A Thomistic Proposal to Move Beyond the Posthuman and Toward Human Perfection

The search for human perfection as a constant quest for improvement is shared by both the Thomistic natural law virtue ethics tradition and the transhumanist movement. However, divergent notions of human nature and human telos profoundly differentiate such efforts to transform humanity positively. The present work clarifies the meaning of the natural moral law tradition and distinguishes it from misunderstandings that could arise from reducing nature to biological, non-rational processes. Next, the work examines how a proper notion of human nature and the goods that fulfill such nature can guide constructive debate about which types of biomedical enhancement to accept as helpful to human flourishing and which to set aside as detrimental to authentic growth. Without an objective standard of human nature by which to judge enhancement proposals, biotechnical changes can no longer be distinguished into categories of improvement or diminishment. This text shows why both bioconservative critics of human enhancement and transhumanist advocates for radical biotechnological alterations present impoverished visions of human nature’s capacities for transformation and perfection. In contrast, Thomism has the intellectual resources to overcome static notions of human nature and can correct the philosophical imprecisions involved in contemporary transhumanist discourse about posthumanity. This work, therefore, provides the necessary anthropological foundations to explore the role that virtues can play in fulfilling human nature’s dynamic orientation toward perfection.

#Human perfection, #transhumanism, #posthumanism, #Thomism, #natural moral law, #virtue ethics
La búsqueda de la perfección humana como un afán de mejora constante es compartida tanto por la tradición ética de la virtud de la ley natural tomista como por el movimiento transhumanista. Sin embargo, nociones divergentes de la naturaleza humana y de su telos diferencian profundamente ambos esfuerzos por transformar positivamente la humanidad. El presente trabajo aclara el significado de la tradición de la ley moral natural y la distingue de los malentendidos que podrían surgir de una reducción de la naturaleza a procesos biológicos no racionales. A continuación, el artículo examina cómo una noción adecuada de la naturaleza humana y de los bienes que satisfacen dicha naturaleza pueden orientar un debate constructivo sobre qué tipos de mejora biomédica han de aceptarse como útiles para el florecimiento humano y cuáles deben ser dejados de lado por ser perjudiciales para el auténtico crecimiento. Sin una norma objetiva de la naturaleza humana con la cual juzgar las propuestas de mejora, los cambios biotécnicos ya no pueden distinguirse en categorías de mejora o disminución. El texto muestra por qué tanto los críticos bioconservadores de la mejora humana como los defensores transhumanistas de las alteraciones biotecnológicas radicales presentan visiones empobrecidas de las capacidades de transformación y perfección de la naturaleza humana. En contraste, el tomismo tiene los recursos intelectuales para superar las nociones estáticas de la naturaleza humana y puede corregir las imprecisiones filosóficas del discurso transhumanista contemporáneo sobre la posthumanidad. Este trabajo, por tanto, proporciona los fundamentos antropológicos necesarios para explorar el papel que las virtudes pueden desempeñar en el cumplimiento de la orientación dinámica de la naturaleza humana hacia la perfección.

#perfección humana, #transhumanismo, #posthumanismo, #tomismo, #ley moral natural, #ética de la virtud.

1. Thomism and transhumanism’s shared pursuit of perfection and divergent visions of the telos of human nature

In a world beset by war, illness, suffering, and death, both transhumanism and Thomism are committed to constant progress toward an ever-more perfect human life.1 As the historian of

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1 For a recent critique of transhumanism’s quest for perfection that concludes that its efforts will be more damaging than beneficial to mankind, see Koch (2020). The same author notes the limits of the materialist Darwinian anthropology of secular transhumanism and the conflictive individualism it engenders in Koch (2018). The philosopher also expresses concern about the negative eugenic mentality of the movement in Koch (2010). For an affirmation of the goodness of seeking human perfection that also expresses some reservations about the anthropology that underlies transhumanist conceptions of such a quest, see Colombetti (2014, pp. 369-370).
transhumanism Stefan Lorenz Sorgner notes, «the transhumanist discourse necessarily requires reflection on the meaning of perfection.»

