

# TRANSHUMANISM: MORALITY AND LAW AT THE FRONTIER OF THE HUMAN CONDITION

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## INTRODUCTION

“If you ask me today, is it possible to live to be 500? The answer is yes,” opined Bill Maris, founder of Google Ventures.<sup>1</sup> Three years later, Aubrey de Grey, a prominent biomedical researcher, astonishingly claimed that “‘people in middle age now have a fair chance’ of never dying.”<sup>2</sup> Maris and Grey are two advocates of a biological and technological movement captioned as transhumanism.<sup>3</sup> It is described as the “belief or theory that the human race can evolve beyond its current physical and mental limitations, especially by means of science and technology.”<sup>4</sup>

Transhumanism, in its more extreme varieties, “advocates using science and technology for a reconstruction of the human condition sufficiently radical to call into question the appropriateness of calling it ‘human’ anymore.”<sup>5</sup> Transhumanism has also been defined as “a way of thinking about the future that is based on the premise that the human species in its current form does not represent the end of our development but rather a comparatively early phase.”<sup>6</sup> The word conjures the iconography of science fiction and Hollywood

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1. Adam Kirsch, *Looking Forward to the End of Humanity*, WALL ST. J. (Jun. 20, 2020, 12:01 AM), <https://www.wsj.com/articles/looking-forward-to-the-end-of-humanity-11592625661>.

2. *Id.*

3. *Id.*

4. *Transhumanism*, OXFORD DICTIONARY OF ENGLISH (3d ed. 2015).

5. Charles T. Rubin, *What is the Good of Transhumanism?*, in *MEDICAL ENHANCEMENT AND POSTHUMANITY* 131, 131 (Bert Gordijn & Ruth Chadwick eds., 2008).

6. Nick Bostrom, *Introduction – The Transhumanist FAQ: A General Introduction*, in *TRANSHUMANISM AND THE BODY* 1, 1 (Calvin Mercer & Derek F. Maher eds., 2014); *see also* Anne Hendershott, *From Transgender to Transhuman: The Expanding Culture of Death*, CATH. WORLD REP. (Feb. 12, 2021), <https://www.catholicworldreport.com/2021/02/12/from-transgender-to-transhuman-the-expanding-culture-of-death/> (“[T]ranshumanism is the belief that we can and should transcend human limitations.”).

blockbusters, but its implications are both tangible and timely.<sup>7</sup> In the immediate future, the practical and commercial effects of transhumanism will likely be therapeutic—for example, ameliorating physical impairments.<sup>8</sup> Yet self-styled technocrats and Silicon Valley billionaires are already championing an extreme variant of transhumanism, termed “posthumanism,” which contemptuously disdains man’s corporeal form and his attendant qualities as antiquated baggage to be jettisoned at the earlier juncture.<sup>9</sup>

To illustrate, one example of posthumanism is the burgeoning xenofeminist movement.<sup>10</sup> Xenofeminism aims to eradicate sex—one of the most fundamental and indelible aspects of the human condition<sup>11</sup>—through technology; this is necessary to combat, its proponents aver, undesirable structural inequities between men and women.<sup>12</sup> Moderated transhumanism, especially in its therapeutic applications, does not seek to degrade the human body in this way; rather, its supporters merely seek to employ technology to manifest the highest standard of living possible without altering the fundamental attributes of the human body.<sup>13</sup>

In the interest of concision, the remainder of this Note tightens its focus to a limited form of transhumanism—as opposed to the extremities of posthumanism—by exploring the confluence of certain biomedical therapies as distinguished from so-called enhancements. Later in this Note, I further

7. See generally William Grassie & Gregory R. Hansell, *Introduction*, in *H+/-: TRANSHUMANISM AND ITS CRITICS* 13, 14 (Gregory R. Hansell & William Grassie eds., 2011) (“The debate about transhumanism is an extremely fruitful field for philosophical and theological inquiry.”).

8. The dichotomy between therapeutic and enhancement applications of transhumanist technology is discussed in Part III below; for now, it is sufficient for the reader to recognize there is a spectrum between those technologies which seek to maintain the basic human form (therapeutics), those which endeavor to expand it (enhancements), and those which intend to supplant it altogether with an as-of-yet unrealized non-corporeal form (posthumanism).

9. Nick Bostrom, *Why I Want to be a Posthuman When I Grow Up*, in *MEDICAL ENHANCEMENT AND POSTHUMANITY*, *supra* note 6, at 7, 107 (“I shall define a posthuman as a being that has at least one posthuman capacity. By a posthuman capacity, I mean a general central capacity *greatly exceeding* the maximum attainable by any current human being without recourse to new technological means.”) (emphasis both added and omitted).

10. Lidia Zuin, *Xenofeminism Aims to Abolish Gender Through Technology*, *MEDIUM* (Feb. 2, 2021), <https://lidiazuin.medium.com/xenofeminism-aims-to-abolish-gender-through-technology-e6abfde4498c>.

11. See generally Edward O. Wilson, *Sociobiology: Sex and Human Nature*, 3 *WILSON Q.* 92, 92 (1979) (“Sex, of course, permeates every aspect of our existence.”) (adopting Wilson’s claim “that sex is *not* designed primarily for reproduction” is not necessary to accept his contention that sex is one of a handful of zeroth-level characteristics of human existence).

12. Zuin, *supra* note 10 (“In the case of xenofeminism, however, it goes even further: it is all about creating an abundance of genders that the very idea of gender becomes absurd and thus grows obsolete.”).

13. A. I. Kriman, *The Idea of the Posthuman: A Comparative Analysis of Transhumanism and Posthumanism*, 62 *RUSSIAN J. PHIL. SCI.* 132, 132 (2019) (distinguishing generally between transhumanism and posthumanism).

granulize this distinction: between those therapies which operate within the narrow range of existing human capability and those exotic enhancements which seek to aggrandize the range of natural human capability into a new realm. This dichotomy forms the basis of the moral argument posited in Part III. Legal scholars have already trumpeted warnings on this therapeutic-enhancement continuum in myriad contexts of social justice, inequities in access to education and healthcare, and even employment opportunities.<sup>14</sup>

While the convergence of science, philosophy, and law is hardly new territory, there is a relative dearth of case law on the topic of transhumanism; it does not fit neatly into the confines of natural or positive law.<sup>15</sup> Yet the absence of law on the topic is not indicative of its impracticability or irrelevance; instead, it might be characterized as the calm before the deluge.<sup>16</sup> Few subjects will shape legal thinking and societal discourse in the twenty-first century to the extent of transhumanism.<sup>17</sup> Its development—technological, philosophical, and moral—will impact legal practitioners and laypersons alike.<sup>18</sup> Its consequences are both prosaic and profound.<sup>19</sup> The prosaic consequences are readily observed in the buzzing distractions created by now-ubiquitous wearable appliances like the Apple Watch, while its profound implications underpin the metaphysical and legal constructs of personhood, discussed at length in Part II below.<sup>20</sup>

The objective of this Note is not to embark upon a Homeric odyssey of every philosophical and legal facet of bioethics or to assemble a comprehensive directory of current and future transhumanist technology; such a catalog would form a voluminous tome spanning “artificial intelligence . . . molecular biology, nanotechnology, genetic [enhancement]” and several other

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14. See generally Lisa C. Ikemoto, *Race to Health: Racialized Discourses in a Transhuman World*, 9 DEPAUL J. HEALTH CARE L. 1101, 1102 (2005); see also Konrad S. Lee & David W. Read, *Technology-Enhanced Employees and the Americans with Disabilities Act*, 18 J. HIGH TECH. L. 238, 239–40 (2018).

15. Kamil Muzyka, *Transhumanism and Law*, INST. FOR ETHICS & EMERGING TECH. (Oct. 16, 2014), <https://ieet.org/archived/index.php/IEET2/more/muzyka20141016> (“In its current state of legal advocacy, transhumanism does not exactly fit into either of these categories, representing an amalgamation of the two.”).

16. *Id.*

17. *Id.*

18. See generally RAY KURZWEIL, *THE SINGULARITY IS NEAR: WHEN HUMANS TRANSCEND BIOLOGY* 7 (2006) (“[T]his impending Singularity in our future is increasingly transforming every institution and aspect of human life, from sexuality to spirituality.”).

19. *Id.*

20. See *id.* at 8 (“[W]ithin several decades information-based technologies will encompass all human knowledge and proficiency, ultimately including the pattern recognition powers, problem-solving skills, and emotional and moral intelligence of the human brain itself.”).

scientific spheres.<sup>21</sup> Nor is it an attempt to forecast the conceivable impacts of transhumanism on every field of law. That undertaking would be cumbersome not only for its length but also for its inaccessibility to all but the most technically disposed. That endeavor would also suffer from obsolescence shortly after publication, given the logarithmic cadence of technological change.<sup>22</sup>

Consequently, in the twin interests of brevity and approachability, this Note will further constrain its study to an examination of a handful of emerging technologies under the larger umbrella of transhumanism with the narrow purpose of acquainting the reader with what may be the most important and enduring legal dilemma: personhood.<sup>23</sup> In the interest of longevity, this Note will emphasize the theoretical and conceptual legal pillars upon which future developments in the arena are likely to rest by citing to the development of antecedent technologies in the twentieth century and some of their effects on the legal landscape. Finally, this Note will stake a claim on the morality *vel non* of transhumanism and impart an urgent call to action for legal practitioners: (1) to advocate for the development of moral, self-consistent jurisprudence; (2) to avoid future circuit splits; and (3) to avert the irreparable societal fractures created by abortion case law and other divisive subjects in decades past.<sup>24</sup>

As with any nascent technology, the most transformative applications and pressing legal conundrums have not yet been conceived and are exceedingly difficult to predict with any degree of specificity.<sup>25</sup> This difficulty is

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21. Hava Tirosh-Samuelson, *Engaging Transhumanism*, in H+/-: TRANSHUMANISM AND ITS CRITICS, *supra* note 7, at 19 (“The new technologies allow for new kinds of cognitive tools that combine artificial intelligence with interface technology, molecular biology, nanotechnology, genetic enhancing of human mental and physical capacities, combating diseases and slowing down the process of aging, and exercising control over desires, moods, and mental states.”); *see also* Walter Isaacson, *What Gene Editing Can Do for Humankind*, WALL ST. J. (Feb. 19, 2021, 10:58 AM), <https://www.wsj.com/articles/what-gene-editing-can-do-for-humankind-11613750317> (“Our newfound ability to edit our own genes raises fascinating—and troubling—questions. Should we alter our species to make humanity less susceptible to deadly viruses?”).

22. KURZWEIL, *supra* note 18, at 7 (“The key idea underlying the impending Singularity is that the pace of change of our human-created technology is accelerating and its powers are expanding at an exponential pace.”).

23. *Transhumanism: Mankind’s Greatest Threat*, PERSONHOOD ALLIANCE, <https://personhood.org/issues/foundational/worldviews/transhumanism-greatest-threat> (last visited Oct. 25, 2021) (“It is no longer enough to be anti-abortion. We have now entered a time when we must be pro-human.”).

24. *See generally* J. Harvie Wilkinson III, *Article: Of Guns, Abortions, and the Unraveling Rule of Law*, 95 VA. L. REV. 253, 255 (2009) (“[T]he caution befitting the judiciary’s interpretive task and unelected station is periodically forgotten—often to the accompaniment of short-term applause but at the expense of long-term institutional respect.”).

25. Muzyka, *supra* note 15.

compounded by the fact that transhumanism is not a single technology, but instead a mesh of complementary, interrelated pursuits funded by competing interests in academia, government, and private enterprise vying for prestige, influence, and wealth.<sup>26</sup> To prepare a cogent survey of difficulties likely to arise in the legal context, it is necessary first to analogize to the developments of twentieth century technologies that are familiar to the reader, including advanced life support, organ transplantation, plastic surgery, and prosthetics.

To achieve that goal, Part I will present a brief but thorough account of three discrete, contemporary transhumanist technologies and their applications to date, including a succinct overview of their sources of funding and competing ideologies through the paradigm of therapy-versus-enhancement introduced above. This section will also acquaint the reader with foundational terminology essential to discuss the moral issues broached in the succeeding parts. Importantly, this part also distinguishes transhumanism from the repugnant historical practice of eugenics by differentiating their underlying ideologies and canon sources.

Part II will re-acquaint the reader with mainstream legal commentary and policy on the subject of personhood, supplementing the paucity of statutory and judge-made law on the topic of transhumanism with citations to relevant academic journals and model statutes to form a coherent, self-consistent diorama of legal principles and the accompanying moral minefield. This is vital because the development of the law of personhood in the twentieth century is likely to inform that of transhumanism in the twenty-first.

Finally, in Part III, building upon the foundational knowledge introduced in Part I and the legal dilemmas cited in Part II, this Note will attempt to persuade the reader of the moral urgency of this topic before suggesting a path forward in the form of a rudimentary, conceptual framework.

Intertwined in each of these parts, this Note propounds four assertions united by a common thread: First, acceleration in the development of transhumanist technologies is inevitable in a technologically advanced, globalized society.<sup>27</sup> Second, transhumanism is ineluctably complex because it embodies the meshing of technology and biology along a spectrum.<sup>28</sup> Third,

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26. *Id.*

27. See KURZWEIL, *supra* note 18, at 7. This Note does not express an opinion as to whether globalization is inevitable or that it is a desirable outcome; merely, that the rise of transhumanism is likely once the conditions giving rise to globalization have fermented.

28. See generally NICK BOSTROM, THE TRANSHUMANIST FAQ 5 (version 2.1 2003), <https://www.nickbostrom.com/views/transhumanist.pdf> (“On the dark side of the spectrum, transhumanists recognize that some of these coming technologies could potentially cause great harm to human life; even the survival of our species could be at risk.”).

conscientious legal practitioners have a moral obligation to actively participate in the development of case law and legislation in this field to avoid unfavorable, and indeed, catastrophically immoral outcomes.<sup>29</sup> Finally, and in summation, transhumanism is not only tolerable but *can be* moral; it is a discipline to be studied by theologians and moral thinkers as a qualified good—subject to conditions and constraints suggested in Part III—when applied in limited, therapeutic contexts.

I. A BRIEF SURVEY OF TRANSHUMANISM  
FROM THE 19TH CENTURY TO PRESENT:  
A CONFLUENCE OF SCIENCE, PHILOSOPHY, AND MORALITY

To trace the moral contours of transhumanism, we must first understand the existing landscape of technological development, as well as the philosophical footings that will ground its future. The first subpart introduces specific transhumanist technologies that have either been commercialized or will be shortly. This is necessary to dispel the erroneous notion that transhumanism is some futuristic concept (as critical readers might perceive at this early stage) and thus only marginally important. In fact, it is here today, and, as we will see in later parts, the constituent technologies underpinning the theory of transhumanism are not particularly new.<sup>30</sup>

The second subpart offers evidence to refute the contention that the modern transhumanist movement is a repackaging of the historical practice of eugenics.<sup>31</sup> Stated differently, if I am successful in the first subpart, I may have convinced the reader that transhumanism is here today (and not merely a supposition about the future); even so, some readers may deride its constituent technologies as fatally dangerous or irredeemably tainted by the precedent of eugenics. In rejoinder, I offer two counterarguments: First, transhumanism reveres the inherent worth and dignity of every individual. Eugenics, conversely, is rooted in utilitarian ideals,<sup>32</sup> prioritizing “the greatest good for

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29. See David B. Wilkins, *In Defense of Law and Morality: Why Lawyers Should Have a Prima Facie Duty to Obey the Law*, 38 WM. & MARY L. REV. 269, 272 (1996) (“Common morality, therefore, enters the decision-making process as either a reason for overriding the prima facie obligation or as a ground for rejecting the role entirely.”).

