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Posthumanist perspectives on transhumanist marketing
More than human genes, more than market promotion

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ABSTRACT: Transhumanism advocates enhancement of current human capacities with new technologies, in pursuit of human improvement and perfection, and thereby creates lucrative marketing opportunities. We use the broader concept of posthumanism, which includes this, but also all the other ways in which humans are enhanced by non-humans. However, our study is not about posthumanism, but about how a posthumanist critique can enhance our analyses and diagnoses. We consider not just technology, but also other species such as our microbiome, in an effort to critically examine transhumanist marketing, and develop analytic tools to better understand it. The limitations are highlighted with an extended example of the marketing of health information in response to the Covid-19 pandemic. Transhumanist marketing is distinguished between "ends", promoting products, and "means", as ways to facilitate marketing. We offer a typology of motivations for consumption of transhumanist goods and services.

KEYWORDS: TRANSHUMANISM; POSTHUMANISM; SOCIAL MEDIA; PUBLIC HEALTH PROMOTION; COVID-19.

Introduction

In concrete terms, transhumanism is usually seen as the enhancement of current human capacities with new technologies, including genetic technologies such as gene editing, in the pursuit of human improvement, perhaps perfection. This is part of posthumanism, but only the anthropocentric side of it. More than 90% of the self-replicating nucleic acids in the human body are not human, including not only various kinds of DNA, but also the RNA of viruses. While transhumanists adopt and hope for technology to help perfect the consumer, posthumanists emphasize all the ways in which humans are enhanced, or more generally affected, by non-humans, not just machinery and other things, but also other species. The porous container of our human body is home to many commensal (eating together) microbes; "messmates", as Donna Haraway (2008) refers to them. Some of these are parasitic, some potentially deadly, while others contribute to our bodily functions, such as efficient digestion of essential minerals and vitamins. Bacteria in our microbiome "provided vitamin K where it was once scarce, but just as importantly, they allowed us to extract extra calories from our food, up to 30% extra" (Dunn 2011: 81). Microbial companions co-evolve with our immune systems. Manipulation of our microbiome is emerging as a very large sector of research, investment, and treatments.

Transhumanist marketing goes beyond the private sector. The importance of government and other non-profits becomes clear when we use a posthumanist lens to include a wider range of the ways in which we may benefit or experience risk from our entanglement with non-humans. The mechanical technology bias of transhumanism obscures other important areas of enhanced capacities, such as use of sniffer dogs to identify cancer and Covid-19, growing transplant organs in pigs, or fecal transplants to help our microbiome solve serious health problems. One of the fastest growing sectors of the economy is the vaccine market which grew six-fold over the two decades to 2019, worth over $35bn then, but clearly accelerating further in 2020. When we analyze the pandemic in posthuman terms, to follow non-humans through their influence, the flood of public health marketing around Covid-19 becomes apparent. The Covid-19 pandemic provides an extended example for this article.

The term "transhumanist marketing" is ambiguous. The first meaning is marketing of transhumanist technologies, products, and services: "transhumanism as ends", our main focus. Equally important is the use of

transhumanist technologies to enhance marketing capacities, such as gamification (Leclercq *et al.* 2020) and the use of social media to promote peer influences among consumers: "transhumanism as means". The two meanings distinguish between what is marketed, and how marketing is undertaken. The latter, as means, has even wider significance for marketing management than the former.

The next section clarifies these issues. The third section narrows to only one scale, the microbial and viral realm of nanometres. We considered using an organizing framework that reveals the relevance of transhumanism/ posthumanism at all scales, from nano/micro through the body to locality, nation and globe, but that was clearly too ambitious for a single paper. Our procedure herein was to scan the relevant literatures within and beyond marketing research. The fourth section constructs a typology for conceptualizing the diversity of motivations for adoption of transhumanist products and services. Finally, we offer brief concluding comments.

Transhumanism, posthumanism and marketing

Transhumanism and posthumanism are both concerned with enhancement of current human capacities through new technologies. Posthumanism, though, is a broader concept that includes transhumanism as simply one, future-oriented, facet of the total phenomenon of human capabilities being enhanced by material and living non-humans throughout our history and prehistory. Usage of these terms varies. Katharine Hayles (1999) refers to posthumanism in ways more usefully described as transhumanist. We distinguish the two terms, with posthumanism concerned with all the ways in which we are entangled with non-humans, including but not restricted to those which expand our contemporary capacities (transhumanism). Rather than a feature of a future only now emerging, we have always been posthuman; the mastery of fire, cooking, language and other technologies made us humans in the first place (Wrangham 2009; Smart, Smart 2017). Posthumanism rejects and transcends the inadequacies of humanism, transhumanism and anthropocentrism. Our conceptualization of posthumanism is less about "posthuman-ism", the study of people who use new technology to go beyond species typical human lifeways (although this is included), and more about "post-humanism", a rejection of anthropocentrism and the development of a worldview and methodology that acknowledge our reliance on and co-evolution with a diversity of non-human agencies that enable and constrain our actions.

Posthumanism explores the long history of reliance on non-human forms of aid, within and beyond our body. These have come to be known as prostheses, extending the usual meaning of a device to replace or augment an impaired part of the body to include all devices that extend our human capabilities. A hammer is a prosthetic extension of our force, a megaphone an extension of the volume of our voice. For Cary Wolfe (2010: xxv), a human is a "prosthetic creature that has coevolved with various forms of technicity and materiality, forms that are radically 'not-human' and yet have nevertheless made the human what it is". In addition, posthumanism recognizes our fundamental reliance on our microbiome and other species (Smart, Smart 2017).