Similarly, another pair of scholars on the intellectual genealogy of transhumanism conclude, «since transhumanism claims to generate not just “better people” but “perfect” people who will enjoy unlimited happiness, it is important to examine it in the context of Western reflections on perfection.»

In this work, I offer precisely such an engagement between traditional wisdom virtue-based happiness and contemporary transhumanist aspirations for technocentric human betterment. The transhumanist stress on the pursuit of perfection, «however, is ambiguous because it employs various meanings of perfection.»

As the present study confirms, «when one examines the transhumanist discourse closely… one can easily see that transhumanist philosophers hold different and even incompatible notions of the good.» I will both examine points of common ground the anthropological differences underlying the points of divergence on notions of the good life found in the two movements. I will eventually proposal the Thomistic natural law virtue ethics paradigm as a reliable guide to the human perfection transhumanism correctly seeks.

While transhumanism and Thomism recognize that the achievement of an entirely perfect state will forever elude man’s strivings, both worldviews are committed to constant progress toward an ever-better life. Bioethicist Arthur Caplan rightly bemoans mischaracterizations of secular enhancement advocates as naive believers that technology will soon relieve all of man’s problems and transition humanity into pure bliss.

He notes that secularists seek improvement and are aware that full perfection will never be achieved by them in this life. I affirm Caplan’s corrective and think that his realism harmonizes with many Thomistic presentations of human perfection. However, the point stands that both Thomists and secular transhumanists pursue perfection in the sense of working constantly toward the ideal state of human fulfillment. In this sense, both outlooks can be said to pursue perfection without succumbing to unrealistic demands for immediate conquest of all human imperfection. The transhumanist movement opts for an immanent development of man’s capacities through technological advances as the primary means for perfecting humanity and the exclusive path to some capacities otherwise unobtainable.

While open to incorporating some of the human benefits obtainable through certain technological breakthroughs, Thomists insist that authentic perfection also entails a moral development through virtue. This section of the present work will focus on how an appreciation for objective human nature provides a reliable standard for bioethical judgment for navigating the various efforts to perfect man through biotechnical enhancement.

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3 Tirosh-Samuelson and Hurlbut (2016, p. 18).
4 Sorgner (2016, p. 155).
7 See Gouw (2018); Green (2018); Hopkins (2008); Persson and Savulescu (2019); Tirosh-Samuelson (2018).
8 On different approaches to the moral normativity of human nature, see McKenny (2018, pp. 1-24).
Some transhumanists, however, express discomfort with the notion that their projects are dedicated to human perfection. For instance, a prominent transhumanist seems to dispute the shared quest for perfection when he argues that the commitment to perpetual progress and self-improvement «clearly express the implementation of transhumanism as being a continual process and not about seeking a state of perfection.»\textsuperscript{9} The same author likewise notes that «transhumanism reflects the Enlightenment commitment to meliorism and rejects all forms of apologism — the view that it is wrong for humans to attempt to alter the conditions of life for the better.»\textsuperscript{10} More resists an outdated, fixed understanding of humanity. He thus argues that dedication to enhancement technology does not imply «that the goal is to reach a final, perfect state. The contrary view is made explicit in the transhumanist concept of extropy — a process of perpetual progress, not a static state.»\textsuperscript{11}

However, More’s emphasis on constant progress is not incompatible with but rather an integral part of the pursuit of perfection from both the Thomist and secular perspectives. The various popular forms of enhancement may not independently provide the satisfaction of the transhumanist’s every desire. Still, the enhancement projects do advance human evolution toward an eventual posthuman perfection in the unknown future. Transhumanists rightly recognize that their vision of a new superior state will not be realized instantaneously but through steps. They also rightly acknowledge that taking positive steps to improve some limited access of one of man’s functions is a limited but real part of a larger project to elevate him to a higher state. Similarly, Thomists admit that the path of virtue development is a long, sometimes arduous process that requires unwavering vigilance. Free choices of human goods bring daily progress, but vicious behaviors can bring about regression from the perfection of all of man’s faculties. However, an ideal of human perfection provides an indispensable orientation to the Thomist who seeks growth in virtue even as he humbly admits that he is a work in progress from crib to grave.\textsuperscript{12}