30. Bostrom, *supra* note 6, at 2; see also Thomas Schlich, *The ‘Bionic Men’ of World War I*, CNN (June 27, 2014), <https://www.cnn.com/2014/06/26/opinion/schlich-world-war-i-prosthetics/index.html>.

31. See Bostrom, *supra* note 6, at 1; see also BOSTROM, *supra* note 28, at 40 (“The eugenics movement . . . was thoroughly discredited.”).

32. I. Glenn Cohen, *Regulating Reproduction: The Problem with Best Interests*, 96 MINN. L. REV. 423, 489 (2011) (“Thus, on the average utilitarian version of the non-person-affecting principle, reproducing in such circumstances is wrong because it lowers average utility.”).

the greatest number.”<sup>33</sup> Second, transhumanism as a field of study arose from discrete technological and scientific developments during and following the First World War; its treatment in academia succeeded its practice in the so-called real world.<sup>34</sup> In contrast, the embers of the eugenics movement were arguably ignited by Friedrich Nietzsche’s publication of *Thus Spoke Zarathustra*—which would later be invoked by the Nazis in perpetrating the Holocaust half a century later.<sup>35</sup>

#### A. Current and Novel Examples of Transhumanist Technologies

Today, brain implants and other cyborg-like imagery are not as phantasmagorical as they might have seemed even ten years ago; indeed, the topic of transhumanism has already extended its tentacles into intellectual property law, for example.<sup>36</sup> The rapid evolution of cellular phones, portable music players, the Internet of Things, and wearables (*e.g.*, Google Glass and the Apple Watch) illustrates the convergence and blurring of the biological and technological.<sup>37</sup> While these appliances may appear, at first, to be tools of simple convenience or mere novelties, they portend the technological-biological symbiosis envisioned by pioneers of the transhumanist movement.<sup>38</sup> That the prologue to transhumanism has already been written in the form of contemporary consumer technologies is not a hypothetical supposition but a present fact.<sup>39</sup> With that premise in mind, I will now introduce the reader to other, somewhat less familiar technologies which form the next “stepping

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33. Corey A. Ciocchetti, *Tricky Business: A Decision-Making Framework for Legally Sound, Ethically Suspect Business Tactics*, 12 CARDOZO PUB. L. POL’Y & ETHICS J. 1, 10 (2013) (“Act Utilitarianism applies the greatest good for the greatest number analysis to every act that a person (or company/entity/decision maker) takes. The ethical action in each case is the one that brings about the greatest utility to all in that particular situation.”) (emphasis added).

34. See Schlich, *supra* note 30; see also BOSTROM, *supra* note 28, at 41 (noting that the term transhumanism appears to have been first used by Aldous Huxley’s brother, Julian Huxley, in 1957).

35. See JEFFREY ALEXANDER ET AL., *A CONTEMPORARY INTRODUCTION TO SOCIOLOGY* 378 (2d ed., 2011).

36. Philippe Jougoux, *Frankenstein and the Law: Some Reflexions on Transhumanism*, RESEARCHGATE (June 2015), [https://www.researchgate.net/publication/278714983\\_Frankenstein\\_and\\_the\\_law\\_some\\_reflexions\\_on\\_transhumanism](https://www.researchgate.net/publication/278714983_Frankenstein_and_the_law_some_reflexions_on_transhumanism) (“This tension between human enhancement and economical discrimination is also reflected in the current debate about the patentability of . . . human enhancements.”).

37. VLAB (vlabvideos), *Human Augmentation: Blurring the Line Between Biology & Technology*, YOUTUBE (Dec. 10, 2014), <https://www.youtube.com/watch?v=dsKCWIYK9-M>.

38. Jeb Boone, *Google Glass Leads Transhumanism Trend That Will Augment Reality and Human Biology*, THEWORLD (Feb. 25, 2013), <https://www.pri.org/stories/2013-02-25/google-glass-leads-transhumanism-trend-will-augment-reality-and-human-biology>.

39. *Id.*

stone” on the meandering path to biological and technological symbiosis—suppressing legal and moral analysis until Parts II and III respectively.

The first of these specific, contemporary transhumanist technologies is Elon Musk’s Neuralink; as a biological-technological bridge, Neuralink is an extension of bodily function and sensory capability—two hallmarks of transhumanist technology.<sup>40</sup> Neuralink exemplifies the recent advancement of brain-machine interfaces (BMIs).<sup>41</sup> In August 2020, Musk livestreamed an experiment on YouTube exhibiting recent developments in brain-computer interfaces; in his livestream, he introduced several live pigs implanted with electrodes and an unobtrusive interface protruding from their skulls, resting on the surface of their skin.<sup>42</sup> In the demonstration, Musk referenced computer displays quantifying the neurological sensory input that the pigs experienced in real-time, suggesting that the success of these animal experiments paves the way for mobility-constrained individuals such as paraplegics to regain a higher degree of physical autonomy than they presently enjoy.<sup>43</sup> Importantly, and perhaps most impressively, Musk claimed that Neuralink can also be removed without injuring the host animal.<sup>44</sup> He explained that this claim of reversibility is essential to assuage the legitimate concern that early adopters would be disadvantaged as future versions supplant the first iteration of Neuralink.<sup>45</sup>

In an unexpected display of candor, Musk openly posits that transhumanist technologies, including his own Neuralink, represent “the single biggest existential crisis that we [as a society] face.”<sup>46</sup> Although he was opining specifically on artificial intelligence, he readily acknowledges that A.I. is a complementary technology to Neuralink and that soon these two technologies will converge.<sup>47</sup> This fear of transhumanism—and its complement, artificial intelligence—has not inhibited Musk from captaining the development of

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40. Nick Bostrom, *Transhumanist Values*, in *ETHICAL ISSUES FOR THE 21ST CENTURY*, (Fredrick Adams ed., Phil. Documentation Ctr. Press 2003), reprinted in 4 *REV. CONTEMP. PHIL.* 3, 6–7 (2005), <https://www.nickbostrom.com/ethics/values.pdf>.

41. Elon Musk, *An Integrated Brain-Machine Interface Platform with Thousands of Channels*, *BIORxIV* (Aug. 2, 2019) (unpublished manuscript) (on file with BioRxiv), <https://www.biorxiv.org/content/10.1101/703801v4> (articulating the recent development of “small and flexible electrode ‘threads’” as a breakthrough in brain-machine interfaces); see also Neuralink, *Neuralink Progress Update, Summer 2020*, *YOUTUBE* (Aug. 28, 2020), <https://www.youtube.com/watch?v=DVvmgjBL74w>.

42. Neuralink, *supra* note 41.

43. *Id.*

44. *Id.*

45. *Id.*

46. Impossible, *A Brief Exploration into Transhuman Tech*, *MEDIUM* (Nov. 27, 2019), <https://medium.com/impossible/a-brief-exploration-into-transhuman-tech-7a36c5b17e23>.

47. *Id.*



Neuralink.<sup>48</sup> At this point, it may be helpful to recognize that artificial intelligence, properly understood, is distinguishable from transhumanism: whereas transhumanism advocates for the technological enhancement of extant *biological* beings,<sup>49</sup> artificial intelligence envisions the creation of novel *non-biological* consciousness.<sup>50</sup>

Musk reconciles the apparent incongruence in his public statements by acknowledging the need for the development of new laws: “I am not normally an advocate of regulation and oversight—I think one should generally err on the side of minimizing those things—but this is a case where you have a very serious danger to the public.”<sup>51</sup> Whereas academia and universities were the progenitors of transhumanist research via self-funding and government grants,<sup>52</sup> recent developments in transhumanism have been funded by private enterprise and entrepreneurs like Musk.<sup>53</sup> The advent of Neuralink and competing technologies like BrainCo<sup>54</sup> signal that the fruits of the transhumanist technologies are no longer *pure* in the scientific sense but are now *applied* such that they have commercial applications that can be distilled into profit-generating products for sale to consumers.<sup>55</sup> The distinction between pure (also known as basic) research and applied research has long

48. Musk, *supra* note 41.

49. BOSTROM, *supra* note 28, at 4 (“The study of the ramifications, promises, and potential dangers of technologies that will enable us to overcome fundamental *human* limitations, and the related study of the ethical matters involved in developing and using such technologies.”) (emphasis added).

50. Artificial intelligence, while complementary to the goals of transhumanism, is a distinct field with its own academic canon, constituent technologies, advocates, and critics; whereas transhumanism starts with the biological and moves toward the technological, artificial intelligence is arguably a purely-technological concept; *see generally Artificial Intelligence*, NEW OXFORD AMERICAN DICTIONARY (3d ed. 2015) (“The theory and development of *computer systems* able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.”) (emphasis added), <https://www.oxfordreference.com/view/10.1093/oi/authority.20110803095426960>.

51. Catherine Clifford, *Elon Musk: ‘Mark my words – A.I. is far more dangerous than nukes’*, CNBC (Mar. 14, 2018, 11:31 AM), <https://www.cnbc.com/2018/03/13/elon-musk-at-sxsw-a-i-is-more-dangerous-than-nuclear-weapons.html>.

52. *See* Duncan Graham-Rowe, “Robo-rat” Controlled by Brain Electrodes, NEW SCIENTIST (May 1, 2002), <https://www.newscientist.com/article/dn2237-robo-rat-controlled-by-brain-electrodes> (introducing then-contemporary brain-computer interfaces as the product of research undertaken at the State University of New York in New York City).

53. Musk, *supra* note 41.

54. *See* Impossible, *supra* note 46 (comparing Neuralink and BrainCo).

55. *Id.*; *see generally What Is Basic Research?*, BERKELEY LAB, <http://www.lbl.gov/Education/ELSI/Frames/research-basic-defined-f.html> [[https://web.archive.org/web/20110605192437fw\\_/http://www.lbl.gov/Education/ELSI/Frames/research-basic-defined-f.html](https://web.archive.org/web/20110605192437fw_/http://www.lbl.gov/Education/ELSI/Frames/research-basic-defined-f.html)] (“The main motivation [of pure research] is to *expand man’s knowledge*, not to create or invent something. There is no obvious commercial value to the discoveries that result from basic research.”).

been a contentious topic in academia;<sup>56</sup> in the context of transhumanism, that dichotomy is most clearly illustrated by the concern that applied research unavoidably imbues the end-product—whatever that may be—with the researcher’s moral values and beliefs.<sup>57</sup>

In contrast to Neuralink—which exists on the technological side of the biological-technological spectrum—stands Luxturna, a recently-approved<sup>58</sup> gene therapy to treat certain forms of hereditary blindness.<sup>59</sup> Gene therapy implicates at least two of transhumanism’s core values: expanding body functionality (by replacing missing functionality) and enhancing “sensory modalities.”<sup>60</sup> Gene therapy, which has heretofore been constrained to the experimental realm,<sup>61</sup> raises manifold questions in healthcare equity, cost burden, the presence of side effects, and the responsibilities and obligations of public and private insurance.<sup>62</sup> In layperson’s terms, Luxturna uses a manmade virus to treat patients with hereditary retinal dystrophy by correcting a defective gene found on chromosome number one; it afflicts about one out of every 100,000 newborns.<sup>63</sup> It is the pathfinder in a new class of drugs

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56. See Douglas L. Medin, *A Dangerous Dichotomy: Basic and Applied Research*, ASS’N FOR PSYCH. SCI. (March 2012), <https://www.psychologicalscience.org/observer/a-dangerous-dichotomy-basic-and-applied-research>.

57. *Id.* (“Frequently, the values in play are cultural values, values that may be different in other cultures and contexts.”).

58. *FDA Approves Novel Gene Therapy to Treat Patients with a Rare Form of Inherited Vision Loss*, U.S. FOOD & DRUG ADMIN. (Dec. 18, 2017), <https://www.fda.gov/news-events/press-announcements/fda-approves-novel-gene-therapy-treat-patients-rare-form-inherited-vision-loss> (last visited Nov. 3, 2020).

59. *Id.*

60. Bostrom, *supra* note 40, at 6–7; see also Dana M. Small & John Prescott, *Odor/taste Integration and the Perception of Flavor*, 166 *EXPERIMENTAL BRAIN RESCH.*, 345, 345–57 (2005) (explaining that the term “sensory modalities” refers to the discrete channels of human perception including hearing, sightedness, olfaction, etc.).

61. *What is Gene Therapy?*, MEDLINEPLUS, <https://medlineplus.gov/genetics/understanding/therapy/genetherapy> (last visited Nov. 19, 2020).

62. Rob Davies, *US Drug Firm Offers Cure for Blindness – at \$425,000 an Eye*, THE GUARDIAN (Jan. 3, 2018, 1:15 PM), <https://www.theguardian.com/business/2018/jan/03/us-drug-firm-offers-cure-for-blindness-at-425000-an-eye>; see also Kevin Curran, *The Gene Therapy Sector Is Experiencing an Acceleration*, RISING TIDE BIOLOGY (Oct. 26, 2020), <https://www.risingtidebio.com/what-is-gene-therapy-uses> (last visited Nov. 3, 2020).

63. The FDA describes Luxturna as “an adeno-associated virus vector-based gene therapy indicated for the treatment of patients with confirmed biallelic RPE65 mutation-associated retinal dystrophy.” *Luxturna*, U.S. FOOD & DRUG ADMIN., <https://www.fda.gov/vaccines-blood-biologics/cellular-gene-therapy-products/luxturna> (last visited Nov. 3, 2020); see also *RPE65 Gene*, MEDLINEPLUS, <https://medlineplus.gov/genetics/gene/rpe65> (last visited Nov. 3, 2020) (“The *RPE65* gene is found on chromosome 1.”); see also Aouadj et al., *Epidemiology of RPE65 Gene Mutation*, AM. ACAD. OF OPHTHALMOLOGY (June 4, 2018), [https://tools.ispor.org/research\\_pdfs/60/pdffiles/PSY28.pdf](https://tools.ispor.org/research_pdfs/60/pdffiles/PSY28.pdf) (“Incidence of newly diagnosed RP cases per year was estimated to range from 0.6 to 1.64 per 100,000 population.”).

seeking to paradigmatically alter treatment and accommodation of impairments like blindness, cancer, muscular dystrophy, Huntington's Disease, and others<sup>64</sup>—albeit at a cost of \$425,000 per eye.<sup>65</sup> The FDA categorizes these tools as cellular gene therapy products, of which about twenty are presently approved.<sup>66</sup> Of these products, some, but not all, incorporate human-derived stem cells.<sup>67</sup> While the use of human-derived stem cells is an important topic standing on its own, Luxturna and similar therapies in the developmental pipeline avoid that issue because they are derived not from umbilical cords or other sources of human-derived stem cells but instead are vectored by a synthetic virus.<sup>68</sup>

Luxturna presages other burgeoning gene therapies; indeed, “the FDA expects to see a doubling of new gene therapy applications every year.”<sup>69</sup> The explosive growth in gene therapies is attributable, in part, to the twenty-first Century Cures Act which “provides [financial] incentives for sponsors to pursue gene therapies . . . .”<sup>70</sup> These gene therapies are not limited to hereditary retinal defects; other promising gene therapies include treatments for previously-uncurable<sup>71</sup> maladies like human immunodeficiency virus (HIV), Huntington's Disease, hemophilia, and cystic fibrosis.<sup>72</sup> The legal questions arising in the penumbra of these novel treatments is poignantly summarized in one question: does a newborn child have a right to vision? That

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64. See Curran, *supra* note 62.

