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Legal anthropocentrism at crossroads: International legal principles ahead of transhumanism and post-anthropocentrism

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Abstract:

Transhumanism and post-anthropocentrism have entered the forefront of philosophical and legal discourse. Whether we are referring to the evolution of Artificial Intelligence (AI) into higher forms of intelligence and autonomy or the synergy of human and artificial intelligence, the self-evident anthropocentrism of our societies and legal systems is undergoing a transformation, with the prospect of post-anthropocentrism looming. Proposed approaches such as prioritising human design over natural selection or pursuing digital immortality have transitioned from science fiction to scientific discourse, raising significant ethical and legal questions. This article attempts to distinguish between transhumanism and techno-ontological post-anthropocentrism and to identify the legal principles necessary to preserve legal anthropocentrism. The key proposition is that we must distinguish between human enhancement and post-anthropocentrism.

Keywords: Transhumanism, Post-anthropocentrism, AI, Legal Anthropocentrism, Human Enhancement, Human Rights

1. Introduction

What was once confined to the realm of science fiction is rapidly becoming central to scientific and public discourse. Artificial Intelligence (AI) stands at the epicentre of both techno-utopian promises and techno-dystopian warnings: unprecedented wealth accumulation, extended and even eternal digital and natural lives, and varying degrees of human enhancement potentially culminating in transhumanism through human-AI synergies. Conversely, concerns loom about the decline of the Anthropocene in favor of an era dominated by machines or human-machine hybrids, and fears of societal implosion due to biologically entrenched inequalities.[1]

In the face of such promises and threats, uncertainty prevails: if and when an ontologically distinct era might emerge—one in which humans are transformed into something "other-than-human" or rendered obsolete by superior intelligent beings. The concepts of "transhumanism" and "post-anthropocentrism" have emerged as central in an interdisciplinary debate involving philosophy, law, engineering, biology, computer science, and more. Yet, despite their prominence, these concepts often fail to clarify what the future holds.[2] Amid the gradual materialisation of these ideas and the uncertainty they bring, law must provide international answers. Issues of bioethical regulation now demand clarity regarding what should be permitted or encouraged and what should not. In the sections below, this article examines the

[1] The exact definition of AI constitutes is debated and constitutes a dynamic issue over time. Since Alan Turing's, John McCarthy's and the Dartmouth Workshop's criteria for AI intelligence as well as definitions, while the fundamentals remain more or less the same, several re-approaches and re- interpretations of the concept have occurred. In such a framework there is a long list of AI definitions proposed by a variety of experts. In furtherance of descriptive clarity, in the present article, the definition of AI that is adopted is the one of the EU AI act, which defines AI as "…a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments;" Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (hereinafter EU AI Act). See Maggie Savin-Baden and David Burden, 'Digital Immortality and Virtual Humans' (2019) 1 Postdigital Science and Education 87; Jenny Huberman, 'Immortality Transformed: Mind Cloning, Transhumanism and the Quest for Digital Immortality' (2018) 23(1) Mortality 50; Daniel Nemenyi, 'Robot Makes Free: The Leibnizian Cryptowar of Norbert Wiener' (2023) 214 Radical Philosophy 3; Eric Charles Steinhart, *Your Digital Afterlives: Computational Theories of Life after Death* (1st edn, Palgrave Macmillan 2016) <https://link.springer.com/book/10.1057/9781137363862>; David Burden and Maggi Savin-Baden, *Virtual Humans Today and Tomorrow* (1st edn, Chapman and Hall/CRC 2019) <https://www.taylorfrancis.com/books/mono/10.1201/9781315151199/virtual-humans-david-burden-maggi-savin-baden>.

[2] The term post-anthropocentrism is preferred in the present article. The terms are used interchangeably. When reference is made to other articles which adopt the term post-humanism the same term is used here. In the rest of the article the term post-anthropocentrism is adopted. See Rosi Braidotti, 'Posthuman, All Too Human. Towards a New Process Ontology' (2006) 23 Theory, culture & society 197.

aforementioned concepts more thoroughly and then explores the foundations of legal anthropocentrism.

2. Characteristics of transhumanism and post-anthropocentrism

Although transhumanism and post-anthropocentrism are frequently discussed in parallel, they are not synonymous. Transhumanism is more precisely defined through foundational texts like the "Transhumanist Manifesto,": "… a worldview that seeks a quality of life that brings about perpetual progress, self-transformation, practical optimism, visionary solutions, and critical thinking—the transhuman. The transhuman is a biological-technological organism, a transformation of the human species that continues to evolve with technology..."[3]

By contrast, post-anthropocentrism challenges the centrality of the human altogether. Philosophically, it rejects the notion of human supremacy, positioning the human as one among many actors in a broader ecological or cosmic network. Post-anthropocentric thought may lead to visions of humans coexisting with, or being succeeded by, non-human intelligences—be they artificial, hybrid, or altogether novel forms of life. In its techno-ontological form, post-anthropocentrism imagines a future where human ontology is fundamentally altered or rendered obsolete.[4]

Transhumanism describes at its core the effort to transcend human biology through technology. As Dieter Birnbacher wrote: "Transhumanists want us to enter upon a process that will ultimately lead to "posthumanity" by attempting, now and in the near future, to transcend certain limits inherent in the human condition as we know it".[5]

According to Nick Bostrom, transhumanism refers to human evolution in the sense of a "globally coordinated policy to control human evolution by modifying the fitness function of future intelligent life forms."[6] In Julian Huxley's, one of the founders of the transhumanist movement, own words: "the truth of the transhumanist approach and its central conception is larger and more universal than any previous truth, and is bound in the long run to supersede lesser, more partial, or more distorted truths, such as Marxism, Christian Theology, or liberal individualism..[7]1

Transhumanism is essentially a cultural movement with goals for the future of humanity. At its core there is human enhancement through the use of various

[3] The Transhumanist Manifesto, https://www.humanityplus.org/the-transhumanist-manifesto, accessed 9 March 2024.
[4] Francesca Ferrando, 'Existential Posthumanism: A Manifesto' in Rosi Braidotti and others (eds), *More Posthuman Glossary* (Bloomsbury 2023) 47.
[5] Dieter Birnbacher, 'Posthumanity, Transhumanism and Human Nature' in Bert Gordijn and Ruth Chadwick (eds), *Medical Enhancement and Posthumanity* (Springer 2008) 95.
[6] Nick Bostrom, 'The Future of Human Evolution' (*Nick Bostrom*) <https://nickbostrom.com/fut/evolution> accessed 11 March 2024.
[7] Julian Huxley, *New Bottles for New Wine* (Chatto & Windus 1957) 260.

technologies and therefore the exercise of some type and extent of control of human evolution.[8] It can take various forms in terms of its goals and means of implementation: some advocate market- oriented transhumanism, while others the egalitarian access to transhumanism as a universally accessible social right.[9] In all its forms however transhumanism proposes the use of technology and some type of human design for the evolution of the human nature instead -at least partially- of natural selection.

Extropians who constitute part of the wider transhumanist movement in their "manifesto" called "Extropian Principles", list 7 fundamental principles: perpetual progress, self- transformation, practical optimism, intelligent technology, open society, self- direction and rational thinking. Perpetual progress is expected to lead us eventually to post- humanism. According to Max More -aka Max O' Conner- humanity is a "transitional stage standing between our animal heritage and our posthuman future", which- the future- will be shaped by "genetic engineering, life-extending biosciences, intelligence intensifiers, smarter interfaces to swifter computers, neural-computer integration, world-wide data networks, virtual reality, intelligent agents, swift electronic communication, artificial intelligence, neuroscience, neural networks, artificial life, off-planet migration, and molecular nanotechnology".[10] These supreme beings will be free of natural environment restrictions.