Likewise, when Catholics speak of religious persons in a state of perfection, they do not mean to say that the profession of vows automatically removes one’s sins and need for constant growth. Instead, they mean that one has devoted oneself to a state of life that favors ongoing daily growth

\textsuperscript{9} More (2013, p. 5).
\textsuperscript{10} More (2013, p. 14).
\textsuperscript{11} More (2013, p. 14).
\textsuperscript{12} Aquinas helpfully distinguishes between three senses in which one can be perfect in his life. First, absolute perfection is proper to God alone, the source and plenitude of all being. Second, the creature’s perfect response to the Creator whereby the affective faculty always tends toward God as the Perfect Being worthy of all love is only realized in the beatific vision of Heaven. Third, the habitual removal of obstacles to the love of God through a resistance to the mortal sins and a redirection of man’s affections to that which pleasing God can be enjoyed in this life through a grace-filled life of virtue. See Aquinas (1947, II-II, q. 184, 2). For a contemporary Thomistic reflection on the hope that sustains man on his journey as a pilgrim on earth imperfectly approximating his life to the model of perfection realized in Heaven, see Pieper (1997, pp. 87-138). Pieper expounds upon the Thomistic view that through a life of virtue man is oriented toward a perfection he has not yet achieved fully but that is nevertheless inchoately present to him on the way (status viatoris). For an application of Pieper’s insights to the secularized hope of transhumanist perfection, see Corby (2019, pp. 153-177).
to overcome imperfections and come a bit closer to the model of the perfect God-man they seek to imitate at all times. Thus, it can be said that both secular transhumanists and Thomists share a commitment to perpetual progress toward an ideal of perfection.

Bioethicist James Keenan insightfully explores the similarities and discrepancies between the transhumanist and Thomistic ideals of human perfection. With due respect for the rich and varied reflection on the theme in the Christian ascetical-mystical tradition, Keenan summarizes the Christian notion of perfection as «the right realization of ourselves». Total perfection exceeds man’s natural capacities but does not annul his nature. For later scholastic reflection, rooted in a metaphysical perspective, perfection principally refers to a fullness of actuality. In Aquinas’s mature work, goodness is understood in reference to that which brings about each being’s tendency toward its own perfection in accord with its nature or proper way of being. For the creature, perfection is an ontological completion that responds to the destiny inscribed in its nature by God’s wise and loving eternal law. Scholastic thinkers, drawing on biblical images of spiritual childhood and adulthood, later developed detailed descriptions of the three ages of the spiritual life that remain popular to this day.

Keenan next argues that we risk granting the statistically normal a disproportionate value and succumb to fear of medical improvements when we lack a teleological understanding of human nature by which to discern that which helps or hinders man’s authentic realization. As the author writes in another work, «since we do not say who we ought to become, we believe that we should not go beyond the undefined “natural” that we identify as “normal”». Absent a solid philosophical reflection upon nature as the essence of a being insofar as it is ordered to particular actions, «nature» is reduced to what tends to occur. «Natural» is thus treated as little more than the statistically «normal» or common. In contrast, Thomistic thinker Stephen Pope is also careful to distinguish the natural as normative from the natural as the statistically common. Evolutionary explanations can help to explain the statistical frequency of certain behavior among men as a class of animals. However, the natural as normative entails conserving the rational ordering of biological tendencies through free choices ordered toward authentic human goods. Hence, a kind of naturalism creeps into ethical discourse and closes the discussion to medical improvements that could contribute to human flourishing. That which constitutes normality is constantly fluctuating, thus rendering such notion of the biologically normal an unreliable guide for ethics.

