional traction through an Iranian-born populariser and author, Fereidoun Esfandiary, known by his transhumanist name FM-2030. Wanting a better world but

disillusioned with cold war politics, nationalism, and the framework of human rights, Esfandiary moved from earthly to cosmic politics with *Upwingers*, a book he published in 1973. His futuristic predictions and plans got him TV appearances and teaching contracts at the New School and then at UCLA where he became another nucleus around which the futurist movement would cluster. In 1989, having formally renamed himself, FM-2030 published *Are you a transhuman?*, a manifesto challenging the status quo and envisioning a utopian world of limitless energy, food, and joy. After his medical death, FM-2030 entered cryopreservation at Alcor on July 8, 2000.

It was in the California of the 1980s that transhumanism began to take shape as a movement, and would later continue its growth. FM-2030's early collaborator in West Coast futurism was Natasha Vita-More, now a leading transhumanist artist and writer married to Max More, a transhumanist philosopher and president and CEO of Alcor, the main cryonics company in the United States. Born Max T. O'Connor in the United Kingdom, More changed his name a year after he moved across the Atlantic to the University of Southern California in 1988 to complete a Ph.D. With Tom Morrow, another man with a signifying name, they launched a journal and an institute called *Extropy*, named to counter the pessimistic destiny promised by entropy. The Extropy Institute, joined by many who had recently gathered around a space exploration group called L-5, became the new hub of West Coast futurism, focusing on enhancement technologies that, in the early 1990s, were beginning to hold up a new set of promises: control over biology, control over the brain, control over the size and speed of computational processes, control over all matter in the universe. Many current futurists and immortalists trace their roots and early sense of transhumanist excitement back to the Extropian gatherings. The dissolution of the Extropy Institute would lead, in 1998, to the formation of the World Transhumanist Association (WTA), the first of its kind, co-founded by philosophers David Pearce and Nick Bostrom, who later set up the Future of Humanity Institute, a transhumanist think tank at Oxford University advocating strongly for technofuturistic solutions to human problems.

With a representative body also came conferences (Transvision) and publications (*Journal of Transhumanism*), declarations, mission statements, as well as internal conflicts. Although transhumanists generally see themselves as iconoclasts eschewing doctrine and imagine technology as an independent force apart from, even transcending, politics, transhumanism was never free of ideology. From the early years, social regulations and religious congregations were feared as threats to technological advancement. With its emphasis on the individual body as well as on individualism as an accompanying ethical stance, transhumanism moved in step with libertarianism. Libertarianism had and continues to have two strands: a left anarchist one and a capitalist, free-market individualist one, the latter where Ayn Rand is a common influence and innovation through the market is assumed to be the only way forward with no regard for historical and structural forms of inequality. Whilst some transhumanists have espoused a more liberal democratic ethic based on a regulated civil libertarianism (Hughes 2004), the dominant Silicon Valley tendency has been marked by strong anti-government individualism and free-market ideology.

Even as the link to the power and capital of Silicon Valley has made the souped-up capitalism of Randian techno-libertarians dominant, transhumanism is not a uniform project. For example, former WTA president and sociologist James Hughes (2004, 2012) has tried to underline the distance between the Silicon Valley billionaires and socially progressive transhumanism. Additionally, there are other variations in transhumanism besides: the transgender transhumanism of inventor Martine Rothblatt (2013); AI guru Ben Goertzel's cosmism (2010); propositions for a Black transhuman liberation theology (Butler 2020); and budding anarchist attempts to reshape the propositions of transhumanism.

If Silicon Valley has influenced transhumanism, so transhumanism has transformed Silicon Valley. As transhumanists gained ground and moved into powerful positions, their propositions for immortality, mind uploading, nanotechnology, space colonisation, and the expansion of consciousness into the cosmos have gained ground in the tech world. Inventor Ray Kurzweil, known for his theory of the singularity, helped set up the Singularity University at NASA and was hired as an adviser by Google. In turn, Google would start its own company to do research into extending lives – the California Life Company (CALICO). Peter Thiel, co-founder of Paypal and an early investor in Facebook, took on the mantle of transhumanism and has funded biotech projects aimed at defeating death, or advancing brain mapping and mind uploading options. Tesla and SpaceX founder Elon Musk has also espoused transhumanism, whilst anti-aging researcher Aubrey de Grey transplanted his research organisation, the SENS Foundation, to Mountain View, California.