For transhumanists, progress consists in the transcendence of human biological limits from an individualistic perspective, within which individual desire constitutes not only the driving force but also an individual right that must be respected and preserved.

The opponents of transhumanism have a lot to counter. The afore- mentioned definitions can be considered -quite easily in fact- even as types of eugenics and anti-anthropocentrism respectively. Steven Hoffman argues that transhumanism is both materialistic and reductionist in terms of the interpretation of human nature.[11] This is what makes transhumanism philosophically untenable and scientifically unfounded according to Hoffman:[12] the effort to reduce what it means to be human to biology and more specifically to the molecular level, therefore underestimating what can be categorised as the cultural aspects of humanity. The aforementioned approach, identifying human nature with the mind and the mind with a neurobiological machine which can be emulated on another, non- organic, material basis explains the impact

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[8] Ibid. 17

[9] Francesca Ferrando, 'Posthumanism, Transhumanism, Antihumanism, Metahumanism, and New Materialisms: Differences and Relations' (2013) 8(2) Existenz 26, 27; Ronald Bailey, *Liberation Biology: The Scientific and Moral Case for the Biotech Revolution* (Prometheus 2005); James Hughes, *Citizen Cyborg: Why Democratic Societies Must Respond to the Redesigned Human of the Future* (Westview Press 2004).

[10] Ibid.

[11] Steven A Hoffman, 'Transhumanist Materialism: A Critique from Immunoneuropsychology' in Stefan Lorenz Sorgner (ed), *Beyond Humanism: Trans- and Posthumanism* (Peter Lang 2005) 274.

[12] Ibid., 275

of AI on transhumanism but also – according to its opponents- shows the naivety and the risks of this movement.[13]

For post-anthropocentrists the main goal is the substitution of human dominion. Such substitution can take various forms which may end up being contradictory: from the emergence of ultra-humans to the obsoleteness of humans due to the emergence of some hybrid form of human and artificial intelligence or the philosophical- legal adherence to a world view arguing that we, humans are only one of the various species instead of the dominant one. Post-anthropocentrism, essentially consists in that our world is not, should not or will not be human- centered. Pepperell argued that: "Humanists might regard humans as distinct beings, in an antagonistic relationship with their surroundings. Posthumanists, on the other hand, regard humans as embodied in an extended technological world».[14]

When it is incorporates transhuman expectations, it describes the stage of the process during which the exceedance of human limits will be achieved at such an extent that humans will have evolved to a different form of beings -a form of ultra humanism-or will be obsolete- a form of antihumanism. Post- anthropocentric philosophers often expect "humans to think beyond their traditional humanist limitations and embrace the risks that becoming-other-than-human beings".[15] Or in other words: "In the post humanist thought, the human is no longer [...] the adoption or the expression of man but rather the result of a hybridization of man with non-human otherness".[16]

The relationship therefore between transhumanism and post-anthropocentrism can be complicated. On the one hand, transhumanism can lead to some form of post anthropocentrism- in fact it is expected to do so. As it is noted in the World Transhumanism Association: "post-human may be completely synthetic (based on artificial intelligence), or be the result of numerous, gradual, biological improvements, what will be ending with the creation of a new post-human race. Some post-humans may even acknowledge that it could be useful to get rid of their bodies and live as information patterns on huge, super-fast computer networks".[17]

The focus in the present article is on this form of post-anthropocentrism, the one that visualises a new form of being, "other- than- human", instead of human through the use of technology. This is why the term that is adopted here is "techno- ontological post-anthropocentrism".

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[13] Nick Bostrom, 'Transhumanist Values' (2005) 30 Journal of Philosophical Research 3.
[14] Robert Pepperell, 'Posthumans and Extended Experience' (2005) 14 Journal of Evolution and Technology 34.
[15] Rosi Braidotti, *The Posthuman* (Wiley 2013).
[16] Roberto Marchesini, 'Ruolo delle alterità nella definizione dei predicati umani' in Pietro Barcellona, Fabio Ciaramelli e Roberto Fai (eds), *Apocalisse e post-umano. Il crepuscolo della modernità* (Dedalo 2007) 54.
[17] Ewa Walewska, 'Trans-, Post-/-Humanizm, -człowiek. Transformacje' (2011) 3(4) Cuadernos de Bioética 315, 316.

Transhumanism and techno- ontological post-anthropocentrism orientate from different philosophical approaches. Transhumanism constitutes in principle an enlightenment- oriented approach in furtherance of an enhanced form of humanity, which however may eventually lead either to some form of ultra- humanism but also of post-anthropocentrism.[18] Transhumanism is built on the assumption of human superiority and reason which is expected to be capable of mastering completely nature. As Julian Savulescu says: "Humanity until this point has been a story of evolution for the survival genes - survival and reproduction ... we are entering a new phase of human evolution—evolution under reason—where human beings are masters of their destiny. Power has been transferred from nature to science."[19]

Post-anthropocentrism constitutes a rupture with enlightenment theories, advocating the relativisation or complete negation of human superiority.[20] Post-anthropocentrism de-constructs human primacy and supremacy.[21] Postmodernity and post-anthropocentrism is more of a voluntaristic individualism.[22]

Despite their differences in terms of philosophical orientation, post-anthropocentrism and transhumanism share the centrality of technology as means of altering human nature. Both concepts suggest that human nature can and must be transformed - improved, enhanced or substituted depending on the perspective. This goal, for certain "versions" both of trans and post-anthropocentrists passes through a fundamental transformation: the transformation consists in human interferences in natural selection which may escalate even up to complete substitution of natural selection by human design and selection.[23] This is the crux of confrontations around transhumanism and techno- ontological post-anthropocentrism.

As Bostrom argues, transhumanism is about the modification of the human nature, not only about healing diseases -even if one includes aging in the condition of disease. "Trans" and "post" anthropocentrism both involve aspirations of fundamental transformation of human nature or/and human role in the world surrounding us.

These aspirations of transhumanism and post-anthropocentrism raise philosophical and eventually legal issues in relation to their specific applications as well as concepts in general. We can divide them in two main categories. The most significant among

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[18] Bradley B. Onishi, 'Information, Bodies, and Heidegger: Tracing Visions of the Posthuman' (2011) 50(1) Sophia 101, 112.
[19] Julian Savulescu, 'Human-Animal Transgenesis and Chimeras Might Be an Expression of Our Humanity' (2003) 3(3) Journal of Bioethics 22, 24.
[20] Roland Barthes, *The Death of the Author* (Fontana 1977) 142-148.
[21] Gianni Vattimo, *The End of Modernity: Nihilism and Hermeneutics in Postmodern Culture* (The John Hopkins University Press 1988).
[22] Amalia Quevedo, *De Foucault a Derrida: pasando fugazmente por Deleuze y Guattari, Lyotard, Baudrillard* (Eunsa 2001); Luis Miguel Pastor and José Ángel García Cuadrado, 'Modernity and Postmodernity in the Genesis of Transhumanism-Posthumanism' (2014) 25(3) Cuadernos de Bioética 335, 342-344.
[23] Stefan Lorenz Sorgner, 'Beyond Humanism: Reflections on Trans- and Posthumanism' (2010) 21(2) Journal of Evolution and Technology 1, 2.

them is what types of changes to human nature we should be ethically and legally allowed to implement.

In the next part, the concept of legal anthropocentrism is examined. It is in the framework of legal anthropocentrism that transhumanism and techno- ontological post-anthropocentrism must be legally assessed. Anthropocentrism under law implies a certain understanding of human nature under law and a variety of rights and principles that flow from human nature.