Transhumanism, by contrast, is future-oriented and particularly relevant for marketers concerned with encouraging consumption of new products and services. It concerns things becoming possible, that excite the imagination or stir deep fears about the consequences for ourselves, cultures and societies, and thereby help to open pocketbooks. Enlightenment ideas of progress asserted the perfectibility of individuals and society. Transhumanism is humanist, rather than posthumanist, in this sense (Bostrom 2005; Wolfe 2010). Those who identify as transhumanist are among those most confident in, and desirous of, individual improvability. In high tech marketing, these features are clear:

> Whether the buzz is around IoT and big data or deep learning and AI, part of the marketing model for information technology and consumer technology has always been to spread the belief that the next big advancement is just around the corner – and that whatever it is, we humans will be supercharged by it, becoming vastly more productive as a result. Aside from the objections of Luddites and conspiracy theorists, we seem to have an unwavering faith in relentless technological advancement. If we want to make our businesses better, our economies stronger, and our youth more competitive, we need sleeker, smarter tech – and more of it (Madsbjerg 2019).

Even failures of technological advancement spur the faith that the next generation of educational software, for example, will overcome current failures, as Edward Tenner (2018) argues. Digital innovation is often ineffective without blending it with analog intuition, skill, and experience, but in practice these are often displaced.

The transhumanist movement has utopian goals, including immortality either through body repairing nanotechnology, or through uploading consciousness to computers. For Ray Kurzweil (2005: 9), a pioneer of the movement, within a few decades a Singularity will be produced by exponential speeding up of technological change, resulting in "the merger of

our biological thinking and existence with our technology, resulting in a world that is still human but that transcends our biological roots. There will be no distinction, post-Singularity, between humans and machine or between physical and virtual reality". Robert Frodeman (2019: ix) says dominant social and economic policy is itself implicitly transhumanist, assuming "not only that technological development must continue, but that it must continually speed up"; the "architecture of modern culture is implicitly transhumanist in orientation" *(ibidem*: 1).

Posthumanists are more likely to recognize the dangers of faith in technological progress in an Anthropocene era widely thought to be undergoing substantial destabilization through continued economic growth (Collins 2018). Transhumanists trust technology's abilities to solve problems that humans cause, perhaps through nanotechnology for pollution control, or geoengineering our way out of climate change. The other main difference is that transhumanism tends to be Western or Eurocentric in emphasis, with those involved with the movement from non-Western countries adopting similar discourses of faith in technology (Smart, Smart 2017). Posthumanist perspectives vary much more significantly from one culture to another, with many being traditionally much less anthropocentric (Ingold 2000; Descola 2013; Kohn 2013). Posthumanism offers a powerful lens for studying transhumanism and uncovering a wider variety of more than human influences on the changing human condition. What is most interesting to marketers is the present and emerging future. So, in this article we follow transhumanism's future orientation, concentrating on what is new, emerging and presented as possible in the near to medium terms, while using posthumanism to critique the approach and expand the scope of innovations that are considered beyond the mechanical.

There are two forms of transhumanist marketing: including explicit reference to transhuman, transhumanist or more than human, or marketing that implicitly signals transhumanist products and concerns without using the term itself. There is relatively little explicit transhumanist marketing as yet, but implicit examples are proliferating. In this article, we define marketing as the "activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large"[1]. This broad definition includes selling products and services, but also governmental and NGO promotion of policies and desired behaviors such as energy conservation or handwashing.

1. Cfr. Defintions of marketing, *American Marketing Association*, https://www.ama.org/the-definition-of-marketing-what-is-marketing/, accessed on 21/06/2020.

While the algorithms at the heart of technology giants like Google, Amazon and Facebook are deploying AI in ways that raise intense concerns about discrimination, data privacy and the autonomy of the consumer (Noble 2018), some algorithms have managed to convince consumers to entrust companies with some surprising practices, such as renting out their homes to strangers through AirBnB. Rachel Botsman (2017: 4) says

> We are already putting our faith in algorithms over humans in our daily lives, whether it's trusting Amazon's recommendations on what to read or Netflix's suggestions on what to watch.

The "real disruption happening is not technology itself, but the massive trust shift it creates". Distributed trust "can widen the circle of trust, unlocking the potential to collaborate and connect with unfamiliar strangers, but it can also erect and harden boundaries between us" (*ibidem:* 8). Trust in fake news has become rampant on social media. Covid-19 has fueled a "surge of numerous rumors, hoaxes, and misinformation, regarding the etiology, outcomes, prevention, and cure of the disease [...] promoting erroneous practices that increase the spread of the virus", hindering the adoption of healthy practices (Tasnim *et al.* 2020: 171).

Consumers are being changed through contemporary technological developments. First, through social media data mining and analysis, data is increasingly the raw material for innovations which can be more widely marketed. Second, intense connectivity means that adopted technologies are subtly changing what it means to be human: for example, reliance on GPS navigation has been shown to alter the brain. In a whole range of fields, gamification is being used not only to hook customers on online games, but also to improve educational and managerial outcomes (Leclercq *et al.* 2020). Institutions are now widely exploring nudging technologies to promote, for example, more environmentally sustainable behaviour. In China, initiatives such as the Social Credit System are drawing on cultural emphases on shame and reciprocity to influence behavior (Curran, Smart 2020).

In the next section, we explore the physically small pole of the scalar spectrum of transhumanist marketing. But the implications of projects at this scale go far beyond the nano, affecting global political economies. The section illustrates just some of the stakes involved in the decisions we make on transhumanism, but similar questions arise in relation to macroscale issues like self-driving vehicles (Pink *et al.* 2020) and drone deliveries.

Marketing transhumanism at microbial and viral scales

This section considers the nanoscale. It describes the importance and characteristics of the field, and serves to set the stage for the typology introduced in the next section. We were tempted to do a thinner scan of the whole scalar spectrum, from nano to globe, but it seemed more useful to examine one portion of the spectrum of transhumanism more deeply.