Due in part to its espousal of right-wing libertarianism and heroic individualism, its ideological linkages to eugenics, and calls for the maximisation of 'personal autonomy' (Anders 2001, 3) over an analysis of social forces, transhumanism as a movement has remained overwhelmingly white and mostly Anglo-American in membership. Racism, colonialism, imperialism, or class inequality are almost never taken up as issues of importance for thinking about the past or future of humanity, with some key actors promoting far-right ideologies. For example, Thiel has also co-authored a nativist book called *The diversity myth*, reportedly donated \$1 million to the anti-immigrant group NumbersUSA, and backed the Donald Trump presidency.

Although the membership continues to skew male, gender has become an important point of inflection within transhumanist thinking in part because of the presence of inventor, CEO, and writer Martine Rothblatt who has seen gender as the paradigmatic site for jettisoning biological heritage. Rothblatt, who herself transitioned in the 90s and has advocated for transgender rights, has written about *The apartheid of sex* (1995) and the creative freedom and technological power to determine one's own form (2011), what transhumanist philosopher Anders Sandberg has called 'morphological freedom' (2013).

Consciousness, *telos*, and cosmic utopianism

When today's transhumanists trace their history back to the Enlightenment, it is to a particular strain of

science-based utopian humanism that focuses on the human power to determine its own future. This largely eschews the tragic strain of humanism (Eagleton 2009), in which the human condition is thought to be locked into insurmountable contradictions and the inevitability of death. Of course, the very basic notion of progress at the centre of the Enlightenment and modern thought is inseparable from European utopianism and scientific advancement. Science and technological advances, for example, were already part of Francis Bacon's *New Atlantis*, published in 1627, with its vision of a future state in which humans live long and can use technology to satisfy their needs. Transhumanists have been most attracted to the stadial framework of progress and utopia, such as the Marquis de Condorcet's 1792 *Sketch for a historical picture of the progress of the human mind* which presents an atheistic *telos* moving through ten epochs of development to arrive at the 'epoch of the future progress of mankind' when the growth of scientific knowledge would put an end to inequality, and human moral progress would start on its final path. Whereas European thinkers such as Condorcet are mentioned as 'proto-transhumanists' by the WTA (now called 'Humanity+') and by thinkers such as Nick Bostrom and James Hughes, it is important to note that the original European Enlightenment project was to create a better world through the proper rearrangement of social units. Transhumanism, on the other hand, hinges its utopian vision on the rearrangement of molecular, even atomic, units as per nanotechnology, or the 'informatisation' of the universe. In this sense, it fits the neoliberal paradigm where state and society are pushed aside in favour of individual responsibility for health and advancement.

The informatic approach, influenced by cybernetics, was popularised by Ray Kurzweil in *The singularity is near* (2005), a widely-read book on the emergence of an intelligent universe. In this view, the rise of intelligence is the *telos* of the universe, and technology is the means and the index of this evolution. From its origins in flint-knapping to the current digital platforms whose power and speed are rising exponentially, human intelligence has brought the world to the brink of a vast machinic, nonhuman 'intelligence explosion' coming upon us so fast that the laws and certainties with which we are familiar will soon no longer apply. That event-horizon is called 'the singularity', a concept originated in 1993 with computer scientist, mathematician, and science fiction writer Vernor Vinge, and institutionalised by AI researchers Eliezer Yudkowsky and Tyler Emerson, who set up the Singularity Institute For Artificial Intelligence (SIAI) in 2000.

The key aspects of the informatic theory of the universe are that A) all matter is constituted, or at least can be captured and encoded, by information and complexity; since all matter, including the human brain, is constituted by and legible as patterns of information, there must be a continuum between not only human and nonhuman animals but also biological and nonbiological matter. Thus, B) humans may be regarded as one instance of the evolution of the universe from simple to complex informatic formations, bound to be superseded by super-intelligence. And since computation can capture and modify information, so C) information in the informatic cosmos may be translated from one medium to another, making all mental

states potentially transferrable across matter. Minds may be downloaded and uploaded, migrating from the electrochemistry of the brain to a computational platform, rendering the biological body obsolete. This latter is the task and promise of AI. After humans create real AI, Kurzweil writes,

the matter and energy in our vicinity will become infused with the intelligence, knowledge, creativity, beauty and emotional intelligence (the ability to love, for example) of our human-machine civilization. Our civilization will then expand outward, turning all the dumb matter and energy we encounter into sublimely intelligent—transcendent—matter and energy. (2005, 389)

This progression of intelligence over time and into all matter in the universe has also been called a ‘telos of rationality’ (Bostrom 2008).