3. Legal anthropocentrism

Post-anthropocentrism necessitates an understanding of what anthropocentrism is in general, and under the law—namely, legal anthropocentrism. The starting point is that, because legal systems are self-evidently anthropocentric, there is no formal legal definition of "human" or "Anthropos"—the Greek word for human from which the term "anthropocentrism" is derived. The degree of anthropocentrism in legal systems varies. For example, many legal systems today recognise animals and nature as subjects of law. Thus, anthropocentrism does not necessarily imply the complete subjugation of all non-human entities to human interests, nor does it require the exclusivity of humans as legal subjects. What is not in question under legal anthropocentrism is that humans are distinguished from "other-than-human" beings in a binary relationship, and that humans are considered the dominant species—both ontologically and in terms of legal personality.

A point of convergence between philosophical and legal discussions of anthropocentrism is that humanness is defined in relation to non-human entities, ranging from animals to gods and from technological objects to non-biological matter.[24]

In law, what it means to be "human" has traditionally been considered self-evident. This is not to ignore the complex biological and philosophical debates on species classification.[25] Yet despite their importance, these debates are largely absent from legal systems, which are primarily built on a form of "common sense"—particularly concerning human identity. In short, we recognise a human being when we see one. In every legal system, the phenotype of a human is "human-in-nature," and this has remained self-evident—except in certain contested contexts such as prenatal life or end-of-life scenarios.[26] Under present legal systems, once a human is born it is self-obvious that (s)he is a human being.

[24] Andy Miah, *A Critical History of Posthumanis*m (Springer 2008) 86.
[25] Dieter Birnbacher, 'Posthumanity, Transhumanism and Human Nature' in Anthony Mark Cutter and others (eds), *Medical Enhancement and Posthumanity* (Springer 2008) 98.
[26] Historically and until the emergence of the cyberspace we could never see human out of nature.

Historically, there have been legal distinctions and significant debates over the level of legal personality afforded to individuals, often based on biological (e.g., age, disability, illness, gender) or legal (e.g., citizenship, free or enslaved status, incarceration) conditions. However, most of these are legal fictions rather than ontological debates. The ontology of humanness has not been seriously questioned in modern legal systems—except, perhaps, in the case of embryos, whose dependency on a host environment has raised ongoing debates about their ontological and legal status as full human beings.[27]

In addition to the self-evident phenotype of "human-in-nature," legal anthropocentrism is grounded in humanity's presumed superior intelligence. Humans create and interpret laws, and are seen as the only species with the potential for full legal personality.[28] Moreover, legal anthropocentrism depends on maintaining a binary distinction between humans and all "other-than-human" entities. The rationale is profound: if we cannot clearly identify what is human and what is not, then sustaining an anthropocentric legal order becomes untenable.

As humanity becomes increasingly integrated with digital and artificial environments, maintaining this binary becomes more difficult. What, for instance, is an avatar in cyberspace? What will a highly evolved, autonomous bot be—especially one that preserves our memories and aspects of our personality long after our physical death? What about a digitally immortal person? Or a cyborg with enhanced cognitive and physical capabilities? It is difficult to answer these questions with any certainty, given the ontological distance from what has, until now, been intuitively understood as "human."

That legal anthropocentrism transcends individual legal systems is indirectly confirmed by major international—and national—human rights instruments. Notably, the Universal Declaration of Human Rights (UDHR) does not attempt to define who constitutes the "human family." This anthropocentric presumption contributes to legal certainty. Once that certainty is disrupted, the coherence of legal systems is likewise endangered.

The anthropocentrism of our legal systems is also explicitly affirmed in international human rights treaties. The UDHR and subsequent human rights treaties declare that all members of the "human family" possess "inherent dignity" and "equal and inalienable rights," merely by virtue of being part of that family. The term "human

[27] The definition of ontology that is adopted in particular is the following: "[T]he science of categorization of objects and relations". It is founded on the empirical verifiability thanks to objective facts. David R Koepsell, 'Ethics and Ontology: A New Synthesis' (2007) 8 Int Ontology Metaphysics 123, 125.

[28] Andrew Feenberg, *Technosystem: The Social Life of Reason* (Harvard University Press 2017) 20.

family" is not defined—because, it is assumed, we know who is human when we see them.[29]

The notion that rights arise from human nature, described as inherent and inalienable, reflects a natural law foundation of human rights. We possess these rights simply because we are born human. The UDHR is built upon the assumption of a common human nature.[30]

Similar phrasing appears across international and national human rights documents. The European Convention on Human Rights refers to "fundamental freedoms" without needing to elaborate ontological definitions.[31] The African Charter on Human and Peoples' Rights states in its preamble that "fundamental human rights stem from the attributes of human beings," and Article 4 declares that "human beings are inviolable."[32] No legal definition of "human" is offered—because we recognise a human when we see one.

The Convention on Human Rights and Biomedicine also makes mention to "human being" that deserves respect "both as an individual and as a member of the human species".[33] It is on these grounds that in article 13 prohibits the breach with natural selection by stating that "An intervention seeking to modify the human genome may only be undertaken for preventive, diagnostic or therapeutic purposes and only if its aim is not to introduce any modification in the genome of any descendants."[34] While the definitions of health and disease remain dynamic, this limitation underscores a legal commitment to safeguarding an unaltered human essence. Prohibitions on the commercial use of human embryos and the trafficking of human body parts reflect the broader legal presumption of a common, enduring, and inviolable human nature.

The Universal Declaration on the Human Genome and Human Rights also rests on this anthropocentric foundation. Its preamble emphasises the unity of economic, social,

[29] Universal Declaration of Human Rights, Preamble <https://www.un.org/en/about-us/universal-declaration-of-human-rights> accessed 8 September 2024.
[30] "All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood." Ibid, Article 1
[31] Convention for the Protection of Human Rights and Fundamental Freedoms as amended by Protocol No 15 <https://rm.coe.int/1680a2353d> accessed 9 September 2024.
[32] African Charter on Human and Peoples' Rights <https://www.oas.org/en/sla/dil/docs/African_Charter_Human_Peoples_Rights.pdf> accessed 9 September 2024.
[33] Council of Europe, Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine <https://rm.coe.int/168007cf98> accessed 9 September 2024.
[34] Ibid, Article 13

cultural, civil, and political rights. Article 1 asserts: “The human genome underlies the fundamental unity of all members of the human family.”[35]

These legal documents collectively exemplify legal anthropocentrism. Human rights, as a key expression of this worldview, are grounded in natural law, which presupposes a universal human nature—unchanging through time and shared by all. Were this nature to change, rights would become conditional, dependent on fluctuating ontological criteria requiring constant redefinition.[36]

In summary, legal anthropocentrism is based on an empirically grounded, ontological understanding of who is human and who is not. It presumes the existence of a unique, universal, and enduring human nature, recognisable in all individuals. This foundation has two primary expressions: the superiority of humans as full legal subjects, and the binary distinction between humans and non-humans. While human rights law is not the sole arena where legal anthropocentrism is expressed, it is its most emblematic form. It is from this basis that we must consider legal principles capable of addressing the emerging realities of transhumanism and techno-ontological post-anthropocentrism.[37]

4. Legal principles ahead of transhumanism and techno- ontological post-anthropocentrism

In the previous sections, the fundamental characteristics of transhumanism, techno-ontological post-anthropocentrism, and legal anthropocentrism were presented. Legal anthropocentrism, as previously analysed, is based on certain ontological assumptions: that we can recognise a human when we see one, that there exists a binary distinction between human and "other-than-human," and that a common human nature is shared. Within this framework, while ontology and law are distinct domains, the latter rests on foundational assumptions drawn from the former.[38]

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[35] Universal Declaration on the Human Genome and Human Rights (11 November 1997) <https://www.ohchr.org/en/instruments-mechanisms/instruments/universal-declaration-human-genome-and-human-rights> accessed 10 September 2024.