Rather than stretching our view, we narrow it to the scale below one micrometer (1000 nanometres), focusing on issues and entities most relevant to transhumanist aspirations. Nanotechnology normally refers to objects 1 to 100 nanometers (one billionth of a meter). The nanotechnology market was first quantified by the National Science Foundation in a 2001 report, which estimated a 1.5 trillion dollar market by 2015. The problem with these forecasts is that they are based on a highly inflationary data collection and compilation methodology, such as including the price tag of $100 for an entire drug dose, rather than its actual 10 cents worth of nanomaterial ingredient. Such estimates are better considered as the nanotechnology-enabled market rather than the market itself[2]. Despite the hype, scientists are excited by the unusual properties of materials that emerge at very small scale[3]. Nanotechnology is of particular interest to transhumanists because it promises the potential of radically extending human life without having to upload our consciousness, by having nanomachines injected into our body to continually provide maintenance, destroy cancerous cells, and undertake repairs. It could also contribute to the enhancement of abilities in a wide variety of ways. The fears related to the technology can also be intense, particularly around the prospect of self-replicating nanobots that could eventually turn the biosphere into nothing but "grey goo" (Giles 2004).

Most commercial attention in the nanoscale so far has been paid to DNA and biotechnology based upon its manipulation. The size of DNA is somewhat complex, with each diploid cell containing about two metres of DNA when unfolded, but which is normally folded into about 30 nanometres. Biotechnology has also had its periods of hype, particularly after the launch of the Human Genome Project without much in the way of commercial products. The political struggles over genetically modified organisms in agriculture are well known. Genetic therapy is even more contentious but is

2. Cfr. Debunking the trillion dollar nanotechnology market size hype, *Nanowerk*, Apr 19, 2007, https://www.nanowerk.com/spotlight/spotid=1792.php, accessed on 27/06/2020.
3. Cfr. The BS and the science of nanotechnology, *The Conversation*, May 29, 2018, https://theconversation.com/the-bs-and-the-science-of-nanotechnology-97317, accessed on 27/06/2020.

now moving forward rapidly. In 2017, the U.S. Food and Drug Administration approved three gene therapy products, two for cancer and another for an inherited disease. The Transhumanist FAQ at Humanity Plus suggests that "The potential scope of genetic medicine is vast: virtually all disease and all human traits – intelligence, extroversion, conscientiousness, physical appearance, etc. – involve genetic predispositions"[4].

The ability to manipulate genes took a large step forward with the development of a generalized tool for gene editing, CRISPR, for which a 2020 Nobel Prize was awarded. Genes have been edited for decades, but techniques were specific to a particular species or gene, while CRISPR, derived from a bacterium, is a generic tool. One major risk is the ability to create organisms that incorporate CRISPR into their own genome so that they can edit their own genes and spread through a population. Such modifications could have benefits, such as making mosquito vectors of malaria unable to carry the disease, but the dangers are also ominous.

The editing of human germline (sperm and egg cells) genomes which could be passed to the next generation, necessary for transmissible transhumanist improvements, is particularly controversial but has potential to end genetically inherited diseases such as Huntington's. Genetic modification for enhancement rather than preventing genetic flaws is even more contentious. Many scientists are calling for a moratorium on all germline modification experimentation: research on human germlines is currently banned in 40 countries. An international summit in Washington organized in December 2015 by the national academies of the US, UK and China failed to agree on a ban on gene-editing. While about 30 nations have passed rules to prevent germline editing, there is as yet no wider moratorium.

Genetic engineering, along with many other cutting-edge medical technologies, is based on a "political economy of hope" that leads sufferers "to pursue experimental therapies" and encourages "nations to invest billions" (Song 2017: 5). It represents a promissory horizon for patients as well as a commercial one for corporations. Priscilla Song's (2017) work on experimental stem and fetal stem cell therapies in China is relevant here. Hopes for a cure, and restrictions on the therapies in the West, enabled Chinese clinics to attract patients, unwilling or unable to wait, from around the world, due to transnational regulatory variations. Critics have attacked "stem cell tourism" as an "off-shore hazard" to good science "marketed by 'rogue' clinicians" who exploit desperate patients (*ibidem*: 7-8).

4. Cfr. The Transhumanist FAQ, *Humanity*+, https://humanityplus.org/philosophy/transhumanist-faq/, accessed on 28/06/2020.

As well as hope, there are challenges and fears. New "technosocial practices have troubled boundaries between nature and culture, matter and spirit, love and money, life and death, and individual and collective" (Roberts 2012: xxii). Gene editing will extend these boundary disputes, threatening a future of competition, among individuals and between nations, through designed babies.

So far, our discussion has focused on human efforts at scientific progress, but posthumanism also points us towards non-humans with their own "agendas", often damaging to us, and posing immense risks. Viruses fit within the nano scale, varying from 20 to 400 nanometres, while the smallest bacteria are about 400 nanometres. Both have had massive consequences throughout history, including the Columbian exchange of diseases between New and Old Worlds which brought devastation to populations without immunities. It has been estimated that upwards of 80–95% of the Native American population was decimated as a result of introduced diseases, exacerbated by other mistreatments that heightened their vulnerability, within the first 150 years after 1492 (Nunn, Qian 2010).