A number of philosophical objections have been raised regarding the informatic view. Scholars like Katherine Hayles (1999) have argued that the informatic approach, in which any mind may be transferred to other substrates (i.e. downloaded and uploaded) because it is reducible to information, mistakenly reinscribes a Cartesian dualism of mind that presumes the separation of mind from the matter in which it arises. In this way, it is actually undermining its own materialist assumptions. The transhumanist goal of reproducing consciousness in silicon-based substrates will fail because a state in silicon can simply not be the same as a state in the synaptic and neuronal assemblage that is the biological brain. As David Roden (2015, 56) points out, however, this does not preclude the development of other kinds of powerful if unpredictable mental states (and thus versions of personhood) in computational agents, in which case a kind of posthuman being, ‘Human 2.0’ as he calls it, would emerge. A thornier distinction between consciousness and computation may make that debate moot. Reviewing Kurzweil’s work in *The New York Review of Books*, for example, the philosopher John Searle (2002) argued that ‘increased computational power’ is a different order of thing from ‘consciousness in computers’. In that case, there would be no posthuman case to make, as human consciousness will not have been broached at all.

Either way, as most scholars agree, consciousness is a hard problem to crack (Chalmers 2002, Nagel 2012), and no view regarding it is settled. Anthropologically, it is just the absence of convincing accounts of what it is that opens up an undetermined realm in which speculative ideas grow, giving shape to current transhuman practices and subjectivities. These in turn shift the function and valence of important, though unstable, categories such as ‘consciousness’ itself, and challenge established notions of ‘personhood’ and ‘human’, two categories whose distinct coherence relies on the kind of self-awareness associated with human consciousness.

Transhumanism as subject of scholarly inquiry

Much of the scholarship on transhumanism has moved along two paths. The first is in relation to the enhancement and modification of the body (brains included) and, ultimately, of the nature of being human.

In these debates, transhumanism becomes a bellwether for technology's dangers and possibilities. It has been termed as one of the greatest threats to humanity by its detractors (Fukuyama 2002) and heralded as the best way to save humanity by its proponents (Bostrom 2014). Susan Levin (2022) has made a convincing argument that the empirical bases of transhumanist speculation are too often erroneous, especially with regards to the components of intelligence and rational decision-making. For example, whereas transhumanists tend to dismiss emotions as irrational, cognitive neuroscience has shown the importance of emotions in good decision-making and creative thinking. Similarly, the individualism of some transhumanist visions belies the fact that intelligence is distributed and contextual. Critics also liken the enhancement fantasies of transhumanists to eugenicist fantasies that reek of racism and will lead to the abandonment of fellow humans who are not enhanced or on their way to technological posthumanity (Levin 2018, Farman 2020). In response, transhumanists tend to flatten all medical and technological intervention as proto-transhumanist, arguing that you cannot coherently accept hearing aids whilst rejecting neural implants, or promote lifesaving medicine in one instance whilst rejecting the technological quest to eliminate death. Either way, the discussion about transforming human nature via technology and the control of biology is not unique to transhumanism; it has been part of an older general debate about the power of science, especially since the emergence of genetic biology, the identification of DNA, and the manipulation of species genomes gave humans a vision of 'limitless self-modification', to use ethicist Paul Ramsey's (2009) words from the 1970s.

A second path has run along attempts to identify transhumanism as essentially a kind of religion. Some (Geraci 2010) have read visions of a machinic future in which the human species must be superseded in order for a better world to emerge as an extension, not of secular humanism, but of the Christian dialectics of apocalypse and salvation. However, this approach does not account for the new forms, subjectivities, technologies, and philosophies that emerge through transhumanism. Jon Bialecki (2022) takes a nuanced approach in his ethnography of Mormon transhumanists, suggesting that Mormonism and transhumanism 'rhyme'; that is, they have affinities that resonate with each other, and a group of Mormons recognising this have been building on the resonance. Such resonances between Mormonism and transhumanism include attempts to resurrect the dead, the conviction that man can become god, and the possibility that humans live in infinitely simulated worlds. One might point equally to affinities between transhumanism and an unlikely mix of emerging intellectual trends, such as the growing interest in panpsychism (Klinge 2020), the mixture of animism and technology in 'techno-animist' perspectives (Richardson 2016), or the emergence of informatic selves (Farman 2014), in which selves are increasingly understood and enacted through informational or algorithmic platforms that record one's movements, choices, desires, or physiology as informational patterns.