[36] William Starr, 'Law and Morality in HLA Hart's Legal Philosophy' (1984) 67(4) Marquette Law Review 673, 689.

[37] Arthur O Lovejoy, *The Great Chain of Being: A Study of the History of an Idea* (Harvard University Press 1936).

[38] Andy Miah, 'A Critical History of Posthumanism' in Anthony Mark Cutter and others (eds), *Medical Enhancement and Posthumanity* (Springer 2008) 83; Richard Van Gulick, 'Consciousness' in Edward N Zalta (ed), *The Stanford Encyclopedia of Philosophy* (Winter 2021) <https://plato.stanford.edu/archives/win2021/entries/consciousness/>.
While there is a growing tendency of recognition of rights to other beings or even entities, the legal personality of the latter remains at a lower level compared to humans and its recognition is dependent upon human decisions to do so.
Sirkku K Hellsten, ‘The Meaning of Life during a Transition from Modernity to Transhumanism and Posthumanity’ (2012) Journal of Anthropology 1, 1-7; Francesco Viola, 'Umano e post-

As discussed earlier, the primary ambition of transhumanism is to transform human nature through technology. As Gregory Stock wrote, "Humanity is leaving its childhood and moving into its adolescence as its powers infuse into realms hitherto beyond our reach."[39] The related concept of "participant evolution," endorsed by many transhumanists, suggests that human enhancement can—and should—overcome biological constraints.[40] The legal question, therefore, is whether these goals and methods align with existing legal anthropocentrism, and under what conditions. In the case of techno-ontological post-anthropocentrism, with its ambition to decenter humanity altogether, this question becomes even more urgent.

The legal challenges posed by these two concepts differ in foundation but ultimately converge in the transformative nature of their ambitions. For transhumanism, the key legal concern is how far we can go in modifying human nature. For techno-ontological post-anthropocentrism, it is whether the emergence of "other-than-human" beings—possessing equal or greater intelligence—can be legally permitted. Both challenge the continuity of human ontology.

These questions have gained urgency in recent decades with the advent of biotechnologies, particularly gene editing. The development of CRISPR technology marked both a breakthrough and a source of ethical concern. It introduced the potential for editing the human genome in two distinct contexts: therapeutic gene editing in existing individuals (i.e., patients), and gene editing in embryos or gametes, which affects not only the future individual but potentially all of their descendants. Both therapeutic and enhancement-related applications are at stake.[41]

Gene editing thus raises complex legal questions that bring the transhumanist agenda to the forefront. Legal systems have responded with varying degrees of coherence, attempting to strike a balance between therapeutic and research objectives that align with human dignity. The Declaration on the Human Genome and Human Rights stipulates that any intervention in the human genome must benefit the individual, be conducted with their informed consent, respect human rights, and must not violate human dignity—for instance, through cloning.

While the Declaration prohibits practices that fundamentally contradict natural selection (such as cloning), it does not ban all genetic interventions. The Convention on Human Rights and Biomedicine (Oviedo Convention) further states in Article 13

umano: la questione dell'identità' in Francesco Russo (ed), *Natura cultura libertà* (Armando, Roma 2010) 90.

[39] Gregory Stock, 'Germinal Choice Technology and the Human Future' (2005) 10 Ethics, Law & Moral Philosophy of Reproductive Biomedicine 27, 34

[40] Amar Sharon, *Human Nature in an Age of Biotechnology: The Case for Mediated Posthumanism* (Springer Science & Business Media 2013); Adele E Clarke, Laura Mamo, Jennifer Ruth Fosket, Jennifer R Fishman, and Janet K Shim, *Biomedicalization: Technoscience, Health, and Illness in the U.S.* (Duke University Press 2009).

[41] David Cyranoski, 'The CRISPR-Baby Scandal: What's Next for Human Gene-Editing' (2019) 566 Nature 440.

that “An intervention seeking to modify the human genome may only be undertaken for preventive, diagnostic or therapeutic purposes and only if its aim is not to introduce any modification in the genome of any descendants.”[42]

The 2015 Report of the International Bioethics Committee (IBC) notes that while nature is often seen as a limitation on human freedom, in the context of genome editing, it should rather be viewed as a foundational premise. As the report warns, any deviation from this principle risks reintroducing eugenics under the guise of progress: “Nature is often understood as a limit to human freedom. At least in this case… it should be rather considered as its premise, so that interventions on the human genome should be admitted only for preventive, diagnostic or therapeutic reasons and without enacting modifications for descendants... The alternative would be to jeopardise the inherent and therefore equal dignity of all human beings and renew eugenics, disguised as the fulfilment of the wish for a better, improved life.”[43]

The European Commission’s European Group on Ethics in Science and New Technologies (EGE), an advisory body to the Commission, has expressed strong reservations about gene editing for both clinical and research purposes, citing “the profound potential consequences of this research for humanity.”[44]

Human gene editing has generally been approached with extreme caution by most national legal systems.[45] he degree of restriction varies, from stringent prohibitions in many EU countries to comparatively more flexible frameworks in the United States and China. Even in the latter, however, regulations remain robust.[46]

Notably, the United Kingdom has departed from stricter approaches by legalising “human nuclear genome transfer” (HGNT) to prevent mitochondrial disorders. This shift suggests that the once-solid ban on human genome editing—and, by extension,

[42] Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine (ETS No 164).
[43] International Bioethics Committee, Report of the IBC on Updating Its Reflection on the Human Genome and Human Rights (UNESCO, SHS/YES/IBC-22/15/2 REV.2, Paris, 2 October 2015) para 107.
[44] European Group on Ethics in Science and New Technologies, Statement on Gene Editing <https://ec.europa.eu/research/ege/pdf/gene_editing_ege_statement.pdf> accessed 11 September 2024.
[45] Britta C van Beers, 'Rewriting the Human Genome, Rewriting Human Rights Law? Human Rights, Human Dignity, and Human Germline Modification in the CRISPR Era' (2020) Journal of Law and the Biosciences 1, 3.
[46] Di Zhang and Reidar K Lie, 'Ethical Issues in Human Germline Gene Editing: A Perspective from China' (2018) 36(1–4) Monash Bioethics Review 23.

on altering human nature—has begun to erode.[47] Calls from within the scientific community to further relax such restrictions have also gained momentum.[48]

Most legal systems have sought to strike a balance: allowing gene editing for therapeutic purposes, provided it does not alter the germline genetic identity of humankind. Nature, under this framework, should not be redesigned but merely "healed." Yet the distinction between permissible and impermissible acts—particularly those involving germline modifications—is far from straightforward. The legal controversies surrounding mitochondrial DNA editing illustrate this complexity.[49]

Moreover, the reference to "therapeutic purposes" implies a critical distinction between therapy and enhancement. Article 13 of the Oviedo Convention prohibits heritable genome editing, allowing only interventions for preventive, diagnostic, or therapeutic reasons. Article 14 specifies that medically assisted procreation techniques may not be used to choose a future child's sex, except where serious hereditary, sex-related diseases are to be avoided. According to these provisions, enhancing offspring is prohibited, while healing remains legally permissible.[50]

The line between therapy and enhancement, however, is not easily drawn. The concepts of health and disease are dynamic and deeply influenced by culture. Conditions such as aging and death—once seen as natural or even anthropomorphised—are now increasingly treated as diseases. What was once regarded as luxury or enhancement is now categorised as therapy.[51]

This evolving reality is reflected in the World Health Organization's (WHO) definition of health: "Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity."[52] Based on this definition, a clear, consistent distinction between therapy and enhancement is historically and practically elusive. The infamous, now discredited experiment by Dr. He Jiankui, who

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[47] Samvel Varvastian, 'UK's Legalisation of Mitochondrial Donation in IVF Treatment: A Challenge to the International Community or a Promotion of Life-saving Medical Innovation to Be Followed by Others?' (2015) 22 European Journal of Health Law 405, 424.