65. See Davies, *supra* note 62 (explaining how many people in these communities (deafness especially) would not characterize their condition as a disability, but instead, as a physical trait naturally existing in the human genome. That contention is relevant to the discussion of transhumanism because it imparts the question: who decides what traits and capabilities are desirable for purposes of so-called directed evolution? This question is addressed later in this Note. See *infra* Part III.).

66. *Approved Cellular and Gene Therapy Products*, U.S. FOOD & DRUG ADMIN., <https://www.fda.gov/vaccines-blood-biologics/cellular-gene-therapy-products/approved-cellular-and-gene-therapy-products> (Oct. 26, 2021).

67. *Id.*

68. Simon Makin, *Four Technologies That Could Transform the Treatment of Blindness*, NATURE (Apr. 10, 2019), <https://www.nature.com/articles/d41586-019-01107-8> (“An important driver of gene therapy's progress has been the use of adeno-associated virus (AAV) to deliver replacement genes to cells.”).

69. Curran, *supra* note 62.

70. *Id.*; see also 21st Century Cures Act, Pub. L. No. 114-255 (2016) (codified as amended in scattered sections of 21, 41 U.S.C.).

71. The astute reader will differentiate between those illnesses which are uncurable and those which are untreatable.

72. Curran, *supra* note 62.

question is not hypothetical, because private insurers are struggling with that dilemma today.<sup>73</sup>

Somewhere between the technology of Neuralink and the biology of Luxturna exists a hybrid: Strategies for Engineered Negligible Senescence (SENS).<sup>74</sup> SENS fits squarely within the perimeter of transhumanism because it implicates life prolongation—a keystone of transhumanism.<sup>75</sup> SENS is an expansive umbrella covering nanorobotics, hormone “therapy” (including the recreational administration of human growth hormone and testosterone “treatments” administered in the absence of a recognized illness), caloric restriction, 3D printed organs,<sup>76</sup> and the use of over-the-counter and prescription pharmaceuticals (*e.g.*, NAD<sup>+</sup>, a naturally-occurring enzyme that regulates metabolic processes; and metformin, a treatment for type two diabetes).<sup>77</sup> The fervor befogging this topic has mushroomed recently as private entities funded by high-profile technologists—with Peter Thiel and Elon Musk at the vanguard—are exploring remedies to counteract the perceived maladies of aging.<sup>78</sup> The discrete vectors and applications of SENS are multitudinous; however, they are unified under the euphemistic marketing banner of “regenerative medicine,” defined as the process of replacing, engineering, or “regenerat[ing] human [or animal] cells, tissues, or organs to restore or establish normal function” with the goal of adding years of healthy life.<sup>79</sup>

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73. See *Medical Coverage Policy | Luxturna*, BLUE CROSS BLUE SHIELD OF R.I., Apr. 2018 at 1, <https://www.bcbsri.com/providers/sites/providers/files/policies/2018/12/2018%20%20Luxturna.pdf> (specifying seven criteria to be satisfied before Luxturna is considered “medically necessary” and thus eligible for payment).

74. See AUBREY DE GREY WITH MICHAEL RAE, *ENDING AGING: THE REJUVENATION BREAKTHROUGHS THAT COULD REVERSE HUMAN AGING IN OUR LIFETIME* 42 (St. Martin’s Press 2007).

75. See Bostrom, *supra* note 40, at 5.

76. Emma Yasinski, *On the Road to 3-D Printed Organs*, THE SCIENTIST (Feb. 26, 2020), <https://www.the-scientist.com/news-opinion/on-the-road-to-3-d-printed-organs-67187>.

77. GREY, *supra* note 74, at 42–43 (describing generally several technologies that fall within the contours of SENS applications and the “seven parts of SENS”).

78. Peter Thiel’s interest in self-injection of adolescent blood to combat the effects of aging is a particularly vivid (some would say repugnant) example. See Maya Kosoff, *Peter Thiel Wants to Inject Himself with Young People’s Blood*, VANITY FAIR (Aug. 1, 2016), <https://www.vanityfair.com/news/2016/08/peter-thiel-wants-to-inject-himself-with-young-peoples-blood>.

79. Chris Mason & Peter Dunnill, *A Brief Definition of Regenerative Medicine*, FUTURE MEDICINE (Dec. 21, 2007), <https://www.futuremedicine.com/doi/pdfplus/10.2217/17460751.3.1.1>.

While youth and beauty have been prized since antiquity,<sup>80</sup> the notion of aging as a disease to be eradicated is a somewhat recent development.<sup>81</sup> Two questions now begin to crystalize: would legal practitioners and laypersons alike not argue that aging (gracefully or otherwise) is a primordial ingredient of the human recipe—and not an impediment to be conquered? Mortality and the certainty of an eventual death have pervaded art, literature, and economics since the dawn of time; are technologists and lab technicians qualified to fashion these alterations to our world? Equally disquieting are the pragmatic, Malthusian concerns of extending human lifespans indefinitely without a concomitant increase in natural resources.<sup>82</sup>

In response, critics are quick to counter that advancements in chemistry and agriculture will outpace population growth (and inferentially that efforts to extend lifespans if not eliminate senescence<sup>83</sup> altogether should continue).<sup>84</sup> The import of these forces—anti-aging technology on the one hand and agricultural improvements on the other—are unlikely to be settled in the near-term. It is enough for now that readers begin to appreciate the many variables in this function.

Even if the reader discounts these three specific technologies—brain-computer interfaces (whether Neuralink or others), gene therapies like Luxturna, and regenerative anti-aging medicine—as frivolous or irrelevant, other technologies emerge to fill that void. Embryo culling, artificial selection, and assisted reproductive technologies are not new, having been covered

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80. *Would You Be Beautiful in the Ancient World?*, BBC NEWS (Jan. 10, 2015), <https://www.bbc.com/news/magazine-30746985>.

81. See generally L.A. Gavrilov & N.S. Gavrilova, *Is Aging a Disease?*, 30 *ADVANCED GERONTOLOGY* 841, 841–42 (2017), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6057778/pdf/nihms-981298.pdf> (“This initiative is based on the conviction that the official recognition of aging as a disease will make it possible to radically increase funding for the development of new efficient drugs against aging.”).

82. PAUL R. EHRLICH, *THE POPULATION BOMB* 4–5 (River City Press 1975) (1968) (advocating for a careful study of human lifespan in the context of available and limited natural resources); *Actuarial Escape Velocity*, *THE FUTURIST* (Mar. 25, 2008), <https://www.singularity2050.com/2008/03/actuarial-escap.html> (describing generally the societal benefits and economic costs of novel life extension technologies).

83. Senescence is defined as “[t]he condition or process of deterioration with age.” *Senescence*, *NEW OXFORD AMERICAN DICTIONARY* (3d ed. 2015).

84. *Malthus, Food Production and Population Growth*, *SUSTAINABILITY FOR ALL*, <https://www.activesustainability.com/sustainable-development/malthus-food-production-population-growth> (last visited Nov. 3, 2020) (“Using techniques such as the employment of chemicals, mechanization of processes and irrigation of land, it is possible to increase the productive capacity of the earth and exploit the fertility of the soil.”).

extensively in the mid-1990s and reaching a fever pitch in the case of Nadya Suleman in 2009.<sup>85</sup>

Other *posthuman* technologies like mind uploads and whole brain emulation are even more exotic, and as I allude in Part III, are yet more cumbersome from a moral standpoint. These concepts are equally controversial and compelling, and up until recently, were purely theoretical.<sup>86</sup> Although estimates place the availability of the end product of these posthuman technologies in the twenty-second century, the precursor ingredients—namely 3D microscopy, advanced medical imaging including 3D functional CT and PET scans, low-cost petaflop server clusters, and ultrafast wireless internet omniconnectivity—are not only in development but have, in some cases, already been commercialized.<sup>87</sup> Rounding out this survey of discrete technologies with transhumanist applications, powered exoskeletons are, in comparison, a tame, practical example of transhumanist technology under study for the treatment of individuals who are partially or fully paralyzed or to be used prophylactically to avert workplace injuries from occurring in high-risk environs such as warehouses.<sup>88</sup>

In summation, there are several transhumanist technologies in the developmental pipeline, or in some cases, already on the shelf.<sup>89</sup> While they differ as to their modes of action, risks, costs, target audiences, and feasibilities, the gestalt should now be readily apparent: transhumanism is not merely a concern for future generations to untangle or a thought-experiment relegated to the musty halls of academia. Society broadly, and lawyers specifically, must begin the laborious task of developing new legal frameworks to accommodate and influence transhumanism to achieve moral outcomes. It would be gravely erroneous to allow the cultural cognoscenti to decide these fundamental issues without input from the legal profession. As I

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85. Adam Popescu, *The Octomom Has Proved Us All Wrong*, N.Y. TIMES (Dec. 15, 2018), <https://www.nytimes.com/2018/12/15/style/octomom-kids-2018.html> (“In 2008, Natalie Suleman was implanted with 12 embryos . . . . Never before had so many been born at once and survived, a medical marvel overshadowed by its treatment in the supermarket glossies.”).

86. Kaj Sotala & Harri Valpola, *Coalescing Minds: Brain Uploading-Related Group Mind Scenarios*, INT’L J. OF MACH. CONSCIOUSNESS, June 2012, at 1, 1 (“We present a hypothetical process of mind coalescence, where artificial connections are created between two or more brains.”).

87. See generally ANDERS SANDBERG & NICK BOSTROM, *WHOLE BRAIN EMULATION: A ROADMAP 81* (Future of Human. Inst. 2008) (“A rough conclusion would nevertheless be that if electrophysiological models are enough, full human brain emulations should be possible before mid-century.”).

88. Alan Ferguson, *Exoskeletons and Injury Prevention*, SAFETY & HEALTH (Sept. 23, 2018), <https://www.safetyandhealthmagazine.com/articles/17370-exoskeletons-in-the-workplace>.

89. See Luxturna, *supra* note 63 (Luxturna is one example which is available today by prescription in the United States).

will explain in the next subpart, transhumanism has its genesis in the twentieth century—a template worthy of study and critique.

B. *The Philosophical and Technological Roots of Modern Transhumanism*

Before evaluating transhumanism in a legal context, logic dictates a survey of its historical origins.<sup>90</sup> If transhumanism is a metaphorical tree,<sup>91</sup> the contemporary applications and recent developments described in the preceding subpart might aptly be described as its trunk. Belaboring the analogy, the roots of that tree find their origin in discrete technologies in the mid-twentieth century, which we will explore shortly.<sup>92</sup> To properly understand the legacy of those medical innovations and their relationship to modern transhumanism, we must first examine the abstract philosophies and legal precedents predating their invention.

Some contemporary critics of transhumanism assert that the modern<sup>93</sup> philosophical dendrites of transhumanism extend to the nineteenth century, first taking root in Friedrich Nietzsche's *übermensch* in his 1883 aphoristic<sup>94</sup> treatise *Thus Spoke Zarathustra*.<sup>95</sup> The *übermensch*, imprecisely translated as "overman," is depicted as a superhuman ideal which Nietzsche prizes not merely as a noble pursuit but as the singular, ultimate goal of humanity.<sup>96</sup> Central to this thesis is Nietzsche's rejection of God and the concomitant threat

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90. See Alison Bashford, *Julian Huxley's Transhumanism*, in *CRAFTING HUMANS: FROM GENESIS TO EUGENICS AND BEYOND* 153, 154 (Marius Turda ed., 2013) ("Transhumanism . . . [is a] future-oriented intellectual project[] . . . Yet, if anything has a past the future does, and accordingly I raise . . . questions here. How does transhumanism understand its own history?").

91. Ted Peters, *H-: Transhumanism and the Posthuman Future: Will Technological Progress Get Us There?*, *METANEXUS* (Sept. 1, 2011), <https://www.metanexus.net/h-transhumanism-and-posthuman-future-will-technological-progress-get-us-there> ("The tree's trunk stands with roots in classical Greece and Rome, as well as in the soil of Israel's history and the Christian Bible. The modern idea of progress, he avers, is both an outgrowth and a pruned version of biblical eschatology.").

92. See M.J. McNamee & S.D. Edwards, *Transhumanism, Medical Technology, and Slippery Slopes*, 32 *J. MED. ETHICS* 513, 513–18 (2006), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2563415/pdf/513.pdf> (discussing transhumanism as a "quasi-medical ideology that seeks to promote . . . therapeutic and human-enhancing aims.").

93. Many classical works contain expositions on personhood specifically and the human condition broadly; thus, it is helpful to distinguish between those classical works and modern treatments of this topic.

94. See FRIEDRICH NIETZSCHE, *THUS SPOKE ZARATHUSTRA* xiv (Adrian Del Caro trans., Adrian Del Caro & Robert B. Pippin, eds., Cambridge Univ. Press 2006), <http://users.clas.ufl.edu/burt/LoserLit/zarathustra.pdf>.

95. *Id.*

96. *Id.* at 5–6 n.3.

of nihilism in the absence of divinity.<sup>97</sup> Nietzsche suggests the *übermensch* as a hedonistic solution to this self-created conundrum; this man, Nietzsche claims, should live not according to Platonic ideals or God's Word, but instead according to his endogenous pursuit of pleasure and within his own construct of morality.<sup>98</sup> Concurrent with that morally relativistic view was the notion that a human's worth should be equated with his or her progenitive worth—stated differently, that the sole measure of a woman's worth is determined by how closely her child pursues these ideals.<sup>99</sup>

Nietzsche's solipsistic prose was arguably the academic genesis of modern eugenics,<sup>100</sup> although its functional origin can be traced to the banal science of animal husbandry in Biblical times.<sup>101</sup> This brand of self-directed idealism championed by Nietzsche has been cited as a metaphysical justification for eugenics in the United States and the Holocaust in Europe.<sup>102</sup> Its literary lineage is embodied in works like Aldous Huxley's *Brave New World* and *We* by Yevgeny Zamyatin.<sup>103</sup> Yet, its proponents claim that transhumanism—properly understood—is not an innocuous repackaging of

97. See generally Amanda N. Stauffer, *A Christian Response to the Impact of Nietzschean Philosophy on Richard Strauss's Also Sprach Zarathustra*, 10 *MUSICAL OFFERINGS* 13, 19 (2019) (“Nietzsche’s nihilistic worldview declared that both humankind and the world held no value and that suffering and evil were unjustifiable. . . . Therefore, Christianity was incompatible with the kind of nihilism posited by Nietzsche.”).

98. Chhay Lin Lim, *What are the Characteristics of the Übermensch?* CHHAY LIN’S PHIL. MUSINGS (May 18, 2015), <https://chhaylinlim.wordpress.com/2015/05/28/what-are-the-characteristics-of-the-ubermensch>.

99. See STANLEY ROSEN, *THE MASK OF ENLIGHTENMENT: NIETZSCHE’S ZARATHUSTRA* 118 (2d ed., 2004).

100. See RÜDIGER SAFRANSKI, *NIETZSCHE: A PHILOSOPHICAL BIOGRAPHY* 260–64, 266 (Shelley Frisch trans., 2002).

101. *Genesis* 31:8–13 (“If he said, ‘The speckled ones will be your wages,’ then all the flocks gave birth to speckled young; and if he said, ‘The streaked ones will be your wages,’ then all the flocks bore streaked young.”) (New International Version).