Viruses, bacteria and other microscopic organisms also take us beyond the realm of science and private marketing. In the 19th century, their material nature was unknown, as were antibiotics, so that most interventions were in the realm of public health initiatives, such as quarantine and sanitary infrastructure. In addition, affective public health promotion has long been crucial for the success of struggles against the less desirable varieties of our tiny companions. Durbach's (2004) history of the anti-vaccination movement in England from 1853 to 1907 demonstrates the crucial importance of the use of media in public health promotions, and as with Covid-19 now, they were deployed on both sides, with mutual accusations of falsities. As digital technology allows for the "inexpensive dissemination of true information, it also does the same for lies, misrepresentations, propaganda, fake news and sheer nonsense" (Hofacker, Corsaro, 2020: 412-13). There is growing evidence that on public health issues, "the fabulists seem to be winning"[5]. A study of clusters on Facebook found that anti-vaccination clusters are "highly entangled with undecided clusters in the main online network, whereas pro-vaccination clusters are more peripheral". On current trends they predict anti-vaccination views will "dominate in a decade" (Johnson *et al*. 2020: 230). Anti-vaccination clusters showed the highest growth during the measles outbreak of 2019, whereas pro-vaccination clusters showed the lowest growth. Part of the explanation given

5. Return of the paranoid style, *The Economist*, June 2020, 6: 49-50.

was that "anti-vaccination clusters offer a wide range of potentially attractive narratives that blend topics such as safety concerns, conspiracy theories and alternative health and medicine, and also now the cause and cure of the Covid-19 virus" (*ibidem*: 431).

A growing number of studies suggest that on social media fake news propagators on contentious and emotional issues are more successful than proponents of scientific rigor. In the USA, exposure to social media is associated with higher probability of "believing that the government created the virus or that officials exaggerate its seriousness"[6]. We encountered similar scepticism in our BSE research in Alberta (2006-2010). There was scepticism about the prion as cause of BSE among a number of farmers that we talked to. One prefaced his agreement to be interviewed about the impact of BSE by warning us that he and his wife don't believe in BSE. Instead, they were proponents of the alternative theory popularized by Mark Purdey, a British farmer, who argued that the cause was the use of the chemical phosmet to treat warbler fly infection. Alternative hypotheses about BSE "reflect anxieties about the environment, industry, the government, and the intrusion of outsiders" (Lindenbaum 2001: 379).

One problem is that health promotion efforts at behavior change have traditionally focused on non-communicable diseases, with major contributions in areas like tobacco and obesity prevention. Yet, with the exceptions of HIV/AIDS and sexually transmitted diseases, "application of health promotion principles and methods to tackle infectious diseases has been largely neglected. As a result, public health professionals who deal with communicable diseases are often unaware of the approaches used by health promoters … although there is a good reason to assume that these can be usefully adapted and applied to preventing infectious diseases as well" (Van den Broucke 2020: 4). Health promotion should contribute to addressing Covid-19 "at the downstream level focusing on individual behaviour change and disease management, at the midstream level through interventions affecting organizations and communities and at the upstream level through informing policies affecting the population" (*ibidem*: 1).

One important shift in promoting vaccination, responding to the resurgence of an anti-vaccination movement after a discredited 1998 study attributing autism to the shot for mumps, measles, and rubella, was to emphasize vaccination as protecting others, not just yourself or your children (Nicholson, Leask, 2012). When a Covid-19 vaccine becomes available, emphasizing vaccination as a duty or a civic contribution will

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6. Return of the paranoid style, *The Economist*, June 2020, 6: 49-50.

likely be crucial in encouraging rapid uptake in countries where levels of distrust of government is high; already polls are suggesting as many as 40% of Americans will refuse being vaccinated.

Digital connections have become ever more central during the lockdowns and physical distancing of the pandemic (Low, Smart 2020), and this applies to dissemination of health (dis)information as well. Public health has been particularly crucial because of the distinctive nature of this virus: its propensity to be transmitted by non-symptomatic individuals, making traditional forms of quarantine ineffective, and intensifying the contagion effect of global connections. This shows that the influence of a disease is mediated by its material qualities, or rather of the material outcomes of its entanglement with its host.

Some less traditional forms of health promotion have emerged out of the Covid-19 pandemic, most notable perhaps being the handwashing video. Dettol, for example, launched a TikTok challenge aimed at getting more people in India to wash their hands, getting 8.7bn views in four days. Dettol launched the campaign with several India-based TikTok influencers who have millions of followers on the platform (Liffreing 2020). Other handwashing videos from Vietnam, Thailand, UNICEF and elsewhere also went viral, resulting in millions of views, and hopefully more handwashing as well.

The most effective Covid-19 campaigns have gone beyond simply good advertising. Instead, they have often relied on long-established public health systems rooted in neighborhoods and villages, as in Kerala state in India and Vietnam. Unfortunately, in many other places, neoliberal reforms have undermined grassroots public health systems. India's Prime Minister Modi highlighted the Gujarat model of economic growth in his electoral success. But Gujarat state under Modi cut its health spending sharply, to less than 1% of state GDP from 4.4% in 1999, and has just 0.33 hospital beds for 1,000 people, compared to the national average of 0.55, the second highest rate of Covid-19 in India, and a case-mortality ratio more than double the nationwide figure (Sridharan 2020). In Chinese cities, lockdowns were more than just telling people to stay at home, backed up by fines. Rather they "involved deploying armies of people to act as guards, health monitors, helpers for the infirm and procurers of supplies. Central to these efforts were [...] residents' committees and neighbourhood party committees" established in the Mao era[7].

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7. On every street, *The Economist*, June 2020, 13: 31-32.

Many issues raised by Covid-19 for transhumanist marketing remain undecided. Which public health strategies are best? Does authoritarian overriding of personal privacy have sufficiently better outcomes to justify the costs to civil liberties? How much effect does pre-existing trust in states and institutions, as in Sweden, have in managing the pandemic without mandatory lockdowns? How can public health institutions overcome the suspicion about contact tracing apps, even in Singapore? How permanent will the new controls and surveillance systems be after the pandemic has (presumably) receded after the most rapid development of a vaccine in history? Since Covid-19 is not yet the "Big One", a new strain of influenza with high mortality rates, predicted by epidemiologists, will we be better prepared to respond and to manage public health information the next time? How well do governments and their institutions learn from crisis, and how long does the learning last (Smart, Smart 2009)?