[48] European Group on Ethics in Science and New Technologies, Statement on Gene Editing <https://ec.europa.eu/research/ege/pdf/gene_editing_ege_statement.pdf> accessed 11 September 2024; Eric Lander and others, 'Adopt a Moratorium on Heritable Genome Editing' (2019) 567 Nature 165; Federation of European Academies of Medicine, The Application of Genome Editing in Humans (October 2017) <https://www.feam.eu/theapplication-of-genome-editing-in-humans/> accessed 19 July 2019; George Daley, Robin Lovell-Badge, and Julie Steffann, 'After the Storm: A Responsible Path for Genome Editing' (2019) 380 New England Journal of Medicine 897.

[49] Annelien Bredenoord and others, 'Ethics of Modifying the Mitochondrial Genome' (2011) 37 Journal of Medical Ethics 97.

[50] Oviedo Convention, Art. 13 and 14

[51] Frances M Kamm, 'Is There a Problem with Enhancement?' (2005) 5(3) The American Journal of Bioethics 5.

[52] World Health Organization, Constitution <https://www.who.int/about/governance/constitution> accessed 13 September 2024.

attempted to create HIV-resistant babies, underscores how blurred these boundaries have become.[53]

This difficulty has led institutions such as the Nuffield Council on Bioethics to propose alternative guiding principles for genome editing—specifically, the welfare of the future child. This reframing suggests that genome editing should not be limited solely to preventing or treating disease. However, this raises the question: Who determines what constitutes a child's welfare, and how? The boundaries become even more blurred.[54]

The challenge of setting clear, enforceable limits—both theoretically and practically—along with cracks already forming in existing regulatory frameworks, has encouraged more "realistic" approaches. These advocate for regulation that guides and controls, rather than strictly prohibits.[55] Simultaneously, more polarized perspectives are emerging, calling for a complete ban on such technologies.[56]

As technological capabilities grow, it becomes increasingly accepted that we cannot reap the benefits without also facing significant risks. Gene editing, especially when combined with AI, promises novel therapies but also poses risks related to germline alterations, the resurgence of eugenics, and entrenched ontological inequalities within the "human family."[57]

While gene editing alone presents substantial ethical challenges, these are compounded when viewed through the lenses of transhumanism and techno-ontological post-anthropocentrism. Transhumanism extends beyond gene editing to include the integration of humans and machines—a gradual "cyborg-isation" of the human body. Techno-ontological post-anthropocentrism entertains visions of transhumans as the new dominant form of life, AI as the leading intelligence, or even the full digitisation of the human mind. This raises not only ethical and legal questions but species-level concerns.

To determine what should be legally permissible, both concepts should be evaluated from three perspectives: the individual, the societal, and the species-based. Legal anthropocentrism, as reflected in international treaties, relies on a synthesis of these

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[53] Eric T Juengst, 'Crowdsourcing the Moral Limits of Human Gene Editing?' (2017) 47(3) Hastings Center Report 15, 21; Antonio Regalado, 'China's CRISPR Twins Might Have Had Their Brains Inadvertently Enhanced' MIT Technology Review (21 February 2019).

[54] Nuffield Council on Bioethics, 'Genome Editing and Human Reproduction: Social and Ethical Issues' (2018), 91-92.

[55] Robin Alta Charo, 'Rogues and Regulation of Germline Editing' (2019) 380 New England Journal of Medicine 976; Britta van Beers, 'Is Europe 'Giving in to Baby Markets'? Reproductive Tourism in Europe and the Gradual Erosion of Existing Legal Limits to Reproductive Markets' (2015) 23 Medical Law Review 103; Robin Alta Charo, 'Germline Engineering and Human Rights' (2018) 112 AJIL Unbound 344.

[56] Edward Lanphier and others, 'Do Not Edit the Human Germline' (2015) 519 Nature 411.

[57] Report of the IBC on Updating Its Reflection on the Human Genome and Human Rights, UNESCO, SHS/YES/IBC-22/15/2 REV.2 (Paris, 2 October 2015) paras 103-108.

three perspectives. The UDHR, the ECHR, and similar texts are grounded in a species-based assumption, which is then extended to individual and social rights. The Explanatory Report of the Oviedo Convention and UNESCO's International Bioethics Committee echo this position, asserting that ethics is not merely a matter of individual morality but must also serve the common good: "ethics is not simply a matter of individual morality but it involves society as a whole' and 'must therefore also pursue the common good."[58]

This threefold framework helps clarify what legal anthropocentrism—particularly through the lens of human rights and dignity—requires in assessing both transhumanism and techno-ontological post-anthropocentrism, and in determining the boundaries between therapy and enhancement. A key distinction must be made between transhumanism as the enhancement of humans—potentially creating ultra-humans—and techno-ontological post-anthropocentrism, which implies the replacement of human dominance by "other-than-human" entities. In the former, legal inquiry focuses on the scope of permissible enhancement. In the latter, it concerns the permissibility of human substitution or extinction.

The concept common to both is enhancement. Human enhancement is not new. Throughout history, humans have sought to improve themselves—from prayer and education to exercise, pharmaceuticals, eyeglasses, and prosthetics.

As Eric Juengst and Daniel Moseley have noted, the same technologies can serve both therapeutic and enhancement purposes depending on their application.[59] Given the WHO's definition of health as a state of complete physical, mental, and social wellbeing, the theoretical distinction between therapy and enhancement becomes practically untenable. While concepts like health and wellbeing may be culturally shaped, they are not arbitrary. Their interpretation should be guided by a combination of medical expertise, research, law, and the evolving "social contract" between individuals and governments.

Enhancement is typically defined as "biomedical interventions that are used to improve human form or functioning beyond what is necessary to restore or sustain health." To this definition, we should add the use of artificial intelligence and robotics.[60] Yet even this expanded definition risks being misleading if it treats health merely as the absence of disease. According to the WHO Constitution, health includes wellbeing. Under such a framework, true enhancement must promote wellbeing—not merely eccentricity or aesthetic preference. A more precise definition might be: "Enhancement refers to biomedical, AI, and robotic interventions used to improve

[58] International Bioethics Committee, Report of the IBC on Updating Its Reflection on the Human Genome and Human Rights, UNESCO, SHS/YES/IBC-22/15/2 REV.2 (Paris, 2 October 2015) para 30.
[59] Eric Juengst and Daniel Moseley, 'Human Enhancement' in Edward N Zalta (ed), *The Stanford Encyclopedia of Philosophy* (Summer 2019 Edition) <https://plato.stanford.edu/archives/sum2019/entries/enhancement/>.
[60] Ibid.

human form or function beyond what is necessary to address the absence of disease or infirmity."

When enhancement and therapy coincide in furtherance of eliminating disease or infirmity, the standard—albeit often ambiguous—norms of medical deontology apply.[61] However, when enhancement lies outside this goal, existing norms must be reinterpreted to assess its legal permissibility. It should be emphasised that this article does not aim to contribute to philosophical discourse in general, but rather to the field of law. This distinction highlights an important point: law presupposes a shared human nature among all individuals—members of the human family—from which all rights and dignity are derived.

From the perspective of an adult individual, there is no inherent reason to prohibit the pursuit of enhancement techniques, provided these interventions cause no harm and the individual receives adequate information about their consequences. Providers—whether doctors, private companies, state bodies, or other experts—must also evaluate whether responding positively to such requests is ethically justified.