102. See generally ALEXANDER, *supra* note 35 (“[B]y the second half of the twentieth century the idea of linear social progress had begun to look less convincing, not just in light of horrific events such as the Holocaust . . .”); see also Katherine Ramsland, *Existential Murder: The Nietzsche Syndrome*, TRUTV (2008), [http://www.trutv.com/library/crime/notorious\\_murders/famous/nietzsche\\_crimes/7.html](http://www.trutv.com/library/crime/notorious_murders/famous/nietzsche_crimes/7.html) [[https://web.archive.org/web/20080604094640/http://www.trutv.com/library/crime/notorious\\_murders/famous/nietzsche\\_crimes/7.html](https://web.archive.org/web/20080604094640/http://www.trutv.com/library/crime/notorious_murders/famous/nietzsche_crimes/7.html)].

103. See generally ALDOUS HUXLEY, *BRAVE NEW WORLD* 4–5 (2004) (ebook), [http://scotswolf.com/aldoushuxley\\_bravenewworld.pdf](http://scotswolf.com/aldoushuxley_bravenewworld.pdf); YEVGENY ZAMYATIN, *WE* 14 (Gregory Zilboorg trans., Project Gutenberg 2020) (ebook), <https://www.gutenberg.org/files/61963/61963-h/61963-h.htm>.



eugenics<sup>104</sup> for the twenty-first century despite efforts by its well-intentioned detractors to portray it as a repugnant, thorny rose by another name.<sup>105</sup>

This chasm between the eugenical undertakings advocated by Nietzsche,<sup>106</sup> popularized by Huxley,<sup>107</sup> and executed by the Nazis<sup>108</sup> and modern transhumanism, is pointedly illustrated in a dichotomy: that of authoritarian collectivism, and by extension, state coercion, sharply contrasted with the tenets of individualism, self-determination, and liberty.<sup>109</sup> Those values—manifestations of free will—are the bedrock fundamentals of modern transhumanism, contrasted with the grotesqueries of eugenics in the twentieth century.<sup>110</sup> Implicit in this reverence for the individual is the acknowledgment that transhumanism must contain certain safeguards and restrictions to the extent that “individual choices impact substantially on other people. . . .”<sup>111</sup> Coercion is a third rail: it must be strenuously avoided.<sup>112</sup> Nick Bostrom, the unofficial leader of the global transhumanist sect, unabashedly rejects the authoritarian compulsions of eugenics, advocating instead for deferring to individuals to make their own informed choices while tacitly acknowledging that there may yet be cases of technologies which are so dangerous that they must be regulated or outright banned.<sup>113</sup>

Transhumanist commentator and critic Alison Bashford agrees that the distinction between eugenics and transhumanism may be delimited by the terminology of “freedom” and “coercion.”<sup>114</sup> Yet, Bashford fears that transhumanism will serve to exacerbate the contemporary ills of inequality—

104. BOSTROM, *supra* note 28, at 40 (noting that the eugenics movement, for example, is “thoroughly discredited.”).

105. WILLIAM SHAKESPEARE, *ROMEO AND JULIET* act 2, sc. 2, l. 38 (“What’s in a name? That which we call a rose [b]y any other name would smell as sweet . . .”).

106. *See generally* NIETZSCHE, *supra* note 94, at xvii.

107. HUXLEY, *supra* note 103, at 4–5.

108. ALEXANDER, *supra* note 35.

109. Bostrom, *supra* note 40, at 11 (“To start with, transhumanists typically place great emphasis on individual freedom and individual choice, especially when it comes to enhancement technologies.”).

110. *See generally* *The Transhumanist Declaration*, WORLD TRANSHUMANIST ASSOCIATION (1998), <https://itp.uni-frankfurt.de/~gros/Mind2010/transhumanDeclaration.pdf> (“Transhumanists advocate the moral right for those who wish to use technology . . . to improve control over *their own lives*.”) (emphasis added).

111. Bostrom, *supra* note 40, at 11.

112. *Id.* (“[B]ut the mere fact that somebody else may be disgusted or morally affronted by somebody else’s using technology to modify herself would not normally be a legitimate ground for *coercive interference*.”) (emphasis added).

113. *Id.*

114. Bashford, *supra* note 90, at 155 (“They might look again at the history of eugenics, however, where they will find as much talk of ‘freedom’ as they will of ‘coercion.’ Therein lies the real link.”).

a common refrain in critics' writings on this topic.<sup>115</sup> One commentator addressed this contention adroitly, offering his riposte that rather than create inequality, transhumanism will instead dissolve existing inequalities and will ensure that "all persons are equal and none are less equal than others. No enhancement however dramatic, no disability however slight, or however severe, implies lesser (or greater) moral, political, or ethical status, worth, or value."<sup>116</sup>

Unquestionably, that is the view of an idealist, and its veracity will depend, in large part, on the efficacy, nature, and scope of regulations in this arena, starting seventy years ago with the United Nations Universal Declaration of Human Rights (UDHR). Partly in response to the eugenic campaigns of Nazi Germany, in which the lives of six million Jews and others were extinguished,<sup>117</sup> the United Nations in 1946 established the Commission on Human Rights, imbuing that body with the mandate of creating what was then characterized as an "international bill of rights."<sup>118</sup> The Commission then toiled for two years—from January 1947 to December 1948—to produce what the Third General Assembly adopted in the form of the UDHR.<sup>119</sup>

The Holocaust and the transnational response to it were instrumental in elevating the protection of human rights from a "*domestic concern*, that is, a concern of sovereign governments" to a "*universal concern*, that is, a concern of all human beings . . . for everyone—everywhere."<sup>120</sup> In that sense, the UDHR is an effort—one that has been criticized as imperfect<sup>121</sup> and

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115. *Id.* at 153–55.

116. JOHN HARRIS, *ENHANCING EVOLUTION* 86 (2007).

117. *Drafting and Adoption: The Universal Declaration of Human Rights—Cataclysm and World Response*, UNITED NATIONS (archived Sept. 19, 2012), <http://www.udhr.org/history/overview.htm> [<https://archive.is/eCkq>].

118. JOHANNES MORSINK, *THE UNIVERSAL DECLARATION OF HUMAN RIGHTS: ORIGINS, DRAFTING, AND INTENT* 4 (1999).

119. *Id.*

120. *See Drafting and Adoption: The Universal Declaration of Human Rights—Cataclysm and World Response*, *supra* note 117.

121. *Cf. Final Declaration of the Regional Meeting for Asia*, WORLD CONF. ON HUMAN RIGHTS (1993), <http://law.hku.hk/lawgovtsociety/BangkokDeclaration.htm> [<https://web.archive.org/web/20041124184022/http://law.hku.hk/lawgovtsociety/Bangkok%20Declaration.htm>] (emphasizing "the principles of respect for national sovereignty, territorial integrity and non-interference in the internal affairs of States" in contrast to the UDHR).

incomplete<sup>122</sup>—to express an objective, unalienable moral rule and measure.<sup>123</sup> In spite of that, some commentators have attempted to unmoor the UDHR from its objective anchor, construing it as an instrument enumerating certain *subjective* rights, ostensibly in an effort to advance a worldview of moral and cultural relativism incompatible with the universalist<sup>124</sup> intentions of the declaration’s drafters.<sup>125</sup> In response to this, the State Department of the United States has correctly warned that “the international human rights project is in crisis.”<sup>126</sup> In his remarks on the UDHR, then-Secretary Michael Pompeo observed that authoritarian governments have sought to discredit the UDHR, while “many multinational organizations have lost their way, focusing on partisan policy preferences . . . while failing to defend . . . [human] rights.”<sup>127</sup>

The UDHR, to the extent it is a reaction to eugenics and other abuses of human rights, is constrained by the fact that it is a declaration and not a treaty.<sup>128</sup> Declarations are distinguished from treaties in that they “are not always legally binding. The term is often deliberately chosen to indicate that the parties do not intend to create binding obligations but merely want to declare certain aspirations.”<sup>129</sup> Notwithstanding its advisory status, some

122. See generally Rosalind Croucher, *The Ongoing Legacy of the Universal Declaration of Human Rights*, AUSTL. HUM. RTS. COMM’N (Nov. 27, 2018), <https://humanrights.gov.au/about/new/s/speeches/ongoing-legacy-universal-declaration-human-rights>.

123. G.A. Res. 217 (III) A, Universal Declaration of Human Rights (Dec. 10, 1948), <https://www.un.org/sites/un2.un.org/files/udhr.pdf> (recognizing “the inherent dignity and of the equal and inalienable rights of all members of the human family. . .”).

124. *The Foundation of International Human Rights Law*, UNITED NATIONS, <https://www.un.org/en/about-us/udhr/foundation-of-international-human-rights-law> (last visited Oct. 30, 2021) (“It represents the universal recognition that basic rights and fundamental freedoms are inherent to all human beings . . .”).

125. See Anne Peters, *The Subjective International Right*, 59 JAHRBUCH DES ÖFFENTLICHEN RECHTS DER GEGENWART 411, 411–56 (2011); see also Homi Bhabha & Paula Erizanu, *There Is No Universal Objective Morality—An Interview with Homi Bhabha*, IAI (Jul. 31, 2019), <https://iai.tv/articles/there-is-no-universal-objective-morality-homi-bhabha-auid-1251>.

126. Michael R. Pompeo, *Promoting and Protecting Human Rights: A Re-Dedication to the Universal Declaration of Human Rights*, U.S. DEP’T STATE (Sept. 23, 2020), <https://2017-2021.state.gov/promoting-and-protecting-human-rights-a-re-dedication-to-the-universal-declaration-of-human-rights/index.html>.

127. *Id.*

128. *What is the Universal Declaration of Human Rights?*, AUSTL. HUM. RTS. COMM’N, <https://humanrights.gov.au/our-work/what-universal-declaration-human-rights> (last visited May 4, 2021) (“*The Universal Declaration is not a treaty*, so it does not directly create legal obligations for countries. However, it is an expression of the fundamental values which are shared by all members of the international community.”) (emphasis added).

129. *Glossary*, UNITED NATIONS TREATY COLLECTION, [https://treaties.un.org/Pages/Overview.aspx?path=overview/glossary/page1\\_en.xml#declarationsPages/Overview.aspx?path=overview/glossary/page1\\_en.xml#declarations](https://treaties.un.org/Pages/Overview.aspx?path=overview/glossary/page1_en.xml#declarationsPages/Overview.aspx?path=overview/glossary/page1_en.xml#declarations) (last visited May 4, 2021); see also *Sosa v. Alvarez-Machin*, 542 U.S. 692, 734 (2004) (holding that the UDHR “does not of its own force impose obligations as a matter of international law”).

elements of the UDHR have been incorporated into two *binding* covenants: the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights<sup>130</sup> and various national laws and constitutions.<sup>131</sup> Apart from those covenants, the subject of civil rights remains squarely in the domain of domestic—not international—law; thus, it follows that short of some comprehensive, binding transnational legislation on the subject, near-term developments in transhumanist law will occur at the national level.<sup>132</sup>

A second point of distinguishment between historical eugenics and modern transhumanism is the sequencing of the theory and application. Nietzsche's academic exposition of eugenics predated its practical applications, evidenced by the state funded sterilization efforts that followed his writing.<sup>133</sup> It was less than a century ago that the Supreme Court of the United States held, in an opinion authored by Justice Oliver Wendell Holmes, Jr., that a Virginia statute allowing for the sterilization of persons with mental disabilities did not contravene the Fifth and Fourteenth Amendment Due Process guarantees.<sup>134</sup> Astute readers will discern his reliance on utilitarianism in spirit if not in name. This eight-to-one ruling—a vigorous expression of the eugenical worldview—applauded compulsory, state-organized sterilization and is widely recognized now as one of the most heinous examples of state coercion in the post-slavery era.<sup>135</sup> Some readers may be surprised to learn that the *Buck v. Bell* ruling has never been explicitly overturned by the

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130. MORSINK, *supra* note 118, at 320.

131. Hurst Hannum, *The UDHR in National and International Law*, 3 HEALTH & HUM. RTS. 145, 150–52 (1998) (“The Universal Declaration has served as a model or inspiration for numerous constitutional and legislative provisions . . . estimat[ing] that ‘no fewer than 90 national constitutions drawn up since 1948 contain statements of fundamental rights which, where they do not faithfully reproduce the provisions of the . . . Declaration, are at least inspired by it.’”).

132. *Id.* at 147 (“The status of the Declaration when it was adopted in 1948 is described . . . as that of ‘a manifesto with primarily *moral* authority’” with three subsequent “documents—” the International Covenant on Civil and Political Rights, its Optional Protocol, and the International Covenant on Economic, Social and Cultural Rights” as “legally binding treaties . . . *in contrast to the more political or hortatory Declaration.*”) (emphasis added).

133. Fr. Luke Dysinger, *The Rise of Eugenics*, ST. JOHN'S SEMINARY: COURSE LECTURES & SELF-STUDY PROGRAMS (2002), [http://ldysinger.stjohnsem.edu/ThM\\_590\\_Intro-Bioeth/04\\_eugen/01\\_rise\\_eugen.htm](http://ldysinger.stjohnsem.edu/ThM_590_Intro-Bioeth/04_eugen/01_rise_eugen.htm) (“The history of state-sponsored sterilization in the United States began with legislation in Indiana in 1907.”).

134. *Buck v. Bell*, 274 U.S. 200, 205–08 (1927).

135. Matthew Willis, *When Forced Sterilization Was Legal in the U.S.*, JSTOR (Aug. 3, 2017), <https://daily.jstor.org/when-forced-sterilization-was-legal-in-the-u-s/>.

Supreme Court;<sup>136</sup> however, the *Relf v. Weinberger* ruling in 1974 signaled the end of state-sponsored mass sterilization in this country.<sup>137</sup> Of course, there is no more notorious example of eugenics and state compulsion than that of Nazi Germany and the Holocaust during the Second World War.<sup>138</sup> In another example of practice succeeding theory, the Nazis admired and adopted American eugenics “as an excuse for their own.”<sup>139</sup> While Nietzsche probably did not envision genocide as the likely dessert of his obscure writings in the nineteenth century, historians agree that his philosophical worldview and his cherished *übermensch* influenced the development of Nazi ideology, mysticism, and public policy.<sup>140</sup>

Conversely, the academic and philosophical implications of transhumanism are largely, though not exclusively, the product of twenty-first century thinking; they chronologically follow the development of precursor technologies in the twentieth century.<sup>141</sup> Although philosophers and theologians have toiled to define the human condition since at least the classical era,<sup>142</sup> transhumanism as a discrete field of study arose only after the advent of the constituent technologies discussed below.<sup>143</sup> Whereas eugenics started on the page and ended in a surgeon’s scalpel, applications of transhumanism started with the compassionate use of novel medical technology long before academia took interest.<sup>144</sup>

136. Lisa Ko, *Unwanted Sterilization and Eugenics Programs in the United States*, PBS (Jan. 29, 2016), <https://www.pbs.org/independentlens/blog/unwanted-sterilization-and-eugenics-programs-in-the-united-states>.

137. *Relf v. Weinberger*, 372 F. Supp. 1196, 1204–05 (D.D.C. 1974).

138. Willis, *supra* note 135.

139. *Id.*

140. LUCAS CARTER, HOW DID FRIEDRICH NIETZSCHE’S IDEAS INFLUENCE THE NAZI REGIME IN THE THIRD REICH? 7, <https://www.activehistory.co.uk/ib-history/extended-essay-history-samples/nietzsche.pdf> (“The Nazis drew a more biological interpretation of Nietzsche’s *Will to Power*. . . . The Nazis applied this theory to everyday life to fit their brutal ideals of overpowering ‘mongrel races’ and ‘undesirables’ hence the name ‘social’ and ‘Darwinism.’”).