Public health has not easily adopted posthumanist ideas, because the field's intellectual and moral commitments "are driven by the fundamental aim of studying and improving human health" (Cohn, Lynch 2018: 3). By contrast, posthumanism attempts to demote human centrality by recognizing that relationships are dispersed and distributed, leading to a conceptualization of health as a diffuse quality across diverse entities (*ivi*). Bibliometric analysis demonstrated almost no reference to posthumanism within public health despite rapidly growing attention to interspecies interactions and zoonoses. One reason is that the One Health paradigm, which stresses the relationships between human and veterinary medicine and the risks to human health caused by neglect of these entanglements, has occupied this central ground (Friese, Nuyts 2018). Health promotion has "never paid much attention to zoonotic causes of human health, but the current crisis suggests that maybe it should. A good starting point would be to embrace the concept of 'One Health', which recognizes the interconnection between people, animals, plants and their shared environment, with the goal to achieve optimal health outcomes" (Van den Broucke 2020: 4). The vast majority of infectious diseases are derived originally from non-human species, including SARS and Covid-19 (Rock 2018).

A typology of transhumanist motivations

The previous sections worked through some of the characteristics of transhumanist goods and services. We will be concerned in this section with transhumanist marketing in terms of "ends", not "means". While we draw

upon our scan of transhumanism at the nanoscale, this typology is broader, including things and processes at larger scales that explain our points more effectively. Thus, it is intended to be a typology with broader applicability. Clearly, motivations are immensely diverse, and often specific to particular goods or services. However, our intention is to generate a list as short as possible of very basic kinds of motivations relevant to transhumanist consumption motives.

Ideology

The first type concerns those who explicitly adopt products due to an affiliation with transhumanism as an "ideology" or identity, wanting to become transhumanist or join with others in the project. Affiliation to the extent of joining one of the transhumanist associations is still very uncommon, with the largest group, Humanity+, formerly the World Transhumanist Association, having over 6000 members[8]. It "advocates the ethical use of technology, such as artificial intelligence, to expand human capacities. In other words, we want people to be better than well"[9]. Clearly the number of people who would be attracted to such an identity or ideology is greater than those who join transhumanist associations, but we have been unable to find any surveys that could give us better numbers. Numbers aside, the motivations for aspiring transhumans are well articulated in work by Ray Kurzweil (2005) and other proponents.

If the transhumanist market were restricted only to those who self-identify as transhumanists, it would be a small niche, although perhaps lucrative given the attractions of life extension for those with large amounts of money. However, the implicit transhumanist market is much larger than the explicit one for those who are self-identifying. If we accept the claim by Robert Frodeman (2019) that neoliberal cultures and institutions are essentially transhumanist, the transhumanist market is the totality of goods and services that expand human capabilities beyond current standards, and at a minimum encompasses all sufficiently innovative new technologies, or those that promise such innovations. Our remaining five types all concern implicit transhumanism through consuming products that fit the definition even if the term itself is absent from either the marketing or the consumers' aspirations and decisions.

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8. Cfr. https://singularityhub.com/2011/05/09/humanity-uniting-transhumanists-worldwide/-#:~:text=Humanity%2B%20is%20an%20%E2%80%9Cinternational%20nonprofit,a%20%E2%8-0%9Clegitimate%20subject%20of%20scientific, accessed on 01/07/2020.
9. Cfr. Humanity+, https://humanityplus.org/, accessed on 01/07/ 2020.

Hope

Transhuman products offer hope, most of all for a cure. While hope is found in many types (e.g. hope to be rich or famous), we consider it to be most characteristic of situations where people are suffering from some ailment or other condition that reduces their abilities or prospects (e.g. for at least an average life expectancy) below the species typical state. This kind of hope for a cure is commonly discussed in the literature on medical tourism or in the desire to try unproven medical treatments when standard medicine has nothing left to offer but pain management or palliative care.

A community of diabetes hackers has emerged recently. They began from the medical devices that had helped to improve the daily lives of diabetes sufferers, the insulin pumps that deliver a programmable stream of medication and allow them to go without regular injections, and the continuous glucose monitors, under the skin sensors that send messages to the users' phone. The hackers realized that linking the two with a computer could produce the equivalent of an artificial pancreas, automating the process, but with individual user oversight. Medical device manufacturers have been very slow in filling this need, so the community produced an open source iPhone app called Loop that allows individuals to do it themselves, with support and instructions available in a Facebook group (with 15,000 members in 2020). Device manufacturers are now working to move this process beyond its current legal grey zone. Jonathan Garfinkel, a lifelong diabetic, finished his article on this (2020: 48) with the words "I've become a man verging on cyborg, made up of skin and muscle, tubes and gadgets, all held together by an incomprehensible language. "What is this body?" I ask myself now. "And what could it be?"

Desire

We desire more than we have, or can do, at present. After ideology/ identity, this is probably the most characteristically transhumanist motivation, because it involves wanting to surpass human normality, to go beyond, to pursue personal improvement or perfection.While hope for a cure is a recovery, desire to be able to do more than was possible in the past is the expansion of human capacities. It is worth noting that cures, prosthetics or treatments can sometimes go beyond recovery to typical level and provide more than human capabilities. For example, Oscar Pistorius was initially ruled ineligible to compete in the 2008 Olympics. His blade-enhanced legs use 25% less energy than able-bodied athletes to run at the same speed. In 2008, *Time* magazine selected him as one of the 100 most influential people,

''on the cusp of a paradigm shift in which disability becomes ability, disadvantage becomes advantage'' (quoted in Camporesi 2008: 639). Design rules have been put in place that attempt to prevent the possibility of runners using blades breaking world records. As the controversy over the banning of the entire Russian track and field team from the 2016 Olympics for chemical doping demonstrates, athletic performance is a realm in which the boundaries of nature are policed, even though in the pursuit of "almost" (but not quite) superhuman achievements.