Consider a hypothetical scenario in which "Super-Olympics" are organised, where all athletes have equal access to doping—be it pharmaceutical, genetic, or other.[62] Suppose all participants are informed adults, aware of the long-term health risks, and still opt to undergo such enhancement. In this case, their will appears free and mature. Nevertheless, the potential health risks should constrain experts from administering such enhancements. If no health risk exists, then, in principle, there is no legal reason to prohibit them, aside from possible regulations specific to the domain of competitive sports.

From the societal perspective, the key criterion is social cohesion. If enhancement technologies are accessible only to a select few, social inequalities may quickly evolve into ontological inequalities, undermining the foundational legal principle of relative human equality. Thus, a social right ensuring equal and universal access to enhancement technologies is essential. From both individual and social viewpoints, there is no intrinsic anthropocentric rationale for denying futures that include extended health and lifespan, provided inequalities are addressed. Moreover, enhancement should not threaten the foundations of law, fundamental rights, norms, and protections for all members of society.[63]

Take, for instance, a hypothetical scenario involving a mind-reading implant. Even if such a device has no side effects and is universally accessible, it would destroy core

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[61] This is also a theme that requires extensive analysis but evades the scope of this article.

[62] Christian Munthe, 'Selected Champions: Making Winners in the Age of Genetic Technology' in Torbjorn Tännsjö and Claudio Tamburrine (eds), *Values in Sport: Elitism, Nationalism, Gender Equality and the Scientific Manufacture of Winners* (Routledge 2000) 217-231.

[63] Peter Bloom, 'Legal Reboot: From Human Control to Transhuman Possibilities' in Peter Bloom (ed), *Identity, Institutions and Governance in an AI World: Transhuman Relations* (Springer International Publishing 2020) <https://doi.org/10.1007/978-3-030-36181-5_7>.

aspects of privacy, violate key legal norms, and disrupt social cohesion. Or consider telekinetic implants—currently in early stages and limited to patients with paralysis. If healthy individuals were to request such enhancements, how could we trace responsibility for physical consequences in the world? These examples show that enhancement must be evaluated in light of legal norms and social consequences.

The third perspective raises the most complicated issues as it refers to the human species and therefore to human nature. The species-level perspective presents the most complex set of issues, as it relates directly to human nature. This perspective is challenging because it spans multiple time scales and intersecting variables. While the law references "human nature" and the "human family," it does not explicitly define the human species. We must deduce what law deems essential to human specieshood through indirect references.

Law assumes a unified human nature that binds us all. While it operates through abstractions and legal fictions, it does not treat human nature as immutable. Even under the law, human nature is subject to change—gene editing, for instance, may be permitted in some cases. So, is it possible to evaluate the legitimacy of enhancement from a species perspective?[64]

Several distinctions are crucial. One is between embryos and born persons—primarily adults. In the case of embryos, there is no autonomous subject capable of assessing its own wellbeing, which is essential to health. Thus, enhancement for embryos is inadmissible. Only disease prevention or therapeutic interventions, based on existing research, may be allowed. Admittedly, our knowledge remains incomplete. What benefits one generation may harm another. Nonetheless, this is a risk we must accept based on current scientific understanding.

Matters differ when parents, corporations, or states decide to alter non-pathological characteristics of embryos, thereby designing the future individual in whole or in part. In such cases, the beliefs of others about wellbeing are imposed on the unborn, turning them into objects.

As previously discussed, replacing natural selection with human design is a central concern in post-anthropocentric discourse. John Harris, for instance, defends this shift by stating: "If the goal of enhanced intelligence, increased powers and capacities, and better health is something that we might strive to produce through education [...] why should we not produce these goals, if we can do it safely, through enhancement technologies or procedures?"[65]

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[64] Jason Scott Robert and Françoise Baylis, 'Crossing Species Boundaries' (2003) 3(3) The American Journal of Bioethics 1-14.

[65] John Harris, *Enhancing Evolution: The Ethical Case for Making Better People* (Princeton University Press 2007) 2.

Advocates of human design often consider human dignity to be either a metaphysical abstraction or insufficiently defined in terms of its normative implications.[66] Dignity, in this view, is not the ultimate end. As Nick Bostrom asserts: "Transhumanists […] see human and posthuman dignity as compatible and complementary. What we are is not a function solely of our DNA but also of our technological and social context. Human nature in this broader sense is dynamic, partially human made, and improvable."[67]

Bostrom's perspective is not entirely incorrect. We are more than our DNA. However, such views are often invoked to justify limiting human freedom and autonomy, especially at the prenatal stage. The imposition of someone else's will during the design process subjugates the future person. Human freedom and autonomy are central to dignity across individual, social, and species dimensions. Even posthuman dignity, to be meaningful, must rest on autonomy. Autonomy requires that no human be treated merely as a means—especially at the most vulnerable stages of existence.

Indeed, all children experience limitations during upbringing. The boundary between biology and social influence—education, for instance—is fluid. Still, this is very different from conflating biological and social formation, or suggesting that children can be biologically predetermined as they are socially guided. This logic risks reducing future humans to pre-designed servants of their predecessors.

These concerns are echoed in the Council of Europe's Convention on Human Rights and Biomedicine (1997) and UNESCO's Declaration on the Human Genome and Human Rights (1997). Both prohibit reproductive technologies aimed at enhancement, including genetic modification or sex-based selection of offspring, regardless of parental preference. These provisions affirm the link between human dignity, human rights, and the preservation of anthropocentric legal systems rooted in the homo sapiens framework.[68]

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[66] Oktawian Nawrot, 'The Biogenetical Revolution of the Council of Europe - Twenty Years of the Convention on Human Rights and Biomedicine (Oviedo Convention)' (2018) 14:11 Life Sciences, Society and Policy 10; Timothy Caulfield and Roger Brownsword, 'Human Dignity: A Guide to Policy Making in the Biotechnology Era?' (2006) 7(1) Nature Reviews Genetics 72–6.

[67] Nick Bostrom, 'In Defense of Posthuman Dignity' (2005) 19(3) Bioethics 202, 213.

[68] The treaty allows genetic engineering only for preventive, diagnostic or therapeutic reasons and only where it does not aim to change the genetic make-up of a person's descendants. It prohibits the use of techniques of medically assisted procreation to help choose the sex of a child, except where it would avoid a serious hereditary condition.
Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine (ETS No 164); Britta van Beers, 'A Better Way of Being? Human Rights, Transhumanism and 'The Utopian Standpoint of Man' in Bart van Klink , Marta Soniewicka, and Leon van den Broeke (eds.), *Utopian Thinking in Law, Politics, Architecture and Technology* (Elgar, 2022), 254; explanatory Report to the Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine paras 14 and 15.

For adults, however, the scope of permissible enhancement differs. We know our genes are shaped by multiple factors. Even socio-economic systems—such as capitalism—impact gene expression through stress and lifestyle. Yet not all interventions are equal. There is little justification for prohibiting modifications to genes associated with cancer or aging. Dramatically extending average lifespan to 125 years would mark a major shift, but humanity has already adjusted to increased longevity without losing its species identity. Likewise, exoskeletons or implants that modestly boost IQ may raise legal questions but do not threaten human nature itself.

To assess which enhancements might challenge anthropocentric legal systems, we must revisit the foundations of legal anthropocentrism: reliance on natural selection (i.e., opposition to heterodetermination by others), maintenance of the human/"other-than-human" binary, and recognition of humans' superior intelligence as the basis for legal personality.

As mentioned before, these are the prevalence of natural selection in the sense of preventing a situation of complete heterodetermination of future humans by their predecessors, the binary distinction between human and "other-than-human" and the dominion of the legal personality of humans, over all other beings because of humans' superior intelligence.

From a species perspective, enhancements must not create uncertainty about whether the subject remains human. Such ambiguity would render legal systems ineffective. Maintaining the human/"other-than-human" binary is essential.