141. Nick Bostrom, *A History of Transhumanist Thought*, 14 J. EVOLUTION & TECH. 1 (2005), reprinted in ACADEMIC WRITING ACROSS THE DISCIPLINES 17 (Michael Rectenwald & Lisa Carl eds., 2011), <https://www.nickbostrom.com/papers/history.pdf> (“In the 1970s, a broader kind of enquiry began to emerge, stimulated particularly by developments in assisted reproduction and genetics. This field became known as bioethics. *Many of the ethical issues most directly linked to transhumanism would now fall under this rubric . . .*”) (emphasis added); see also Elaine Graham, ‘Nietzsche Gets a Modem’: Transhumanism and the Technological Sublime, 16 LITERATURE & THEOLOGY 65, 65 (2002) (rejecting the claim that transhumanism “represent[s] a latter-day Nietzschean sensibility”).

142. Nicholas D. Smith, *Socrates on the Human Condition*, 36 ANCIENT PHIL. 1, 1 (2016).

143. Bostrom, *supra* note 141, at 17, 22.

144. *Id.* at 7, 17, 22 (noting that the term “‘transhumanism’ appears to have been first used by Aldous Huxley’s brother, Julian Huxley” in 1957).

The first transhuman era began with the advent of plastic surgery and the development of therapeutic prosthetics arising from the awful power of modern artillery in the First World War—that is, during the 1920s.<sup>145</sup> “Virtually every device produced today to replace lost body function of soldiers returning from our modern wars—as well as accident victims, or victims of criminal acts, such as the Boston Marathon bombings—has its roots in the technological advances that emerged from World War I.”<sup>146</sup> New surgical techniques, especially in sanitation and infection control, allowed soldiers to survive their previously-mortal wounds.<sup>147</sup> The Artificial Limb Laboratory was established at Walter Reed National Military Medical Center in 1917 “with the goal to give every amputee soldier a ‘modern limb,’ enabling them to pass as able-bodied citizens in the workplace.”<sup>148</sup> Perhaps in response to the rapid progress of artificial limbs during this time, Karl Marx predicted transhumanism in concept if not in name when he mused “that the urban proletariat would one day become a mere ‘appendage of the machine.’”<sup>149</sup> While Marx was referring to man’s increasing dependence on technology, his concern could be interpreted as foreshadowing not merely dependency but also physical integration and supplantation.

Plastic surgery developed alongside prosthetics and largely for the same reasons. Although “[a]esthetic and reconstructive surgery has existed in several guises since the Egyptian Old Kingdom in 3000 BC, . . . the advent of modern plastic surgery [arose] as a discrete specialty . . . shortly prior to the Great War.”<sup>150</sup> The “notable lag in the understanding of the war wounded by the civilian population” and “the psychological issues that presented as a result of [the soldiers’] experiences and injuries” were powerful momenta in the development of reconstructive techniques.<sup>151</sup> Those pioneering physicians

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145. Schlich, *supra* note 30.

146. *Id.*

147. *Id.*

148. *Id.*

149. *Id.*; KARL MARX & FREDERICK ENGELS, MANIFESTO OF THE COMMUNIST PARTY 18 (Samuel Moore trans., Progress Publishers 1969) (1848), <https://www.marxists.org/archive/marx/works/download/pdf/Manifesto.pdf>.

150. Robert Llewellyn Thomas, Anton Fries & Darryl Hodgkinson, *Plastic Surgery Pioneers of the Central Powers in the Great War*, 12 CRANIOMAXILLOFACIAL TRAUMA & RECONSTRUCTION 1, 1 (2019), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6391260/pdf/10-1055-s-0038-1660443.pdf>.

151. *Id.* at 6 (“This may have increased the appetite for reconstructive aesthetic surgery in the era, acting as a further catalyst for the development of plastic surgery in an effort to restore physical normality.”).

probably could not have foreseen that their pathfinding work would grow to be a nearly \$22 billion industry.<sup>152</sup>

The second transhuman era was demarcated by the successful implantation of the cardiac pacemaker in 1958.<sup>153</sup> Other showcase advancements in this era include the widespread use of medical ventilators (1958),<sup>154</sup> heart-lung machines (1955),<sup>155</sup> and the invention of the first-generation Jarvik-7 artificial heart (1982).<sup>156</sup> These four technologies were typified by bulky external attachments, and their utility was curtailed by the resultant inability to discharge recipient-patients from the hospital. The quality of life for the recipient-patients was mediocre, but their lives were extended beyond what would otherwise have been their natural deaths. Their willingness to undergo those experimental procedures piloted the era of modern life support that followed.

The third transhuman era has some overlap with the second; it is characterized by the widespread adoption of modern electrocardiograms (EKGs) (1942),<sup>157</sup> advanced life support (1975),<sup>158</sup> cochlear implants (1978),<sup>159</sup> and in vitro fertilization (1978).<sup>160</sup> This era's motif is that of miniaturization made possible by advancements in transistors, and later,

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152. *Cosmetic Surgery Market Size Is Projected to Reach USD 21.97 Billion with 7.8% CAGR by 2023*, MEDGADGET (Sept. 5, 2019), <https://www.medgadget.com/2019/09/cosmetic-surgery-market-size-is-projected-to-reach-usd-21-97-billion-with-7-8-cagr-by-2023-share-analysis-future-trends-and-global-industry-insights.html>.

153. Oscar Aquilina, *A Brief History of Cardiac Pacing*, 8 IMAGES PAEDIATRIC CARDIOLOGY 17, 38 (2006) ("On October 8th, 1958 the first pacemaker implantation was performed in Sweden.").

154. *Forrest M. Bird Medical Respirator*, NAT'L INVENTORS HALL OF FAME, <https://www.invent.org/inductees/forrest-m-bird> (last visited May 5, 2021) (noting that the 1958 release of "The Bird" was the first modern respirator for use in the critically ill).

155. Irwin Speizer, *This 1950s Heart-Lung Machine Revolutionized Cardiac Surgery*, SMITHSONIAN MAG. (May 24, 2019), <https://www.smithsonianmag.com/innovation/this-1950s-heart-lung-machine-revolutionized-cardiac-surgery-180972273>.

156. Peta Owens-Liston, *The First Artificial Heart, 30 Years Later*, UNIV. OF UTAH: HEALTH FEED BLOG (Dec. 2, 2012, 1:00 AM), <https://healthcare.utah.edu/healthfeed/postings/2012/12/120212ArtificialHeart30YearsLater.php>.

157. *A (Not So) Brief History of Electrocardiography*, ECG LIB., <https://ecglibrary.com/ecghist.html> (last updated May 11, 2009) ("When added to Einthoven's three limb leads and the six chest leads we arrive at the 12-lead electrocardiogram that is used today.").

158. *History of CPR*, AM. HEART ASS'N, <https://cpr.heart.org/en/resources/history-of-cpr> (last visited Nov. 16, 2020) ("The AHA publishes the first Advanced Cardiovascular Life Support (ACLS) Textbook.").

159. Acceptance Remarks, *Modern Cochlear Implant: 2013 Lasker-DeBakey Clinical Medical Research Award*, LASKER FOUND., <http://www.laskerfoundation.org/awards/show/modern-cochlear-implant>.

160. Adam Eley, *How Has IVF Developed Since the First "Test-Tube Baby"?*, BBC NEWS (Jul. 23, 2015), <https://www.bbc.com/news/health-33599353>.

semiconductors and batteries.<sup>161</sup> While the current, fourth era lacks the unifying themes of the preceding three, it might be defined by its focus on personalized medicine, also known as stratified medicine.<sup>162</sup> The most dramatic example is that of CAR T-cell therapy for lymphoma patients.<sup>163</sup> This novel therapy addresses a previously untreatable, particularly aggressive form of cancer of the immune system by extracting a patient's own immune cells, splicing into them an artificial cancer-fighting gene, and re-infusing them intravenously into the patient.<sup>164</sup> Other examples of stratified medicine include the Cancer Genome Atlas, attempting to identify genetic abnormalities in all major types of cancer in order to concoct individualized treatment regimens, as well as pharmacogenomics—a novel discipline exploring how natural genetic variation affects an individual's response to a proposed drug regime.<sup>165</sup> In another instance of governmental policy steering transhumanist research, these therapies were the fruits of the publicly-funded Human Genome Project of the 1990s and early 2000s.<sup>166</sup> Consumer applications of these technologies are already evidenced in the rise of personal genomics services such as 23andMe which market individualized genetic reports of one's ancestry and predisposition to hereditary conditions to the masses.<sup>167</sup>

In contrast to eugenics where the idea preceded the practice, the treatment of modern transhumanism in academia and literature largely succeeded these innovations. To date, the majority—if not the entirety—of these applications of transhumanist technology are presented by their sponsors as therapeutic.<sup>168</sup> Those that are not purely therapeutic—such as Musk's Neuralink—are framed

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161. Elizabeth Pavel, *Semiconductors in Healthcare*, LAM RSCH.: LAM BLOG (Nov. 20, 2017), <https://blog.lamresearch.com/semiconductors-in-healthcare>.

162. John Bell, *Stratified Medicines: Towards Better Treatment for Disease*, LANCET 3, 3–4 (Feb. 26, 2014), [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(14\)60115-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)60115-X/fulltext).

163. *CAR-T Cell Therapy*, LYMPHOMA RSCH. FOUND., <https://lymphoma.org/aboutlymphoma/treatments/cartcell> (last visited May 6, 2021); see also *CAR T-Cell Therapy*, NAT'L CANCER INST., <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/car-t-cell-therapy> (last visited May 6, 2021).

164. LYMPHOMA RSCH. FOUND., *supra* note 163.

165. *Genetic Testing: How It Is Used for Healthcare*, NAT'L INST. OF HEALTH, <https://archives.nih.gov/asites/report/09-09-2019/report.nih.gov/nihfactsheets/ViewFactSheetef83.html> (last updated Jun. 30, 2018); see also *Human Genome Project*, NAT'L INST. OF HEALTH, <https://archives.nih.gov/asites/report/09-09-2019/report.nih.gov/nihfactsheets/ViewFactSheete078.html> (last updated Jun. 30, 2018).

166. *Human Genome Project*, *supra* note 165.

167. Thomas Goetz, *23AndMe Will Decode Your DNA for \$1,000. Welcome to the Age of Genomics*, WIRED MAG. (Nov. 17, 2007, 12:00 PM), <https://wired.com/2007/11/ff-genomics/?currentPage=all>.

168. McNamee & Edwards, *supra* note 92, at 518 (“Already, we have seen the misuse of a host of therapeutically designed drugs . . .”).



in a therapeutic light, largely skirting the prickly topic of suprahuman enhancement for now.<sup>169</sup> That is, they do not yet openly seek to expand human capabilities beyond what is “normal,” setting aside, at least momentarily, the moral considerations of exactly what is “normal” or the merits in attempting to achieve it.<sup>170</sup> This subject is revisited below in Part III.

In concluding Part I, three contentions should now be apparent: First, the technologies and concepts underpinning transhumanism are not novel but are, in fact, at least seventy years old.<sup>171</sup> Second, modern transhumanism derives not from the repugnancy of eugenics philosophy and practice, but instead from the creation of reconstructive therapies following the First World War.<sup>172</sup> Third, in contrast to eugenics which subjectively viewed morality as transitive and malleable, transhumanism *can* be moral when it construes the natural law objectively—addressed in Part III.

With these contentions in mind, a fourth arises: transhumanist legal and moral heuristics will continue increasing in number and scale. A brief exposition of personhood jurisprudence follows in Part II; this body of law, presented through the prism of certain familiar torts, informs the discussion of morality that follows in Part III.

## II. “PERSONHOOD” AS PRELUDE: MOVING THE GOALPOSTS OF BIRTH AND DEATH

At this point, I must confront the elephant in the room: there is very little case law invoking the word “transhumanism,” but that, in isolation, is not evidence of its irrelevance or eccentricity. In this shorter part, I will attempt to refute that belief by illustrating the shortcomings of legal personhood in the context of live birth and natural death. If successful, the reader will intuit that the legal impact of transhumanism is not neatly compartmentalized within the domain of torts, but instead will have vast implications in many other doctrinal subjects. To illuminate the topic of personhood, I consider legislation and case law pertaining to what are perhaps the two most fundamental legal issues: the

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169. See Neuralink, *supra* note 41.

170. James F., *Roman Catholic Christianity—Embodiment and Relationality: Roman Catholic Concerns About Transhumanist Proposals*, in *TRANSHUMANISM AND THE BODY* 155, 163 (Calvin Mercer & Derek F. Maher eds., 2014).

171. Schlich, *supra* note 30.

172. See Thomas et. al., *supra* note 150, at 1, 6.

point at which life begins—conception<sup>173</sup>—and the point at which biological life terminates—natural death.

Judges and legislatures have attempted to negotiate an uneasy truce between competing policy interests to form a workable definition of personhood. In this undertaking, they are unavoidably opining on the boundaries of mortality.<sup>174</sup> These efforts have yielded a Frankenstein-like creature, at least from a moral, if not medical, view. This issue is exemplified by the scientific advancements in the 1990s to present which have steadily hastened the date of viability of an unborn child to earlier than twenty-four weeks.<sup>175</sup> These developments are graphically demonstrated by the recent development of an artificial womb that successfully gestated an infant sheep.<sup>176</sup> This artificiality which seeks to replace the organic body with synthetic, anthropogenic substitutes is a particularly troubling moral facet of posthumanism introduced above and revisited in Part III.

In the continuing interest of brevity, this part will restrict its attention to a handful of decisions and model statutes in the United States, although these topics transcend borders and jurisdictions. While this Note is not an exegesis on abortion jurisprudence—a topic of extraordinary moral import—some issues and precepts naturally overlap. To emphasize the link between personhood and transhumanism, I direct the reader to legal precedent and medical technologies which are slowly aligning the theological and moral view of life at conception<sup>177</sup> with the juridical view of life.<sup>178</sup> Finally, to pitch this discussion in practical terms, I begin my analysis in the context of tort law

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173. See Pope John Paul II, *Evangelium Vitae* [Encyclical letter on the Value and Inviolability of Human Life] ¶ 44 (1995) [hereinafter *Evangelium Vitae*].

174. Michael Stokes Paulsen, *The Plausibility of Personhood*, 74 OHIO ST. L.J. 13, 14 (2013) (recognizing that “the constitutional question of the legal personhood status of living human fetuses in utero . . . was of course resolved against such status in the Supreme Court’s decision in *Roe v. Wade*”).

175. Trevor English, *How and Why the Viability Age of Babies Keeps Getting Younger*, INTERESTING ENG’G (May 20, 2017), <https://interestingengineering.com/how-and-why-the-viability-age-of-babies-keeps-getting-younger>.

176. Shelby Rogers, *This Artificial Womb Just Successfully Grew a Sheep, Humans Could Be Next*, INTERESTING ENG’G (Apr. 26, 2017), <https://interestingengineering.com/artificial-womb-just-successfully-grew-sheep>.

177. See *Evangelium Vitae*, *supra* note 173, ¶ 45; but see J. Kowaleski, *State Definitions and Reporting Requirements for Live Births, Fetal Deaths, and Induced Terminations of Pregnancy*, NAT’L CTR. FOR HEALTH STAT. 2 (1997), <https://www.cdc.gov/Nchs/data/misc/itop97.pdf> (recognizing that “forty-eight of the [states and territories] use a definition of live birth that is very similar to [the model definition], five areas use a shortened definition . . . and four registration areas have no formal definition of live birth.”).