Profit

Clearly most of the profit from transhumanist goods and services go to the producers, not the consumers. Four out of five of the richest Americans in June 2020 are in high tech, and are 26% richer than before Covid-19. Yet, some new consumer products, such as 3D printers, open source software and influencer as a career aspiration, are putting the means of production back into the hands of consumers with modest means. China's vibrant makers movement, identified with do it yourself production, open source hardware, tinkering and repair, sees itself as a key center to democratize technology production. For those working in China's first hackerspace, Xinchejian, founded in Shanghai in 2010, creativity requires openness, and openness meant to work outside rigid state institutions or large corporations. However, while globally hackerspaces and the makers movement tend to promote a do-it-yourself culture emphasizing peer production and commitment to open source principles, China's version tends to be neither "countercultural nor pro-system" (Lindtner 2014: 149). Particularly in Shenzhen, makerspaces stress ways to mediate between the sophisticated manufacturing ecosystem and the need for makers with commercial intentions to scale up from tinkering and low volume 3D printing methods, and work with government sponsorship.

One contemporary use of transhuman products and services to generate monetary advantage for their consumers is enhancement of cognitive and other abilities in a competitive labour market and increasing competition for the elite educational training needed to compete in those labour markets. In his penetrating critique of the ideal of meritocracy, Daniel Markovits (2019) argues that hyper-competition now more nearly stifles than fosters social mobility. Elite schools, even at the kindergarten level, run admissions competitions that very few students from middle class backgrounds can win, while the labor market favors the super-educated graduates that elite universities produce. While meritocratic exclusion disadvantages the none-elite, the children of the elite are exposed to intense, competitive training,

leaving them tense and exhausted. An edge is worth accepting serious risks, such as the endemic cheating that online services facilitate, or the use of illicit cognitive enhancement products such as black market prescription drugs. The nonmedical use of substances such as Adderall and Ritalin to increase memory or concentration is known as pharmacological cognitive enhancement (PCE). It rose between 2015 and 2017 in all 15 nations included in a survey. In 2017, nearly 30% of US respondents said they had used drugs for PCE at least once in the preceding 12 months, up from 20% in 2015. The largest increases were in Europe: use in France rose from 3% in 2015 to 16% in 2017; and from 5% to 23% in the United Kingdom (Frood 2018).

Influence and reputation

One of the driving forces for social media is the desire to acquire likes, followers and a good reputation. The latter is significant enough to generate widespread discussion of the reputation economy, in which personal reputation "functions [...] as a new form of currency and, more generally, value" (Hearn 2010: 421). Online reputation has become significant enough in itself to create a new career option as an "influencer", receiving payments for promoting commercial products (Martínez-López *et al.* 2020). The rapid dissemination of information about what is currently hot, such as touristic sites that need to be ticked off on one's Instagram feed, has resulted in the acronym FOMO, a fear of missing out, a feeling of anxiety or insecurity over the possibility of missing out on something, a special event or opportunity.

A good example of a widespread formal system of reputation is China's developing social credit system (Curran, Smart 2020). Its initial concern was primarily with companies, in response to major food safety scandals and debt defaults, and inadequate data for conventional credit scoring. When launched nationally in 2014 (with an announced, but not yet accomplished, 2020 completion date), its goals had expanded: to assess the trustworthiness of Chinese citizens and companies in complying with legal rules, moral norms, and professional and ethical standards. In some localities, people who haven't complied with court orders have their ring tone replaced: callers receive a recorded message telling them the person is on a blacklist. Given the strength of shame as a social motivator in China, such shaming messages can be very effective. Even the government is suggesting that when people can access social credit scores, it will affect dating and marriage patterns. The Shanghai government suggested in 2016 that filial piety be entered into the scoring system (Chen, Cheung 2017).

Peers, networks and social capital

Many an older person resistant to using computers or the internet has been drawn in by the urge to be included in the information and photos shared by their children or other relatives on Facebook. If plans for Saturday night are being updated on the go by your friends in Facebook, not being connected means being left out. Peer pressure combined with network effects (the more users there are on a network the more useful it becomes and the more difficult it becomes for rivals to compete) make Facebook (or WeChat in China) almost unavoidable. The "strong network effects are a prime asset that Facebook has defended vigorously: it has spent vast sums on buying firms it considers likely future competitors, such as Instagram, acquired in 2012 for $1bn, and WhatsApp, for which it paid $19bn in 2014"[10].

Ant Forest is the first "known attempt to gamify sustainability" (Wu 2018). Ant Financial is a financial tech spin-off from Chinese tech giant Alibaba which is expected to be the largest ever IPO within weeks of our writing this. Its product, Ant Forest, encourages users to "grow" virtual trees by activities such as buying transit tickets online with Alipay, its payment system, or walking to work (measurable by smartphone GPS). When the tree is fully grown, it is planted in the real world by enterprises who gain carbon credits. This application, which "taps into the addictive urge we feel when playing games on our digital devices, had attracted an astonishing 200 million users by January this year – in part because people invited their friends to compete with them to see who was greener". Two hundred million people, three percent of the world's population, "are greening their lives because they are getting immediate information about the environmental impact of their choices in a fun and competitive way", according to the head of UN Environment (UN Environment Programme 2017). Ant Forest users can interact with their social networks through the ability to water their friends' tree, where green energy points can be transferred to friends up to three times a day to cultivate their virtual tree, drawing on the prominence of gift giving and reciprocity within Chinese culture.

In a comparable way, academics have been drawn into making considerable efforts on academic social networking sites. Such sites are increasingly being used as an indicator of an academic's reputation and are often considered during recruitment and promotion processes. Usage is self-reinforcing; those who are highly cited receive additional attention and interest, increasing their citations further. D'Alessandro *et al.* (2020: 410) conclude that self-promotion through academic networking sites "is not a substitute for quality research, nor being a competent teacher, but [...] do offer scholars a platform to market their research and themselves".