Despite its engagement with the core figure of anthropology—*anthropos*—transhumanism has yielded only a handful of sustained studies in anthropology. The overall anthropological question turns around subject

formation: what kinds of subjects are made through the ideals, technologies, practices, and social formations of transhumanism? Bialecki's (2019, 2022) aforementioned work on Mormon transhumanists examines how these two sets of ideas have come together in shaping the new subjectivity of Mormon transhumanism. Anya Bernstein (2015, 2019) studied Russian transhumanists, tracing their history through Russian cosmism, pre-revolutionary esoteric futurist movements, and the Soviet scientific and utopian secularist project, showing how Russian transhumanists disagree amongst themselves over the relationship of mind to body, over notions of personhood, and over the spiritual ideas and practices as opposed to mechanical approaches to body and mind. In either case, Bernstein argues, their approach is quite different from the American libertarian hyper-individualist vein, embracing a more collective, kin-based approach. Nevertheless, she identifies a tension that echoes the North American version of transhumanism: seeking life beyond mortality under the constant shadow of and obsession with extermination and other world-ending scenarios. Jenny Huberman (2021) brings a comparative approach to suggest that within transhumanism, kinship and personhood are being reconfigured. Drawing on Irving Hallowell, for instance, she argues that transhumanists are envisaging an Ojibwa-like world in which personhood is distributed among an array of other-than-human powerful beings, and relations with robots and software-based kin are already changing what the future family may look like. I have examined the development of algorithmic subjectivities (Farman 2014), transhuman spiritualities (Farman 2019), and suspended personhood, produced by transhumanism's quest for immortality, specifically via cryonics, and the challenges to the category of personhood in secular law (Farman 2013, 2020). The Technoscientific Immortality project at the University of Bergen, led by anthropologist Annelin Eriksen, is researching changes in social relations and notions of the human through six transhumanist case studies between the US and Russia that are radically transforming practices and awareness around death, long considered as one of the central markers of humanity. Together, these studies underline the ways in which transhumanism is unstable and destabilising, not fitting neatly into categorical divides, becoming a contested but flexible site for further thinking and rethinking of what it is to be human and to be conscious.

This may be one reason why some social theorists have found it hard to simply brush transhumanism aside, even if they disagree with its libertarian tendencies (Hayles 2011). Andrew Pickering (2011) has made the argument that transhumanist cyborgs are interesting in their human-nonhuman 'mangle', but overall transhumanism starts from a very narrow premise regarding the kinds of possible mind-body capacities that exist and may be imagined for the future. As powerful as a human-machine cyborg may be in some respects (for example, in knowing what you should buy!), computationalism only cultivates one aspect of possible powers in what Pickering (2009) calls the 'performative brain', many others of which may be cultivated through other modalities, from psychedelic experiments to meditation. The machinic, in other words, is not attentive to other emergent selves and 'the continual bubbling up of irreducible novelty in the world'. Thus, the problem is not that transhumanism is essentialist with respect to human nature—indeed, transhumanists see humans as a species whose nature is to change its nature, and breaking up the

category 'human' presents the opportunity to transcend our 'natural heritage' and its limits (Bailey 2005; Kurzweil 2005). Rather, the problem is that transhumanism values only a specific form of intelligence or life, one that is translatable and shapeable via computation (Farman 2020). In this mode, the machinic and the computational are turned into their own reified nonbiological value—that is, they are valued in and of themselves as though they were meaningful aside from the human social contexts in which they exist. To transhumanists, the value of nonhuman superintelligence overrides human interests, and is encoded in efforts to achieve the vaunted *telos* of a posthuman techno-civilisation. For example, in transhumanist philosopher Nick Bostrom's (2002, 5) influential analysis, one of the existential risks to humanity is argued, paradoxically, to be when 'the potential of humankind to develop into posthumanity is permanently thwarted' by human societies, *even if* 'human life continues in some form'. What is valued over humanness in this informatic cosmology is the perpetuation of a *posthuman form of life*—in which the power, accuracy, and speed of computational technologies become the utmost measures of worth, mainly because these are also supposed to lead to the rise of conscious beings who, as one famous blog has it, are 'less wrong'.