178. Kowaleski, *supra* note 177, at 2; see also *Model State Vital Statistics Act and Regulations*, NAT’L CTR. FOR HEALTH STAT. 2 (1992) [hereinafter *Model State*], [https://www.cdc.gov/nchs/data/misc/mvsact\\_92b.pdf](https://www.cdc.gov/nchs/data/misc/mvsact_92b.pdf) (“‘Live birth’ means the complete expulsion or extraction from its mother of a product of human conception . . . which . . . shows any . . . evidence of life . . .”).

as a sort of primer, while recognizing that the topic of legal personhood is not readily compartmentalized in torts or any other body of law.

The torts of wrongful birth, wrongful life, and wrongful conception are often cited as among the most morally contentious torts.<sup>179</sup> In observing that jurisdictions vary widely in their treatment and recognition of these three torts, the Utah Supreme Court supplies valuable definitions, articulating wrongful birth as “the cause of action whereby parents claim they would have avoided conception or terminated an existing pregnancy by abortion but for the negligence of those charged with . . . prenatal testing or counseling as to the likelihood of giving birth to a physically or mentally impaired child.”<sup>180</sup> Wrongful life, in comparison, “is the corresponding action by or on behalf of an impaired child alleging that but for the medical professional’s [purported] negligence, the child would not have been born to experience the pain and suffering associated with his or her affliction or impairment.”<sup>181</sup> Finally, the court distinguishes wrongful conception as referring “to those cases where parents bring a claim on their own behalf for the monetary and emotional damages they suffered as a result of giving birth to a normal and healthy but unplanned and unwanted child,” observing that “[s]uch actions are usually based upon a negligently performed or counseled sterilization procedure or abortion” or the failure to properly dispense birth control.<sup>182</sup> While the parties and remedies in these torts differ,<sup>183</sup> their moral contours intersect. Further, and importantly, each of these torts share a common element of which a plaintiff bears the burden of proof: live birth.<sup>184</sup>

The Model State Vital Statistics Act (MSVSA) propounds a detached clinical definition of live birth: “the complete expulsion . . . from its mother of a product of human conception, irrespective of the duration of pregnancy, which, after such expulsion . . . breathes, or shows any other evidence of life . . . .”<sup>185</sup> The relevant Florida statute embraces similar language: “‘Live birth’ means the complete expulsion or extraction of a product of human

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179. See generally Patricia Donovan, *Wrongful Birth and Wrongful Conception: The Legal and Moral Issues*, 16 FAM. PLANNING PERSPECTIVES 64, 64 (1984) (recognizing that “[r]ight-to-life groups . . . contend that legislation aimed at limiting wrongful-conception and wrongful-birth suits is necessary to protect doctors who are morally opposed to abortion from having to provide patients with information that might lead them to seek an abortion.”).

180. *C.S. v. Nielson*, 767 P.2d 504, 506 (Utah 1988).

181. *Id.*

182. *Id.*

183. Donovan, *supra* note 179, at 64 (recognizing that some courts have difficulty in distinguishing between the three torts and recognizing the varying acceptance of these torts across jurisdictions).

184. *Id.*

185. *Model State*, *supra* note 178, at 2.

conception from its mother, irrespective of the duration of pregnancy, which . . . breathes or shows any other evidence of life such as beating of the heart . . . and definite movement of the voluntary muscles . . . .”<sup>186</sup>

The difficulties of these definitions lay not in their plain meaning but in the developments of neonatal medical technology and their impact upon the date of viability, as introduced above.<sup>187</sup> As one professor of law and bioethics opined, “it is not true . . . that the legal order necessarily corresponds to the natural order . . . .”<sup>188</sup> She continues, adopting the court’s opinion in *Byrn v. New York City Health & Hospitals Corp.* that “it is a policy determination whether legal personality should attach and not a question of biological or ‘natural’ correspondence.”<sup>189</sup> Nowhere is the effect of this “policy determination” more pertinent than in

whether a human entity, conceived but not yet born, is and must be recognized as a person in the law. If so, it is argued that the person is immediately subsumed under the class entitled to constitutional protection, it being assumed that an entity if treated anywhere in the law as a person must be so treated for all purposes.<sup>190</sup>

The Court of Appeals of New York, writing in 1972, quoted John Chipman Gray, who previously observed:

Included in human beings . . . as legal persons, are all living beings having a human form. But they must be living beings; corpses have no legal rights. Has a child begotten but not born rights? There is no difficulty in giving them to it. A child, five minutes before it is born, has as much real will as a child five minutes after it is born; that is, none at all. It is just as easy to attribute the will of a guardian, tutor, or curator to the one as to the other. Whether this attribution should be allowed, or whether the embryo should be denied the exercise of legal rights, is a matter which each legal system must settle for itself. In neither the Roman nor the Common Law can a child in the womb exercise . . . rights.<sup>191</sup>

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186. FLA. STAT. § 382.002 (2021).

187. See English, *supra* note 175.

188. Jessica Berg, *Of Elephants and Embryos: A Proposed Framework for Legal Personhood*, 59 HASTINGS L.J. 369, 369 (2007) (quoting *Byrn v. N.Y. City Health & Hosp. Corp.*, 286 N.E.2d 887, 889 (N.Y. 1972)).

189. *Id.*

190. *Byrn v. N.Y. City Health & Hosp. Corp.*, 286 N.E.2d 887, 889 (N.Y. 1972).

191. *Id.* (quoting JOHN CHIPMAN GRAY, *THE NATURE AND SOURCES OF THE LAW* 38 (2d ed. 1921)).

The Supreme Court adopted a variation of this contentious<sup>192</sup> view in *Roe v. Wade*: “the word ‘person,’ as used in the Fourteenth Amendment, does not include the unborn.”<sup>193</sup> In the intervening decades, the law has not remained static. Louisiana recently recognized “ex utero embryos as ‘juridical person,’ with rights to sue and liability to be sued.”<sup>194</sup> Yet juridical persons are not natural persons; the former “is used to refer to an entity that is not a human being, but for which society chooses to afford some of the same legal protections and rights as accorded natural persons,” the textbook example being corporations.<sup>195</sup> This two-tiered distinction remains important because natural persons are often prioritized over juridical persons in cases of conflict.<sup>196</sup> Under which tier will future recipients of transhumanist technologies fall, and what criteria will be applied? One author suggests: “biological life, [genetics], brain development, ability to feel pain, consciousness . . . ability to form relationships, higher reasoning ability, and rationality.”<sup>197</sup>

Legal philosopher Joel Feinberg asserts without proving that, in the context of legal personhood, “an entity must have interests to have moral status.”<sup>198</sup> These interests “refer[] to an entity having ‘a sake or welfare of its own’” rooted in the capacity of sentience.<sup>199</sup> This definition is incomplete; for example, anencephalic infants are born without the capacity for sentience and yet are still considered persons with inherent dignity worthy of protection.<sup>200</sup> Another author rejects Feinberg’s interest-based model, advocating instead for the “general societal value in granting full legal personhood . . . to all human beings . . . at birth, regardless of the interests of the entity in question.”<sup>201</sup>

A complete discussion of legal personhood is beyond the scope of this Note; for now, it is enough for the reader to recognize the sophistication of

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192. *On this Day, the Roe v. Wade Decision*, CONST. CTR. (Jan. 22, 2021), <https://constitutioncenter.org/interactive-constitution/blog/landmark-cases-roe-v-wade> (“The decision has proven to be one of the most controversial cases in the Court’s history.”).

193. *Roe v. Wade*, 410 U.S. 113, 158 (1973).

194. Berg, *supra* note 188, at 369; LA. REV. STAT. § 9:123 (LEXIS through 2020 Sess.) (“An in vitro fertilized human ovum exists as a juridical person until such time as the in vitro fertilized ovum is implanted in the womb; or at any other time when rights attach to an unborn child in accordance with law.”).

195. Berg, *supra* note 188, at 373.

196. *Id.*

197. *Id.* at 375.

198. *Id.* at 376 (citing JOEL FEINBERG, HARM TO OTHERS 34 (1984)).

199. *Id.* (citing BONNIE STEINBOCK, LIFE BEFORE BIRTH: THE MORAL AND LEGAL STATUS OF EMBRYOS AND FETUSES 50 (2d ed. 2011)).

200. *Id.* at 377–78.

201. *Id.* at 378.

this topic. The complexity is exacerbated when attempting to reconcile the legal and religious views of personhood—a Herculean task not undertaken here. Courts have thus far struggled to define legal personhood in relation to “normal” human beings.<sup>202</sup> These struggles can only proliferate as technologists transgress the present boundaries of natural biological existence—in the form of therapeutics intended to treat maladies and enhancements designed to enlarge the range of human capability.

Just as legal practitioners have toiled with demarcating the genesis of life, so they have struggled with its denouement—as evidenced by the transmutation of the codification of “death” in recent decades.<sup>203</sup> The evolution of this definition is characterized by the transition from cardiac to neurological cessation, culminating in the highly charged and widely reported ordeal of Terri Schiavo in 2005.<sup>204</sup> Breathing can be prolonged almost indefinitely by heart-lung machines, ventilators, and other implements. Acknowledging these trends, some scientists have mused that contemporary death statutes must soon be amended to incorporate a definition rooted in “information-theoretic death,”<sup>205</sup> discussed below.

Assuming without deciding that these technological developments can serve some moral ends (*e.g.*, might the use of so-called living cadavers to facilitate organ transplantation be moral?), I will now illustrate that science and law have been engaged in an elaborate tango in the recodifying of death with remarkably unsatisfactory results.

The tort of wrongful death and its criminal counterpart—homicide—is probably more familiar to laypeople than the birth-related torts surveyed above, but its nuances are similar. Although the MSVSA references death throughout, its scribes did not see fit to propound even a working definition of this important term while simultaneously imposing requirements for “death registration.”<sup>206</sup> One law dictionary describes wrongful death rather paradoxically as “the death of a person as a result of the tortious conduct of

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202. See STEINBOCK, *supra* note 199, at 43, 50.

203. See Ben Sarbey, *Definitions of Death: Brain Death and What Matters in a Person*, 3 J.L. & THE BIOSCIENCES 743, 743 (2016) (surveying legal standards of “death” over the twentieth and twenty-first centuries).

204. See Josh Sanburn, *How Terri Schiavo Shaped the Right-to-Die Movement*, TIME MAG. (Mar. 31, 2015), <https://time.com/3763521/terri-schiavo-right-to-die-brittany-maynard>; *Schindler v. Schiavo* (*In re Schiavo*), 780 So. 2d 176, 177 (Fla. Dist. Ct. App. 2001).

205. SEBASTIAN SEUNG, *CONNECTOME: HOW THE BRAIN’S WIRING MAKES US WHO WE ARE* 271 (2012).

206. *Model State*, *supra* note 178, at 7.

another person . . . .”<sup>207</sup> The Wisconsin Appeals Court offers this equally circuitous description: “A wrongful death action is . . . for the benefit of certain designated classes of surviving relatives . . . to recover their own damages caused by the wrongful death of the decedent.”<sup>208</sup> As a point of comparison, the Model Penal Code codifies murder as criminal homicide “committed purposely or knowingly; or . . . committed recklessly under circumstances manifesting extreme indifference to the value of human life.”<sup>209</sup>

Each of these definitions require death as *sine qua non* but fail to define it with any precision. As mentioned above, the drafters of the MSVSA chose not to define death as they did live birth, although the text refers to death repeatedly in the context of vital statistics and recordkeeping.<sup>210</sup> For a definition of this term, I turn to the Uniform Determination of Death Act (UDDA) which adopted a hybrid view of brain and cardiopulmonary death that was subsequently endorsed by both the American Bar Association and American Medical Association.<sup>211</sup> The UDDA provides—with seductive, deceiving concision—that “a person can be declared dead when he or she has sustained either irreversible cessation of circulatory and respiratory functions or irreversible cessation of all functions of the entire brain.”<sup>212</sup>

These views of brain and cardiopulmonary death are a convenient legal fiction—one that is widely accepted<sup>213</sup>—but are troublesome considering that some patients diagnosed as “brain dead” may still be living: their circulatory function may not be “lost for good” and could be restored—either spontaneously or with external aid.<sup>214</sup> This modern view of brain death, whose adoption in statute was spurred by the promulgation of the UDDA, was conceived, in part, to “ensure a greater supply of organs” given the shortfall in

207. *Wrongful Death*, BOUVIER LAW DICTIONARY (Wolters Kluwer Bouvier Law Dictionary Desk ed. 2012).

208. *Brey ex rel. Johnson v. State Farm Mut. Auto. Ins. Co.*, 947 N.W.2d 205, 213 (Wis. Ct. App. 2020) (quoting *Miller v. Luther*, 489 N.W.2d 651, 652 (Wis. Ct. App. 1992)).

209. MODEL PENAL CODE § 210.2(1) (1962).

210. *See generally Model State*, *supra* note 178, at 2.

211. *See Sarbey*, *supra* note 203, at 743-46; PRESIDENT’S COMM’N FOR THE STUDY OF ETHICAL PROBS. IN MED. & BIOMEDICAL & BEHAV. RSCH., *DEFINING DEATH: MEDICAL, LEGAL AND ETHICAL ISSUES IN THE DETERMINATION OF DEATH* 73 (1981).

212. RAY D. MADOFF, *IMMORTALITY AND THE LAW: THE RISING POWER OF THE AMERICAN DEAD* 37 (2010) (“[The UDDA] has been adopted in forty-three states. States that have not adopted the [Act] have either adopted their own statutes or developed case law that allows the use of brain death as a standard for death. Brain death has also been adopted as a standard through much of the rest of the world.”).

213. *See id.*, at 36.

214. Seema K. Shah & Franklin G. Miller, *Can We Handle the Truth? Legal Fictions in the Determination of Death*, 36 AM. J.L. & MED. 540, 542 (2010) (citing D. Alan Shewmon, *Brain Death: Can It Be Resuscitated?*, 39 HASTINGS CTR. REP. 18, 18, 22 (2009)).

deceased donors relative to living donees.<sup>215</sup> To boost the supply further, and in response to the rise of the use of medical proxies, jurisdictions again moved the goalposts, “this time based on the irreversible cessation of circulatory and respiratory function (not the brain).”<sup>216</sup> This involves withdrawing artificial life support and waiting a pre-determined length of time after the last contraction of the heart—typically ranging from two to five minutes.<sup>217</sup> This range, however, is based less on scientific certainty than it is on professional discretion, and some physicians have sought to shorten it even further to increase the bounty of their human harvest.<sup>218</sup>

There are abundant scientific, legal, and moral criticisms of both whole brain death and irreversible cessation of cardiorespiratory function as the legal markers of mortality.<sup>219</sup> For example, should a mother who is braindead really be considered dead as she gives birth to a healthy child? These cases, while unusual, are documented in medical literature.<sup>220</sup>

The President’s Council on Bioethics conceded the unsatisfactory nature of these definitions in a December 2008 whitepaper, submitting a new definition—termed “total brain failure”—that classifies, using detached clinical sophistry, an organism as “alive when it continues to perform the ‘fundamental vital *work* of an organism—the work of self-preservation, achieved through the organism’s need-driven commerce with the surrounding world.”<sup>221</sup> This definition, while novel, is inadequate in that it is abstract (and thus difficult to apply in clinical settings) and in that it characterizes fetuses—which are “unquestionably alive”—as non-living.<sup>222</sup> The Council, conceding this defect, retreats to human intuition, attempting to argue “that although we have an intuitive understanding of death, this understanding is flawed because the reality of death is hidden from us by modern technology.”<sup>223</sup>

This reliance on intuition, unscientific as it may be, harkens to the famous “I know it when I see it” threshold test of obscenity invoked by Justice Potter Stewart in his concurring opinion in *Jacobellis v. Ohio*.<sup>224</sup> Information-

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215. *Id.* at 545–46.

216. *Id.* at 546.