Enhancements that may give rise to a new, less-human species—such as highly robotic cyborgs—or to AI with equal or superior intelligence, would challenge human legal primacy. Current legal systems have never confronted this. Human legal personality sits atop the legal hierarchy in anthropocentric frameworks. Introducing "superior" AI or cyborgs would plunge us into ontological terra incognita and extreme legal uncertainty. In the world of techno-ontological post-anthropocentrism, the legal and ontological dominance of humans would vanish—leaving law, as we know it, unprepared.

This transformation will not happen overnight. The boundary between legal anthropocentrism and post-anthropocentrism will blur gradually, in both theory and practice.[69] This makes it all the more crucial for the law to distinguish between enhancement that reinforces anthropocentrism and changes that negate human legal dominion.[70] Thus, overturning the human/"other-than-human" binary or the dominance of human legal personality would not merely breach specific laws—it would dismantle the very foundation of legal anthropocentrism.

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[69] Neil Kessler, *Ontology and Closeness in Human-Nature Relationships: Beyond Dualisms, Materialism and Posthumanism* (Springer 2018).

[70] Obviously there is a level of legal abstraction in all such distinctions.

In sum, while enhancement aligned with free will and conducted within legal limits is acceptable, enhancements that violate natural selection, erase the human/"other-than-human" distinction, or compromise human superiority are not. Early-stage transhumanism may be legally defensible, but any form of it that progresses toward techno-ontological post-anthropocentrism contradicts the principles upon which legal systems are based.

Some may challenge this anthropocentric "obsession" as biological reductionism. Why must the dominance of homo sapiens persist? Could we not envision legal coexistence with other species, guided by Gray's "Cyborg Bill of Rights," Gunkel's "robot rights," or a broader framework of digital or cyborg integration?[71] Indeed, many transhumanists advocate for a species leap as a means of transcending humanity's destructive tendencies. Julian Savulescu's notion of "moral enhancement," for instance, seeks to protect civilisation from itself. A radically democratic process might even allow humanity to choose its own transformation—or its absorption by a superior species.[72]

To address this, consider not the more straightforward issue of replacing natural selection with human design, but the more profound one: digital immortality. The digitalisation of human consciousness is the "Holy Grail"—or one of them—of transhumanist and post-anthropocentric visions.[73]

Besides whatever oversimplifications this promise entails—some of which may eventually be overcome through technological innovations—it remains a fascinating concept. Yet, the closer we approach it, the more elusive it seems to become.

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[71] Chris Hables Gray, 'The Ethics and Politics of Cyborg Embodiment: Citizenship as a Hypervalue' (1997) 1(2) Cultural Values 252–258; David Gunkel, *Robot Rights* (MIT Press 2018); Leopoldina Fortunati, *The Human Body: Natural and Artificial Technology' in Machines That Become Us* (Routledge 2017) 71–87; Christian Godin, 'What Would Human Rights with the Posthuman Become?' (2018) 29(3) Journal International de Bioéthique et d'Éthique des Sciences 154.

[72] Julian Savulescu, *Unfit for the Future: The Need for Moral Enhancement* (Oxford University Press 2012); Peter Sloterdijk, 'Rules for the Human Zoo: A Response to the Letter on Humanism' (2009) 27(1) Environment and Planning D: Society and Space 12, 20; Sheila Jasanoff, J Benjamin Hurlbut and Krishanu Saha, 'CRISPR Democracy: Gene Editing and the Need for Inclusive Deliberation' (2015) 32 Issues in Science and Technology 25; Donna Dickenson, *Me Medicine vs We Medicine: Reclaiming Biotechnology for the Common Good* (Columbia University Press 2013).

[73] Carla J Sofka, Allison Gibson and Danielle R Silberman, 'Digital Immortality or Digital Death? Contemplating Digital End-of-Life Planning' in Michael Hviid Jacobsen (ed), *Postmortal Society* (Routledge 2016).

This is also a case of "reductionism". For a certain part this is optimistic, as a shortcut to immortality, whereas for others deeply worrying. Harari is one of the many who deliver a pessimistic for humanism and anthropocentrism prediction: "The rise of humanism also contains the seeds of its downfall. While the attempt to upgrade into gods takes humanism to its logical conclusion, it simultaneously exposes humanism's inherent flaws." Yuval Noah Harari, *Homo Deus: A Brief History of Tomorrow* (Penguin 2016) 65.

The first issue lies in defining immortality itself. From a distance, the concept is easy to grasp, but its practical realisation reveals deep complexities. According to the Encyclopedia Britannica, "The term immortal has been used in a wide general sense for everlasting, as the writings of Plato, the plays of Shakespeare, the music of Mozart are immortals. But in its chief use the term immortality has referenced a continuity of people's spiritual existence after the death of their bodies."[74] It has also been described as the indefinite continuation of a being, free from death or destruction. Some interpretations center on one's legacy, while others emphasise the survival of consciousness.[75]

The deeper issue is that we lack a complete understanding of consciousness itself. Even if all technical challenges of mind uploading were resolved—even if we agreed that immortality entails the survival of consciousness—we would still be unsure of what consciousness actually is. By the time a digitalised human appears, we may not be able to determine if it is truly the same person, or even a person at all, nor whether it possesses autonomy or is merely an imitation. We are lacking both scientific certainty and ontological clarity.[76]

The transhumanist pursuit of immortality relies on technological means, but it essentially invokes a kind of theological faith. Regardless of feasibility, it is predicated on the reduction of all biological and cellular systems to interactions between cells, genes, and chemicals—assumed to be transferable to a non-organic substrate.[77]

Still, the quest for immortality is deeply human and universal. From symbolic and theological promises to biological and technological pursuits, the drive to overcome death is inherently anthropocentric. The classification of aging as a disease underscores the human desire to confront and cure mortality itself. Nothing is more anthropocentric than the pursuit of immortality. To prohibit such efforts outright would be absurd. Technology offers a comforting promise: the end of the ephemeral. The problem lies not in the goal, but in the method.[78]

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[74] Encyclopedia Britannica, Encyclopedia Britannica <https://www.britannica.com/> accessed 24 February 2018.
[75] Simon Blackburn, *The Oxford Dictionary of Philosophy* (2nd edn, OUP Oxford 2005) 188-189.
[76] In fact, the question about digital immortality is part of the wider discussion about digital human and digital humanism. Mark Coeckelbergh, 'What is Digital Humanism? A Conceptual Analysis and an Argument for a More Critical and Political Digital (Post)Humanism' (2024) 17 Journal of Responsible Technology 1-4.
[77] Jenny Huberman, 'Immortality Transformed: Mind Cloning, Transhumanism and the Quest for Digital Immortality' (2018) 23(1) Mortality 50–64; Sachin Rawat, 'Transhumanism: Savior of Humanity or False Prophecy?' Big Think (27 July 2022) <https://bigthink.com/the-future/transhumanism-savior-humanity-false-prophecy/> accessed 18 May 2024.
[78] Carla Sofka and others 'Digital Immortality or Digital Death? Contemplating Digital End-of-Life Planning' in Michael Hviid Jacobsen (ed), *Postmortal Society: Towards a Sociology of Immortality* (Routledge 2017) 173-174; Abigail Sellen, Yvonne Rogers, Richard Harper and Tom Rodden, 'Reflecting Human Values in the Digital Age' (2009) 52(3) Communications of the ACM 58–66.

Attempts to dissect human consciousness—without fully understanding it—and to upload, simulate, or emulate it raise questions: are we creating a digital legacy or digital immortality, and what kind of being is produced? Such developments violate the principles of legal anthropocentrism and legal certainty. They could range from fraudulent to profoundly unethical.[79]

By contrast, the gradual replacement of body parts with prosthetics or non-organic materials—including parts of the brain—is fundamentally different from digitising and uploading the mind. A person who replaces a hand with a prosthetic remains ontologically the same. But what if they significantly increase their IQ? Or replace part of their brain? Embodied presence in the natural world maintains a sense of legal and ontological continuity. Disembodied consciousness, however—even if temporary—presents a condition foreign to our anthropocentric legal systems.