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10. A tale of two networks, *The Economist*, June 2020, 6: 54-55.

Concluding comments

Transhumanists are optimists, expecting improvement from emerging science and technology, and those who market products to them see their desire for enhancement as an opportunity. Posthumanists are more likely to see the risks involved in such anthropocentric wish fulfillment, risks to ourselves, but also to our co-inhabitants of the world. In the midst of the pandemic, it seems that it would have been desirable to pay more attention to the risks and not just the opportunities for new tools and new sources of profit. The Economist magazine devoted its June 27, 2020 cover to "The next catastrophe (and how to survive it)". The lead article addresses the issue of existential risk: "one that threatens the premature extinction of Earth–originating intelligent life or the permanent and drastic destruction of its potential for desirable future development" (Bostrom 2013: 15). In the list of such threats, pandemics are one of the less threatening possibilities, because they can be prepared for with early warning systems and proactive efforts to avoid disrupting the habitats where future zoonoses may lurk. Some transhumanist projects such as AI, nanotechnology and synthetic biology present much less predictable existential risks.

In the pre-industrial past, catastrophic risks, such as being hit by an asteroid or a new ice age, were outside human control. Now, in the Anthropocene, when humans have developed the capabilities to become the dominant force reshaping the world itself, we need to become less anthropocentric, even if only for our own interests. If we do not become more aware of the non-humans with which we share the world both inside and outside our skins, saving the world, ours and theirs, will be much more difficult. But even with awareness and good intentions, change is difficult. Marketing will be of great importance in convincing people that change is needed, even desirable. The Covid-19 pandemic adds to worries that our abilities to accomplish this are very limited, and that some transhumanist innovations like social media may so far be more of a problem than a solution in facilitating cooperation when dealing with major crises.

The Covid-19 pandemic is not the "Big One" that epidemiologists have been warning is inevitable: that will likely be a new influenza of zoonotic origin with a much higher mortality rate. A UN Environment Programme (2020) report on preventing the next pandemic notes that 75% of all emerging infectious diseases are zoonotic, so that protection has to begin with an understanding of the conditions that lead to such risks. situation.

This

> includes developing and maintaining a global mapping of encroachment, illegal trade, wet markets, etc. that are pathways for future pathogen transmission and thus potential future zoonoses identified. It will also mean supporting efforts to arrest ecosystem encroachments and harmful practices, restore degraded ecosystems, close down illegal trade and illegal wet markets, while protecting communities that depend on these for their food supply and livelihoods (UN Environment Programme 2020: 9).

This is an immense agenda, and every item on it requires convincing people to cooperate, often against their own interests, and marketing with a posthumanist agenda and sensibility will be crucial for this.

REFERENCES

Bostrom, Nick, 2005, A history of transhumanist thought, *Journal of Evolution and Technology*, 14, 1: 1-25.

Bostrom, Nick, 2013, Existential risk prevention as global priority, *Global Policy*, 4, 1: 15-31.

Botsman, Rachel, 2017, *Who can you trust?: How technology brought us together–and why it could drive us apart*, London, Penguin.

Camporesi, Silvia, 2008, Oscar Pistorius, enhancement and post-humans, *Journal of Medical Ethics*, 34, 9: 639.

Chen, Yongxi, Anne Sy Cheung, 2017, The transparent self under big data profiling: Privacy and Chinese legislation on the Social Credit System, *Journal of Comparative Law*, 12: 356-378.

Cohn, Simon, Rebecca Lynch, eds, 2018, *Posthumanism and Public Health,* London, Routledge.

Collins, Samuel Gerald, 2018, Futures, intimacies, animisms: Unfinished anthropologies in the twenty-first century, *Reviews in Anthropology*, 47, 1-2: 39-56.

Curran, Dean, Alan Smart, 2020, Data-driven governance, smart urbanism and risk-class inequalities: Security and social credit in China, *Urban Studies*, 58, 3: 487-506.

D'Alessandro, Steven *et al.*, 2020, Promote or Perish? A brief note on academic social networking sites and academic reputation, *Journal of Marketing Management*, 36, 5-6: 405-411.

Descola, Philippe, 2013, *Beyond Nature and Culture,* Chicago, University of Chicago Press.

Dunn, Rob R., 2011, *The Wild Life Of Our Bodies: Predators, Parasites, And Partners That Shape Who We Are Today*, New York, Harper.

Durbach, Nadja, 2004, *Bodily matters: The anti-vaccination movement in England, 1853–1907,* Durham, Duke University Press.

Friese, Carrie, Nathalie Nuyts, 2018, Posthumanist critique and human health: how nonhumans (could) figure in public health research, in *Posthumanism and Public Health*, Simon Cohn, Rebecca Lynch, eds, New York, Routledge: 19-29.

Frodeman, Robert, 2019, *Transhumanism, Nature, and the Ends of Science: A Critique of Technoscience,* New York, Routledge.

Frood, Aarran, 2018, Use of "Smart Drugs" on the Rise, *Nature,* 6 July, https://www.scientificamerican.com/article/use-of-ldquo-smart-drugs-rdquo-on-the-rise/, accessed on 04/07/2020.

Garfinkel, Jonathan, 2020, Hackng diabetes, *The Walrus* January, 42-48.

Giles, Jim, 2004, Nanotech takes small step towards burying "grey goo", *Nature,* 429: 591.

Haraway, Donna, 2008, *When species meet,* Minneapolis, University of Minnesota Press.

Hayles, N. Katherine, 1999, *How we became posthuman: Virtual bodies in cybernetics, literature, and informatics*, Chicago, University of Chicago Press.