217. *Id.*

218. *Id.* at 547–48.

219. *Id.* at 548.

220. *Id.* at 549.

221. *Id.* at 549–50 (quoting THE PRESIDENT’S COUNCIL ON BIOETHICS, CONTROVERSIES IN THE DETERMINATION OF DEATH 60 (2008)).

222. *Id.* at 550.

223. *Id.* at 551 (citing THE PRESIDENT’S COUNCIL ON BIOETHICS, *supra* note 221, at 50).

224. *Jacobellis v. Ohio*, 378 U.S. 184, 197 (1964) (Stewart, J., concurring).



theoretic death, broached above, is yet another technical (as opposed to moral) definition which has not yet gained widespread acceptance but which seeks to resolve the dilemma of reliance upon intuition (and its circularity) by codifying death as occurring “if the structures that encode memory and personality have been so disrupted that it is no longer possible in principle to recover them.”<sup>225</sup> While notionally interesting, this definition is not yet possible to apply with the level of certainty demanded in a clinical environment because physicians have no tool for ascertaining if those structures have been sufficiently “disrupted” or merely temporarily impaired.<sup>226</sup> If we struggle to define legal death in human beings, how then will courts in the future answer this challenge if humans divest themselves of their biological attributes in favor of technological substitutes? Further, how will we align this new legal definition (whatever that should be) with the moral and theological views of death?

By this point, I have intimated that even if the word “transhumanism” is new to the reader, its precepts are not; further, I have argued the development of key definitions of the elements of certain torts in the twentieth century portend similar developments in transhumanist law. The tensions in transhumanism mirror those in personhood generally: at what point are we prepared to draw the lines of birth and death for purposes of recognizing civil rights, property rights, murder, and other personhood-implicated topics?<sup>227</sup> These concerns cannot be adequately addressed until we have considered the issue of morality, continued below in Part III.

Jurists must be prepared to address policy issues to the extent that their legislative counterparts are unwilling to ponder them. For example, will people in developing countries be at a permanent, structural disadvantage when they are unable to access transhumanist therapeutics and enhancements? Likely yes, as evidenced by the current disparities in life expectancy as a barometer or proxy of access to quality, affordable healthcare.<sup>228</sup> To answer these questions—or at least formulate them more coherently—it is first

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225. Ralph Merkle, *Information-Theoretic Death*, MERKLE.COM, <https://www.merkle.com/definitions/infodeath.html> (last visited Aug. 27, 2021).

226. *Id.*

227. See F. Patrick Hubbard, “Do Androids Dream?”: *Personhood and Intelligent Artifacts*, 83 TEMP. L. REV. 405, 407–08 (2011) (proposing a three-part test for granting a legal right to personhood to a non- or quasi-human intelligence); see also Bert-Jaap Koops et al., *Bridging the Accountability Gap: Rights for New Entities in the Information Society?* 11 MINN. J.L. SCI. & TECH. 497, 499–500 (2010) (proposing to attribute legal personhood to non-human entities by analogizing to “associations, funds, or even ships”).

228. *The Global Health Observatory*, WORLD HEALTH ORG., [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/life-expectancy-at-birth-\(years\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/life-expectancy-at-birth-(years)) (last visited Aug. 27, 2021) (noting a fourteen-year difference in life expectancy at birth between those born in Europe and Africa).

necessary to develop a framework for qualifying the morality of transhumanist technological development.

### III. A MORAL IMPERATIVE: FRAMING THE PERSONHOOD DILEMMA IN TRANSHUMANISM

In 1935, chemical manufacturing mammoth DuPont introduced a slogan that encapsulated twentieth century modernist attitudes towards self-improvement and the human condition: “better living through chemistry.”<sup>229</sup> It is doubtful that the advertising agency executives at New York firm McCann-Erickson appreciated the enduring significance when they introduced this pithy aphorism through a twelve-page insert in the *Wall Street Journal* on April 28th of that year.<sup>230</sup> Indeed, when the slogan was retired sixty-three years later, its replacement—“The miracles of science”—retained the same flavor of unbridled optimism that punctuated DuPont’s public relations efforts during the preceding six decades.<sup>231</sup> By defect or design, this choice of the word “miracle” echoed the pervasive mentality that man had supplanted God as the source of miracles through self-directed evolution and technological novelties; in the context of transhumanism, this tension is durable and escalating.<sup>232</sup>

While lawyers—and laypersons—have probably given some thought to this topic in passing, few have performed the thoughtful abstraction and research necessary to formulate a logically-reasoned, self-consistent stance on the morality of transhumanism. Whereas Parts I and II above are primarily objective, the remainder of this Note is subjective: it attempts to formulate a succinct moral stance on transhumanism and argues that, in its moderated form and subjected to certain provisos, it may yet be compatible with natural law.

The philosophical and theological objections to modern transhumanism, as properly distinguished from historical eugenics discussed above, are multifarious.<sup>233</sup> The most recurrent philosophical objections to transhumanism

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229. Sean Callahan, *DuPont Replaces 1935 Tagline to Reflect Corporate Change*, ADAGE (June 1, 1999), <https://adage.com/article/btob/dupont-replaces-1935-tagline-reflect-corporate-change/247761>.

230. *Id.*

231. *Id.*

232. See generally Ronald Cole-Turner, *The Singularity and the Rapture: Transhumanist and Popular Christian Views of the Future*, 47 ZYGON 777, 778 (2012) (“[We] turn[] to the concept of a coming technological singularity . . . associated with the writings of Ray Kurzweil . . . and others who foresee the rise of superhuman intelligence. . . . [T]hese views . . . are not void of themes that resonate with religious overtones.”).

233. McNamee & Edwards, *supra* note 92, at 514 (“Critics point to consequences of transhumanism, which they find unpalatable.”).

include: (1) the loss of commonality between “normal” and enhanced humans,<sup>234</sup> (2) exacerbated wealth inequality,<sup>235</sup> (3) interference with natural conception,<sup>236</sup> (4) a reduction or “imperialising” of autonomy,<sup>237</sup> and even (5) the destruction of human morality altogether.<sup>238</sup> These perceived ills are symptoms of the paradigmatical legal riddle introduced in Part II: personhood.<sup>239</sup>

Many critics of transhumanism concede that these moral ills—as numerous and poignant as they may be—should not preclude outright the more “moderate” approach of applying transhumanist technology in a medically therapeutic context; for example, the gene therapy Luxturna described in Part I as a treatment for a hereditary form of blindness for newborn children.<sup>240</sup> This position is re-visited below and forms the balance of this Note’s argument.

In their collective retort, proponents of transhumanism point to: (1) a generalized (if unequal) increase in the quality of living that has facilitated through technological development—as quantified by the increased longevity made possible by contemporary medicine,<sup>241</sup> (2) an opportunity to proactively eliminate debilitating defects inherent in the human genome that result in hereditary disabilities,<sup>242</sup> and most profoundly that (3) “transhumanism presents a way in which moral status can be shown to be bound to intellectual

234. *Id.* (“One possible consequence feared by some commentators is that, in effect, transhumanism will lead to the existence of two distinct types of being, the human and the posthuman.”).

235. *Id.* (“[C]ritics may argue that transhumanism will increase inequalities between the rich and the poor.”).

236. *Id.* at 515 (“[I]nterfering with the process of human conception, and by implication human constitution, deprives humans of the ‘naturalness which so far has been a part of the taken-for-granted background of our self-understanding as a species’ . . .”).

237. *Id.* (“Theological critics especially, but not exclusively, object to what they see as the imperialising of autonomy.”).

238. *Id.* (“Some radical critics of transhumanism see it as a threat to morality itself. This is because they see morality as necessarily connected to the kind of vulnerability that accompanies human nature.”).

239. See Pope John Paul II, *Veritatis Splendor* [Encyclical Letter Regarding Certain Fundamental Questions of The Church’s Teaching] ¶ 13 (1993) [hereinafter *Veritatis Splendor*] (“In this commandment we find a precise expression of the singular dignity of the human person . . .”).

240. McNamee & Edwards, *supra* note 92, at 515 (“If we argue against the idea that the good cannot be equated with what people choose simpliciter, it does not follow that we need to reject the requisite . . . technology outright. . . . [M]oderate transhumanists . . . see [it] as an opportunity to enhance the general quality of life for humans . . .”).

241. *Id.* at 514 (“The use of technology to improve humans . . . . [T]he modern biomedical enterprise is another example of a project that aims at generating this good too.”).

242. *Id.* (“Instead of this being left to the evolutionary process and its exploitations of random mutations, transhumanism [permits] tailoring the development of human beings to an ideal blueprint. Precisely whose ideal gets blueprinted is a point that we deal with later.”).

capacity rather than to . . . human vulnerability in the capacity of embodiment.”<sup>243</sup> It is not coincidence that each of these purported benefits implicate personhood.

These competing views—proponent and opponent—fall along a spectrum which has been described as the “[t]wenty-first century’s defining ideological polarity,”<sup>244</sup> and is asserted to supplant the left-right political divide that has defined policy discourse since at least the seventeenth century.<sup>245</sup> On this “ideological axis” exist those opponents who are “precautionary” at one end and those proponents who adopt a “proactionary” stance at the other.<sup>246</sup> This spectrum has been described as one of “regulatory focus,” where policy makers will compete, with the precautionary interests advocating for increased regulation (or outright prohibitions) on transhumanist technologies<sup>247</sup> and proactionary evangelists jockeying for an uninhibited regulatory landscape not unlike the Wild West, and who view transhumanism not only as a moral good but as a non-negotiable imperative.<sup>248</sup>

As with any spectrum, there is a middle view (and perhaps several gradations therein); here, this mezzanine position stakes the claim that moderate transhumanism can be good when it is subjected to necessary checks and encumbrances to prevent runaway outcomes.<sup>249</sup> Moderate transhumanism advocates primarily for biomedical applications of transhumanism, disfavoring exotic modifications or extreme alterations; it favors *maintaining*, not *replacing* the basic, immutable components of biological mortality grounded in an objective view of personhood.<sup>250</sup>

With these opposing positions in mind—precautionary and proactionary—the task now is to adjudicate their arguments within the legal

243. *Id.*

244. STEVE FULLER & VERONIKA LIPINSKA, *THE PROACTIONARY IMPERATIVE: A FOUNDATION FOR TRANSHUMANISM* vii, 12 (2014).

245. *Id.* at 12.

246. *Id.* at 25–26.

247. *Id.* at 26 (“[P]roactionaries are quite open about their willingness to sacrifice a significant part of present-day conditions to enable the future to stay open—for them, even when things go horribly wrong, it is less an outright loss than a learning experience. In short, whereas precautionaries regard significant risk-taking as ultimately corrosive to our freedom, the limits of which are already evidenced in the actual world, proactionaries regard risk-taking as necessary to discover the limits of what is possible . . .”).

248. *Id.* (“Proactionaries often write as if science and technology have historically charted a path of unmitigated success. For them all that inhibits the indefinite extension of our distinctly human powers is ignorance and fear, both of which are seen as remediable with greater knowledge.”).

249. McNamee & Edwards, *supra* note 92, at 515 (“Against the more moderate transhumanists, who see transhumanism as an opportunity to enhance the general quality of life for humans, it is nevertheless true that their position presupposes some conception of the good.”).

250. *Id.*

construct of personhood harmoniously and without performing mental gymnastics. This feat is accomplished, in part, by citing to the steady and incremental (if not wholly efficacious) development of personhood jurisprudence introduced in Part II. Next, I cite to Pope John Paul II's encyclical *Veritatis Splendor*, and chiefly, its steadfast rejection of moral relativism in favor of universal morality.<sup>251</sup> Finally, I will examine the work of bioethicist James F. Keenan to propose a new framework for classifying transhumanist technologies as a function of two variables: (1) their therapeutic (as opposed to enhancement) value (that is, whether they operate within the strictures of current "normal" human capability instead of expanding it) and (2) their respect for corporeality (that is, whether they maintain or diminish the significance and dignity of the human body).

*Veritatis Splendor*, addressed to the world's bishops,<sup>252</sup> repudiates the "trends in moral theology that lead . . . to relativism, subjectivism, and individualism" which are viewed as "undermining the universality and immutability of the moral commandments."<sup>253</sup> The appeal of this encyclical is not limited to Catholic audiences, and its praise of moral absolutism in the face of cultural relativism is required reading for moral thinkers of any faith (or no faith) who do not wish "to see the West collapse any further into a morass of moral incoherence."<sup>254</sup> Although Pope John Paul II was probably not considering transhumanism *in specie*, his prescient teachings in this encyclical readily lend themselves to some of the issues undergirding transhumanism—especially to the extent that transhumanism is characterized as a part of "man's tireless search for knowledge in all fields."<sup>255</sup> Paragraph 48 is worthy of special mention, which implores the reader "to consider carefully the correct relationship existing between freedom and human nature, and in particular *the place of the human body in . . . natural law*."<sup>256</sup>

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251. See *Veritatis Splendor*, *supra* note 239, ¶ 1 (Aug. 6, 1993) ("But no darkness of error or of sin can totally take away from man the light of God the Creator. In the depths of his heart there always remains a yearning for *absolute truth* and a thirst to attain full knowledge of it.") (emphasis added).

252. Maura Anne Ryan, "Then Who Can Be Saved?": *Ethics and Ecclesiology in Veritatis Splendor*, in *VERITATIS SPLENDOR: AMERICAN RESPONSES 2* (Michael E. Allsopp, ed., 1995).

253. *Introduction*, *supra* note 252, at ix.

254. Samuel Gregg, *The Truth Is Still Splendid: Veritatis Splendor at 25*, THE CATH. WORLD REP. (Aug. 2, 2018), <https://www.catholicworldreport.com/2018/08/02/the-truth-is-still-splendid-veritatis-splendor-at-25>.

255. See *Veritatis Splendor*, *supra* note 239, ¶ 1 ("In the depths of his heart there always remains a yearning for absolute truth and a thirst to attain full knowledge of it. This is eloquently proved by man's tireless search for knowledge in all fields.")

256. *Id.* ¶ 48.

A freedom which claims to be absolute ends up treating the human body as a raw datum, devoid of any meaning and moral values until freedom has shaped it in accordance with its design. Consequently, human nature and the body appear as *presuppositions or preambles*, materially *necessary* for freedom to make its choice, yet extrinsic to the person, the subject and the human act. Their functions would not be able to constitute reference points for moral decisions, because the finalities of these inclinations would be merely “*physical*” goods, called by some “pre-moral.” To refer to them, in order to find in them rational indications with regard to the order of morality, would be to expose oneself to the accusation of physicalism or biologism. . . . [T]he tension between freedom and a nature conceived of in a reductive way is resolved by a division within man himself.

This moral theory does not correspond to the truth about man and his freedom. It contradicts the *Church’s teachings on the unity of the human person*, whose rational soul is *per se et essentialiter* the form of his body. The spiritual and immortal soul is the principle of unity . . . whereby it exists as a whole—*corpore et anima unus*—as a person.<sup>257</sup>

At first blush, this teaching would seem to be a categorical rejection of transhumanism, primarily because of what might be perceived as transhumanism’s handling of the body as a disposable vessel.<sup>258</sup> Indeed, this would seem to presage the sort of “throwaway culture” derided by Pope Francis.<sup>259</sup> This incongruence is most evident at the extreme end of the transhumanist spectrum—so distinct from transhumanism that it is denoted as posthumanism.<sup>260</sup> Posthumanism, explained above, is an extreme variant of transhumanism with its own vocabulary, goals, and advocates; it drastically seeks “the erasure of embodiment . . . so that ‘intelligence’ becomes a property of formal manipulation of symbols rather than enaction in the human lifeworld.”<sup>261</sup> This fanciful description espouses the esoteric belief that

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257. *Id.* (citations omitted).