Thus, the break from legal anthropocentrism is found not so much in the goal—some form of immortality—but in the means, particularly the detachment of humans from the natural world. This example helps us revisit the argument for a collective leap into post-anthropocentrism. Jürgen Habermas counters this view by appealing to a "supra-individual" belief in our common species identity. His perspective helps explain why species protection—especially our own—is deeply embedded in legal systems.[80]

Calling for a rejection of legal anthropocentrism is a call for a leap into ontological and legal uncertainty. When such transformations are applied prenatally through human design, they represent a profound violation of dignity and autonomy. When they are attempted postnatally, they raise the specter of the human family's dissolution—or of

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[79] Vinícius Ferreira Galvão and others, 'Discussing Human Values in Digital Immortality: Towards a Value-Oriented Perspective' (2021) 27(15) Journal of the Brazilian Computer Society 2.
Digital legacy mostly refers to documents, music, photos, playlists, visualisation history, social network profiles, hardware. Angela Crocker and Vicki McLeod, *Digital Legacy Plan: A Guide to the Personal and Practical Elements of Your Digital Life Before You Die* (Self-Counsel Press 2019) 51-70.

[80] Jürgen Habermas, *Przyszłość natury ludzkiej. Czy zmierzamy do eugeniki liberalnej?* (Małgorzata Lukasiewicz tr, Wydawnictwo Naukowe Scholar 2003).
It is in UNESCO 's documents that reference is made both to "common human destiny grounded on the essential values of mankind" as a benchmark for the assessment of such potential developments, as well as to the need for international coordination through the human rights' norms of international law.
Federico Mayor, 'Preface' in Proceedings of the First Session of the IBC (UNESCO 1994).
Roberto Andorno, 'Biomedicine and International Human Rights Law: In Search of a Global Consensus' (2002) 80(12) WHO Bulletin 959-963.
Explanatory Report to the Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Explanatory Report to the Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine, para 19.
Vo v France App no 53924/00 (ECtHR, 8 July 2004), para 84.

realities that defy ontological and legal comprehension. Such conditions are fundamentally incompatible with law.[81]

The substitution of natural selection with human design constitutes a profound objectification—one human imposing form and function on another. This marks the boundary between lawful enhancement within anthropocentrism and unlawful ventures into post-anthropocentrism. While prenatal interventions to prevent disease may be lawful, human design that prefigures biological inequalities objectifies future persons, undermines autonomy and dignity, and produces beings that are only phenomenologically human.

Therefore, the article's main conclusion is that enhancement, in principle, is lawful—and some aspects of transhumanism fall within these bounds. However, techno-ontological post-anthropocentrism, as well as transhumanism that advances non-binary relationships between humans and "other-than-human" entities, or promotes human design and absorption by post-anthropocentric forces, falls outside the scope of law.[82] Given the incremental rise of these technologies, there is a growing need for an international treaty addressing techno-biological developments through the lens of human rights. Such a treaty must include a scale of risk assessment and clarify the legal implications of enhancement from individual, social, and species perspectives.

5. Conclusions

Public discourse is increasingly focused on the prospects—and perils—of a techno-ontological, post-anthropocentric future. These concerns primarily center on artificial intelligence but also extend to digitalized human consciousness and other non-human entities.

As early as 1990, Marek Safjan's thesis, The Law in View of Intervention in the Nature of Human Procreation, captured the essence of this dilemma: "The question really comes down to whether the law, given the bitterness of the conflict and the dramatic contrast of the arguments being put forward, is really in a position to find its own solutions in this regard whilst not becoming entangled in deep contradiction and not

[81] Explanatory Report to the Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine, para 22.

[82] Themistoklis Tzimas, 'Algorithmic Transparency and Explainability under EU Law' (2023) 29 European Public Law Issue 4, 385-411; Themistoklis Tzimas, 'Artificial Intelligence and Human Rights: Their Role in the Evolution of AI' (2020) 80 Heidelberg Journal of International Law 1-25; Chris Johnson, 'The Increasing Risks of Risk Assessment: On the Rise of Artificial Intelligence and Non-Determinism in Safety-Critical Systems', <https://www.dcs.gla.ac.uk/~johnson/papers/SCSC_18.pdf>, accessed 26 April 2025; Jay Wang and others, 'Probabilistic Risk Assessment: A Look at the Role of Artificial Intelligence' (1988) 106(3) Nuclear Engineering and Design 375, 375-387.

dismissing those fundamental, basic values which were at the root of the regulations in question and which are the result of centuries of tradition and of evolution".[83]

This article's central claim is that existing legal systems are unequipped to address the realities of techno-ontological post-anthropocentrism and currently lack an international framework to assess and govern such risks. The path to post-anthropocentrism raises complex questions that remain largely unanswered: the subjective experience of emerging post-anthropocentric entities, the transitional stages from consciousness simulation to autonomous consciousness, the possibility of disembodied dignity, and the criteria for legal personhood in non-human intelligent agents. If such agents gain legal recognition, what would terms like "harm," "rights," "freedom," "responsibility," "self," or even "law" mean to them? How would law be experienced by cyborgs, enhanced humans with telekinetic capacities, or digitalised, potentially immortal, post-humans?[84]

This is a global challenge unfolding simultaneously in both the physical and digital realms. An international legal treaty is urgently needed to prepare for unpredictable developments—including "known unknowns" and "unknown unknowns." Toward this end, this article proposes a fundamental legal principle: distinguishing permissible "human-enhancement-in-anthropocentrism"—a restrained form of early-stage transhumanism—from transitions to post-anthropocentrism, which should be proscribed. The basis for this distinction lies in the continued primacy of natural selection (allowing modifications only to avoid disease), the preservation of the human/"other-than-human" binary, and the maintenance of human legal dominance. Otherwise, we do not simply risk violating legal norms—we risk entering an era of uncertainty and incomprehensibility, and perhaps the most lawless chapter of human history.[85]

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[83] Marek Safjan, *Prawo wobec ingerencji w naturę ludzkiej prokreacji* (Univwersytet Warszawski Wydział Prawa i Administracji 1990).

[84] Catherine Waldby, *The Visible Human Project: Informatic Bodies and Posthuman Medicine* (Routledge 2003); Brendan Keogh, 'Cybernetic memory and the construction of the posthuman self in videogame play' in Weiss, D M, Propen, A D, & Emmerson Reid, C (eds.), *Design, mediation, and the posthuman* (Lexington Books 2014), 233-247; Stelarc, 'From Psycho-body to Cyber-systems: Images as Post-human Entities' in David Bell and Barbara Kennedy (eds), *The Cybercultures Reader* (Psychology Press 2000) 560-576; Andrew Pickering, 'Practice and Posthumanism: Social Theory and a History of Agency' in Karin Knorr Cetina, Theodore R. Schatzki, Eike von Savigny (eds), *The Practice Turn in Contemporary Theory* (Routledge 2001) 163-174.

[85] For such analyses, see: Bostrom (n 67) 214; Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Profile Books 2003); Robert Pepperell, *The Posthuman Condition: Consciousness Beyond the Brain* (3rd edn, Intellect Books 2003); Leon Kass, 'Ageless Bodies, Happy Souls. Biotechnology and the Pursuit of Perfection' (2003) 1 The New Atlantis 9, 12; Donna Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (Free Association Books 1991); Bruce Mazlish, *The Fourth Discontinuity* (Yale University Press 1993) 44.