Hearn, Alison, 2010, Structuring feeling: Web 2.0, online ranking and rating, and the digital "reputation" economy, *Ephemera: Theory & Politics in Organization*, 10, 3/4: 421-438.

Hofacker, Charles F., Daniela Corsaro, 2020, Dystopia and utopia in digital services, *Journal of Marketing Management*, 36, 5-6: 412-419.

Ingold, Tim, 2000, *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill,* London, Routledge.

Johnson, Neil F., Nicolas Velásquez, Nicholas J. Restrepo *et al.,* 2020, The online competition between pro- and anti-vaccination views, *Nature*, 582: 230–233.

Kohn, Eduardo, 2013, *How forests think: Toward an anthropology beyond the human*, Berkeley, University of California Press.

Kurzweil, Ray, 2005, *The singularity is near: When humans transcend biology,* New York, Penguin.

Leclercq, Thomas *et al.*, 2020, When gamification backfires: the impact of perceived justice on online community contributions, *Journal of Marketing Management*, 36, 5-6: 550-577.

Liffreing, Ilyse, 2020, Dettol's Tiktok hand-wash challenge gets nearly 9 billion views in four days, *Ad Age*, 18 March, https://adage.com/article/digital/-dettols-tiktok-hand- wash-challenge-gets-nearly-9-billion-views-four-days/2-245096, accessed on 30/06/2020.

Lindenbaum, Shirley, 2001, Kuru, prions, and human affairs: Thinking about epidemics, *Annual Review of Anthropology,* 30, 1: 363-385.

Lindtner, Silvia, 2014, Hackerspaces and the Internet of Things in China: How makers are reinventing industrial production, innovation, and the self, *China Information*, 28, 2: 145-167.

Low, Setha, Alan Smart, 2020, Thoughts about public pace during Covid-19 pandemic, *City & Society*, 32, 1.

Madsbjerg, Christian, 2019, Toying With Tech: The Consequences of Playing Blindly, *MISC Magazine*, 4 February, https://miscmagazine.com/toying-with-tech-the-consequences-of-playing-blindly/, accessed on 19/06/2020.

Markovits, Daniel, *The meritocracy trap: How America's foundational myth feeds inequality, dismantles the middle class, and devours the elite,* New York, Penguin Press.

Martínez-López, Francisco J. *et al.*, 2019, Behind influencer marketing: key marketing decisions and their effects on followers' responses, *Journal of Marketing Management*, 36, 7-8: 579-607.

Markovits, Daniel, 2019, *The meritocracy trap: How America's foundational myth feeds inequality, dismantles the middle class, and devours the elite*, New York, Penguin Press.

Nicholson, Michelle S., Julie Leask, 2012, Lessons from an online debate about measles–mumps–rubella (MMR) immunization, *Vaccine,* 30, 25: 3806-3812.

Noble, Safiya Umoja, 2018, *Algorithms of oppression: How search engines reinforce racism,* New York, NYU Press.

Nunn, Nathan, Nancy Qian, 2010, The Columbian exchange: A history of disease, food, and ideas, *The Journal of Economic Perspectives*, 24, 2: 163-188.

Pink, Sarah *et al.*, 2020, Design anthropology for emerging technologies: Trust and sharing in autonomous driving futures, *Design Studies*, 69.

Roberts, Elizabeth F. S., 2012, *God's laboratory: Assisted reproduction in the Andes,* Berkeley, University of California Press.

Rock, Melanie J., 2018, Who or what is "the public" in critical public health? Reflections on posthumanism and anthropological engagements with One Health, in *Posthumanism and Public Health*, Simon Cohn, Rebecca Lynch, eds, New York, Routledge: 30-40.

Smart, Alan, Josephine Smart, 2009, Learning from disaster? Mad cows, squatter fires, and temporality in repeated crises, in Eric C. Jones, Arthur D. Murphy, eds, *The Political Economy of Hazards and Disasters*, Lanham, M.D., Altamira Press: 267-293.

Smart, Alan, Josephine Smart, 2017, *Posthumanism: Anthropological Insights*, Toronto, University of Toronto Press.

Song, Priscilla, 2017, *Biomedical Odysseys: Fetal Cell Experiments from Cyberspace to China,* Princeton, Princeton University Press.

Sridharan, Vasudevan, 2020, Could Narendra Modi's "Gujarat model" be to blame for the Indian state's high coronavirus toll? *South China Morning Post*, 9 June, www.scmp.com/week-asia/politics/article/3088256/could-narendra-modis-gujarat-model-be-blame-indian-states-high, accessed on 30/06/2020.

Tasnim, Samia, Md Mahbub Hossain, Hoimonty Mazumder, 2020, Impact of Rumors and Misinformation on COVID-19 in Social Media, *Journal of Preventive Medicine and Public Health*, 53, 3: 171-174.

Tenner, Edward, 2018, *The efficiency paradox: What big Data can't do,* New York, Vintage.

UN Environment Programme, 2017, China's Ant Financial shows how digital clout can fight climate change, 3 November, https://reliefweb.int/report/china/-china-s-ant-financial-shows-how-digital-clout-can-fight-climate-change, accessed on 30/06/2020.

UN Environment Programme, 2020, *Preventing the next pandemic: Zoonotic diseases and how to break the chain of transmission,* Nairobi.

Van den Broucke, Stephan, 2020, Why health promotion matters to the COVID-19 pandemic, and vice versa, *Health Promotion International*, 35, 1–6: 181-186.

Wolfe, Carey, 2010, *What Is Posthumanism?* Minneapolis, University of Minnesota Press.

Wrangham, Richard, 2009, *Catching fire: How cooking made us human*. New York, Basic Books.

Wu, Phylicia, 2018, Ant Financial and the Greening of Fintech, *The Diplomat,* 25 January, https://thediplomat.com/2018/01/ant-financial-and-the-greening- of-fintech/, accessed on 30/06/2020.

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