258. See generally Cory Andrew Labrecque, *The Glorified Body: Corporealities in the Catholic Tradition*, 8 RELIGIONS, 166, 175 (2017), <https://www.mdpi.com/2077-1444/8/9/166/htm> (“It is on this point that transhumanist philosophy and the Catholic tradition find little accord. For the former, the human body and, ultimately, all things material are manipulable, disposable, and replaceable. For the latter, the human body is essential for an identity rooted in communion that survives even the sting of death.”).

259. See Pope Francis, *Laudato Si’* ¶ 43, [Encyclical On Care for Our Common Home] (2015) (“So we cannot fail to consider the effects on people’s lives of environmental deterioration, current models of development and the *throwaway culture*.”) (emphasis added).

260. Francesca Ferrando, “*The Body*”, in POST- AND TRANSHUMANISM: AN INTRODUCTION 213, 219 (R. Ranisch & S.L. Sorgner, eds., 2014).

261. *Id.*

humans will transcend their corporeal form and will exist in a state of pure energy, unshackled from the perceived shortcomings of mortality.<sup>262</sup> That supposition is so divorced from the contemporary understanding of the human condition that it cannot presently be reconciled or defended; indeed, it is so far beyond the form of near-transhumanism detailed in the earlier sections of this Note that I cannot begin to construct a framework in which to analyze its morality or lack thereof. Therefore, in compromise, I must deliberately curtail this discussion of morality to those manifestations of transhumanism which not merely tolerate but celebrate the corporeal human form—where cosmetic differences are not imperfections to be “buffed out” but are instead exemplars on a bountiful spectrum of natural diversity.

With this conjecture in mind, bioethicist James F. Keenan argues that perhaps transhumanism and Catholic teachings may yet be reconciled, at least on the moderated end of the biological-technological and therapeutic-enhancement spectrums presented above.<sup>263</sup> Trenchantly, Keenan observes that “[c]ontemporary theologians are helpful as they stress that . . . the moral task [of each individual] . . . is to realize the anthropological gifts that we have been given . . . .”<sup>264</sup> Keenan readily concedes that “[f]or some, the right to improve upon humanity belongs only to the Creator. Any such attempts are seen as rebellious, as attempts to play God.”<sup>265</sup> On the topic of therapeutics, Keenan recognizes that therapy unavoidably requires certain normative judgments:

In this context, we classify persons with disabilities as not normal and therefore we believe that they will not become a full human being until they become normal. . . . Is having hearing, four limbs, and being at least five feet tall what we consider what all humans ought to become?<sup>266</sup>

Keenan’s answer is oblique, acknowledging the “valorization” of normality at the expense of biodiversity in our species while impliedly

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262. *Id.* at 220; *see also* Bostrom, *supra* note 6, at 107–08 (“As we seek to peer farther into posthumanity, our ability to concretely imagine what it might be like trails off. If, aside from extended healthspans, the essence of posthumanity is to be able to have thoughts and experiences that we cannot readily think or experience with our current capacities, then it is not surprising that our ability to imagine what posthuman life might be like is very limited.”); *see also* 2001: A SPACE ODYSSEY (Stanley Kubrick Productions 1968) (portraying the hyper-evolution of a human male into a state of energy unshackled from his corporeal form).

263. Keenan, *supra* note 170, at 155.

264. *Id.* at 164.

265. *Id.* at 162.

266. *Id.* at 163.

approving the use of some therapeutics—namely prosthetics.<sup>267</sup> He seems reticent to express any opinion on the therapeutic use of transhumanist technology in the context of genetic counseling, although the attentive reader discerns his trepidation on that front.<sup>268</sup>

On enhancement—the somewhat more fantastical sort which advocates not merely “correcting” deviations from the mean but expanding the range of human capabilities beyond what is presently achievable—Keenan notes that “[o]ur self-determination is not, ought not, and cannot be conceived either over ourselves or over nature. We are within nature. We will no more subdue nature than we will subdue ourselves. But, we are capable of transforming nature.”<sup>269</sup> Keenan rejects the blunt “dividing line” between therapeutic and enhancement modes of transhumanism; instead, he conceives of self-guided enhancement as a moral problem when “it is about attempts to dominate nature, neighbor, or self.”<sup>270</sup>

In this context, Keenan appreciates that access to enhancement technologies “may perpetuate existing disparities in health care access” but that this risk should be adjudged on a fact- and technology-specific basis to determine if enhancement technologies are morally compatible with theological teaching; while his treatment stops far short of an unqualified endorsement, he signals his willingness to provisionally consider enhancements that are rooted in “humane purposes.”<sup>271</sup> Exactly what qualifies as a humane purpose is left unelucidated, though his conclusions presuppose that some do exist, but in order to judge “their ethical worth, we need to ask, which enhancements for what purposes at what cost funded by whom?”<sup>272</sup>

Keenan neatly summarizes his position, offering a tacit—if incomplete—solution to the conundrum: “Where transhumanists leave the human body behind, they leave all Christians behind.”<sup>273</sup> Thus, while therapeutic uses of transhumanist technologies may be generally—if not universally—desirable, enhancement technologies, while inherently morally hazardous, should not be

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267. *Id.* at 162 (“Whether we talk about genetic manipulation or a simple question of prosthetics, we are often faced with the same dividing line: restoring or healing versus improving, or the therapeutic vs. enhancement.”).

268. *Id.* at 163 (“In turn, the normal emerges as an undynamic but definitely biased standard that enjoys tacit approval. . . . The question regarding the normal is even more problematic when we face genetic counseling in prenatal diagnosis.”).

269. *Id.* at 164.

270. *Id.* at 165.

271. *Id.* at 165–66.

272. *Id.* at 166.

273. *Id.* at 161–62.



entirely foreclosed, at least so long as they do not “leave the human body behind.”<sup>274</sup>

With this simple framework in mind, I now apply it to some of the discrete transhumanist technologies introduced in the preceding parts of this Note by plotting them along the corporeal x-axis and enhancement-therapy y-axis in Figure 1 *infra*.

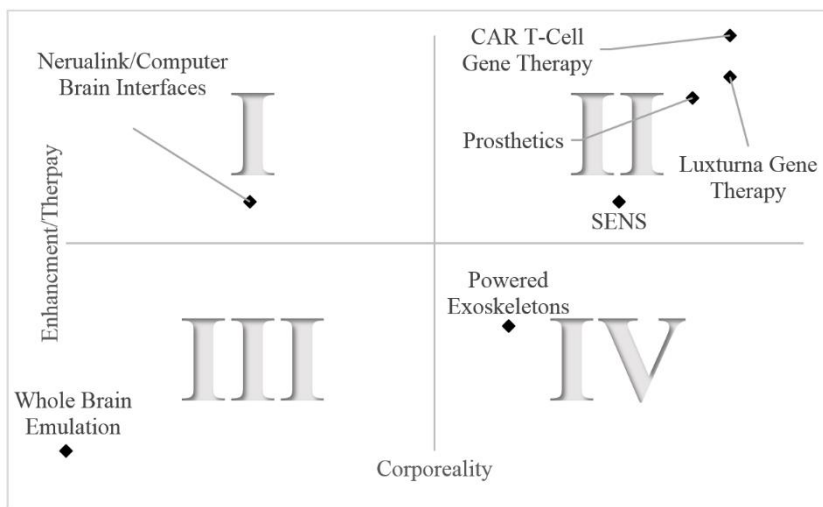


Figure 1

Technologies, which fall into quadrant II, have high therapeutic value and high corporeality—that is, they do not “leave the human body behind,”<sup>275</sup> but instead, they work to restore the functions of the “normal” body.<sup>276</sup> In this tentative framework, I might characterize these technologies as a qualified moral good to the extent they ameliorate disabilities created by physical impairments (*e.g.*, blindness). Conversely, technologies in quadrant III are enhancements—not therapies—and dispense with the body in whole or in part. Technologies in this quadrant are morally objectionable under this framework.

274. *Id.* at 161.

275. *Id.*

276. This Note does not purport to resolve the complex issue of “valorization” of normality discussed previously. *See* Keenan, *supra* note 170, at 163. Merely, it accepts that such valorization is widespread without staking a claim on its validity; defining what is “therapeutic” and “enhancement” in absolute terms is made difficult by the rich, natural variation in the tapestry of human form; as Keenan articulates, *therapies* aim to ameliorate impairments to level the playing field; *enhancements* seek to add entirely new “features” outside human capability altogether. *Id.*

Those technologies in quadrants I and IV are neither always good nor evil; they must be evaluated on the totality of the circumstances. In so judging “their ethical worth, we need to ask, which enhancements” (or therapies) “for what purposes at what cost funded by whom?”<sup>277</sup>

Transhumanism and its component technologies are less of an answer than a question—or a series of questions.<sup>278</sup> Using this rudimentary framework to attempt to answer the question of morality in objective terms honors the spirit of the Universal Declaration of Human Rights introduced above. To the extent that transhumanists adopt a morally objective stance, advocating for those technologies which acknowledge and celebrate the inherent dignity of every life, they may yet enjoy support among theologians<sup>279</sup> and jurists.<sup>280</sup> However, should they reject natural law, capitulate to moral and cultural relativism, and attempt to “rise above the petty morals of religious orthodoxy and be sustained by [their] own value system,”<sup>281</sup> they will likely fail. In this regard, transhumanist thinkers would be well served to reject Nietzsche’s *übermensch* and study the views of his compatriot and contemporary, Fyodor Dostoevsky.<sup>282</sup>

In concluding this part, I have attempted to demonstrate that transhumanism *can be* moral when it is subjected to certain safeguards and qualifications—which have yet to be fully developed but which will likely

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277. *Id.* at 166.

278. See Denys Nevozhai, *Transhumanism and the Questions It Raises*, MEDIUM (Apr. 3, 2017), <https://medium.com/@dnevozhai/transhumanism-and-the-questions-it-raises-51d90b6e6804> (“What will the economics look like? How will all these technologies benefit corporations who will develop this technology?”).

279. See Brian Patrick Green, *Transhumanism and Roman Catholicism: Imagined and Real Tensions*, 13 THEOLOGY & SCI. 187, 187 (2015) (“Transhumanists have asserted that religious people would both oppose life extension and allowing people with extended lives to die. In this paper, coming from a Roman Catholic perspective, I refute four myths associated with these claims . . . .”); *but see* Adrian Calderone, *Transhumanism*, CATH. CULTURE (June 2008), <https://www.catholicculture.org/culture/library/view.cfm?recnum=8384>.

280. See Michael Perry, *Moral Knowledge, Moral Reasoning, Moral Relativism: A “Naturalist” Perspective*, 20 GA. L. REV. 995, 995, 1009 (1986) (arguing that courts have a duty to discern and apply universal moral standards and reject moral relativism, especially in a political context).

281. *Dostoevsky: How the Great Author Dismissed Moral Relativism*, ALASTAIRMORDEY.COM, <https://alastairmordey.com/dostoevsky-how-the-great-author-dismissed-moral-relativism> (last visited Feb. 11, 2022).

282. *Id.* (“In *Crime and Punishment*, Dostoevsky shows us that the taking of a life to prove a point, or to prove that one can exist as a post-moral Superman, is a horrific and arrogant interjection into the territory of the creator—whatever that creator is. For Dostoevsky, the existence of *an independent moral force* is a given. These are natural laws—sea bed laws—savannah laws—they are ancient, primal, indestructible.”); *see generally* FYODOR DOSTOEVSKY, *CRIME AND PUNISHMENT* 742–43 (Constance Garnett, trans., Dover Publications 2001) (1866).

follow the template of the development of personhood jurisprudence in the twentieth century. In developing these necessary safeguards, proponents should advocate for those technologies which are therapeutic (as opposed to purely enhancing) and which revere (rather than defile) the body. Moderate therapeutic applications of transhumanism may not only be tolerable but could be laudable so long as they do not seek to obviate corporeality and mortality; further, they must not attempt to supplant the edicts of natural law with manmade technocratic ideals.

Even if the reader chooses to reject this view, this Note has at least suggested some moral considerations likely to arise in the near-term by providing readers with a beginner's rubric—perhaps an appetizer in what will become a multi-course meal. Regardless, the reader should now enjoy a more complete view on the topic, whatever their personal stance on its validity or morality.

### CONCLUSION

Transhumanism is not new, and its moral and legal concerns have already taken root. While the terminology may be novel, transhumanism as a philosophy and its constituent technologies trace their heritage not to the horrific legacy of eugenics but instead to the advent of plastic surgery and other noble quality-of-life endeavors in the mid-twentieth century. Those technologies and their influence on personhood are familiar, and their threads have already been woven into law—most especially, though not exclusively, in torts.

The impact of transhumanism will not terminate there. As technological developments continue at a geometric pace, transhumanist issues will expand into other domains of law, striking at what is perhaps the most elemental topic in all jurisprudence: personhood. To comport with a universal, objective view of morality, transhumanism should not attempt to effectuate a change in human nature or to extinguish it by supplanting natural law with manmade ideals. Nor should its practitioners enter a Faustian compact by substituting their human worth for technological novelty or some other perceived temporal benefit.<sup>283</sup> Legal practitioners and moral thinkers should actively encourage a moderate form of transhumanism, or at the very least, tolerate it so long as it

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283. JOHANN WOLFGANG VON GOETHE, *FAUST* 8, 9 (Bayard Taylor, trans.) (1832) (describing the plight of a successful man who trades his soul for decadent, hedonistic pleasures and unlimited knowledge).

serves “the moral growth of man.”<sup>284</sup> Its advocates must concede that human freedom is not an end unto itself, cannot be a source of values, and will serve immoral ends when unhinged from the immutable natural law—all while recognizing that “[h]uman freedom and God’s law are not in opposition; on the contrary, they appeal one to the other.”<sup>285</sup> In summation, practitioners should reject any form of transhumanism—and probably every form of posthumanism—that prizes technological development as its own end or that would seek to “leave the human body behind.”<sup>286</sup> In any event, tests of the degrees of worthiness based on the functionality of an individual’s capabilities must be avoided under any circumstance, respecting the dignity inherent in each person’s life while maintaining “the relationship between human beings and the state,” carefully avoiding the trap of commoditizing human life by “making the former just tools at the service of the latter.”<sup>287</sup>

Thoughtful practitioners have an opportunity—even an imperative—to recognize the timeliness of this topic and advocate for well-reasoned, moral outcomes. The alternative—acquiescence by inaction—is unacceptable. By cultivating an awareness and interest in this topic now, attorneys will be better equipped to address the subject intelligently, empowered to argue against decisions that are morally repugnant, and advocate for those outcomes which protect and honor the unalienable, immutable worth of the most vulnerable minority of all: the individual.<sup>288</sup>

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284. See *Veritatis Splendor*, *supra* note 239, ¶ 17 (“Jesus’ conversation with the young man helps us to grasp the conditions for the moral growth of man, who has been called to perfection . . . . Perfection demands that maturity in self-giving to which human freedom is called.”).

285. *Id.*

286. Keenan, *supra* note 170, at 161.

287. See generally *Editor’s Note* to JACQUES MARITAIN, *MAN AND THE STATE* (1951), <https://www.panarchy.org/maritain/state.html>.

288. See Ayn Rand, *America’s Persecuted Minority: Big Business*, in *CAPITALISM: THE UNKNOWN IDEAL* 40, 60–61 (2d ed. 1967) (“[T]he smallest minority on earth is the individual. Those who deny individual rights cannot claim to be defenders of minorities.”).