Transhumanism then may be properly understood as a social project for claiming particular techno-libertarian futures, imagined as part of an inevitable and universal trajectory of intelligence and informatic complexity. Whereas these futures promise emancipation from the limitations of human biology and embodiment, including those of race, gender, and even labour, they keep erasing and so in practice reproducing the racial and settler colonial histories and on-going structural inequalities that undergird the development of such technologies and the accrual of power and wealth to a few. In this way, they follow the white mythos of the autonomous subject 'whose freedom is in actuality possible only because of the surrogate effect of servants, slaves, wives, and, later, industrial service workers who perform this racialized and gendered labor' (Atanasoki and Vorna 2019, 17-9). In other words, whatever is invoked in the name of humanity or transhumanity, the futures idealised by transhumanists cannot be valued universally.

Indeed, transhumanist forms of life represent a danger, especially to those in already structurally precarious situations (racially, geopolitically, by class, by status, by physical ability) as well as those engaged in political struggles that aim against the wider contemporary socioeconomic and civilisational formations. As others have remarked, America's soldiers are the most advanced transhumanist prototypes,

with their smart weapons, their body armor, their night-vision goggles, their special diets, their training in and integration into remote robotic combat systems, and, we would suspect, their ingestion of neuropharmaceuticals such as Modafinil to keep them alert even when deprived of sleep for 36 hours (Allenby and Sarewitz 2011, 24).

This is no accident. The projected transhumanist technologies often emerge from military research and are fed back into the military. Despite their libertarian gestures against the state, high-powered

transhumanists are enmeshed with the American state and the military: for example, Ray Kurzweil has worked closely with DARPA and NASA, whilst Peter Thiel owns a policing and surveillance company called Palantir (closely linked to Cambridge Analytica).

Conclusion

Transhumanism is part of the wider set of posthumanisms that have ripped apart the common Enlightenment-era conjunction of person and human—that is, of an entity whose dignity and rights were premised on a notion of special consciousness that emphasised self-awareness, reason, and the ability to speak and act freely. If, as transhumanists claim, those features are not exclusively based in biological forms, and may be attributes of computational devices, then personhood is decoupled from exclusive humanism, and even multi-specieism, and its attributes and pursuant rights may be extended to what was previously thought of as inert or disenchanted matter.

Transhumanism will likely raise questions of personhood in anthropology, forcing us to rethink its relations to nature and technology: is it enough to be able to *attribute* agency or consciousness to mountains or avatars in order to make them count as persons? Do agency and consciousness only arise relationally, as an effect of interactions between beings? Or is there some metaphysical or subjective essence that agency or consciousness refer to and which may or may not be discerned in entities such as mountains or avatars? Is ‘personhood’ a more inclusive category than ‘human’? Or are these questions moot, because they are effects of formations of power that constantly work to render certain people’s claims to rights and power impossible, regardless of the categories used, and despite the struggles of people to expand the embrace of those categories?

Whilst the informatic cosmology of mind and cosmos allows transhumanists to move beyond the secular humanist disenchantment of matter and argue for such things as robot rights or intelligent matter in the universe, it also narrows the possibilities of mind by fetishising algorithmic intelligence (Ziewitz 2016). For in the name of expanding human capacities and transcending human limits, algorithmic modalities are narrowing the range of valued forms of life in ways often reminiscent of the colonial divides that separated ‘primitive’ from ‘civilised’—in this case, separating the technologically enhanced forms of life from regular old *Homo sapiens*, and without acknowledging the social and historical conditions that enable enhancement. Thus the populations overvalued and undervalued in these imaginaries have been *de facto* racially and geopolitically defined; that is, white Americans, or Western-educated urban denizens more generally, are the main proponents as well as the assumed subjects of that future. Other human socialities and possible lifeways are erased from that future, and quite likely a particular human subjectivity is being produced by the mediation of computational devices that makes for a recursive loop of algorithmic affirmation: we learn with computers how to behave computationally and so we value computational behaviour. What is noticeable in the meantime is that as transhumanism has gotten increasingly

entrenched in the tech world's networks of power, its discourse, anxieties, and projects have become harder to distinguish from those of the military, scientific, technological, and financial institutions of late capitalism: existential risk, space colonies, neural implants, robotic automation, avatar selves, and mind uploading have moved from being the maligned concerns of a few technofuturists to more common, popular goals of a post-human future.

Acknowledgements

With gratitude to those whose comments helped me think through these matters more deeply, especially the editor of the encyclopedia Felix Stein, two anonymous reviewers, and Noreen Khawaja.

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