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13 See Aquinas (1947, II-II, q. 184, 4).
14 Considering from a Thomistic perspective the underlying views of human nature and improvement that shape genetic modification debates, one author recalls that «according to virtue ethics the virtuous man is a perfect man.» Kraj (2013, p. 114).
15 See Keenan (2017).
Moreover, the realization that man constantly intervenes to alter his environment prompts many to turn to their individually chosen life projects to determine the best course of action. Bioethicist Brent Waters makes a similar point on the need for a clear human telos to guide bioethical deliberations. As Waters notes, the alternative to defining human nature and its ends is a battle of warring efforts of self-invention that provides no guarantee for social collaboration.\(^\text{20}\) Once again, the evacuation of a teleological worldview sets the stage for an individualism of radical self-invention that tends toward conflictual rivalry. No shared objective criteria remain to assist individuals in the task of discerning the wise use of biotechnical means. Nor can the vulnerable count on such criteria to protect them from the manipulative whims of more powerful players. Such a vision implies that, in the realm of prenatal diagnosis, parents are left to impose their subjective notions of normal upon the children subject to their exercise of autonomy.

Thomistic ethicist Jason T. Eberl provides just such a desideratum of an objective human nature as a reliable standard by which to judge enhancements.\(^\text{21}\) Eberl recalls that while sociobiological evolution may have produced a great diversity of cultural customs, a set of shared qualities rooted in the human person’s distinctive rational thought can be found universally throughout history. Contemporary philosophical insights on man’s singular capacity for self-conscious rational thought and autonomous volition as a member of a unique moral community corroborate the perennial insight into humanity’s shared identity. Eberl notes that Thomas Aquinas witnesses the rich Greco-Roman reflection on human nature that preceded him and offers a solid foundation for the personalist considerations that come after him.\(^\text{22}\) Thomas’s sensitivity to the rational, sentient, animate, and corporeal dimensions integrated within man provides the anthropological foundations for a natural moral law ethic. For the Thomist, the moral life consists of an ongoing effort to actualize the various capacities of his nature. His capacities are fulfilled through the various human goods he is inclined to but free to refuse.\(^\text{23}\) In summary, the natural moral law provides «a set of principles which, if followed, will satisfy a human being’s natural inclinations in accord with reason and thus lead to perfection according to her nature as a human

\(^{20}\) For instance, the author writes as follows: «If there is no given telos, as opposed to a projected goal or objective, then the temporal acts of ordering creation are literally pointless meanderings, because they lack any point of reference for determining a direction over time. There is no eventual destination beyond the horizon, only infinitely more horizons. If there is no given end, then providence is a vacuous doctrine, for there is no created order that can be said to unfold over time, and human acts are reduced to creative self-assertion, because there are no temporal trajectories with which humans may align their desires and will. Without an operative destiny, we remain enslaved to an infinite regress of historicist cultural construction and posthuman self-creation. The postmodern world is headed nowhere because it simply has no place to go; it is not coincidental that ‘destination’ and ‘destiny’ are derived from the same root.» Waters (2006, p. 123).

\(^{21}\) See Eberl (2015).

\(^{22}\) For a helpful look at how various cultures and intellectual traditions have approached rational human nature as the criterion for judging the morality of human actions, see Mattison and Berkman (2014).

\(^{23}\) For an extended Thomistic reflection upon the role of natural inclinations in directing man towards those goods that will fulfill him if pursued in accord with faculties formed through virtue, see Jensen (2015a, pp. 40-60); Pinckaers (1995, pp. 400-456).
being». Such principles based on anthropology can thus indicate whether any given biotechnological intervention benefits or damages the recipient. Properly understood, the natural law inspires toward actualizing harmoniously the person’s various potencies. It does not enshrine the biologically-given nor the merely statistically common.

Eberl explains that his methodology for analyzing potential genetic, chemical, or technological enhancements is rooted in a philosophical anthropology, a theory of natural moral law, and an ethics centered upon the cultivation of the virtues by which man achieves human flourishing. The total embrace of radical enhancement found in many transhumanists, the complete rejection of enhancement found in «bioconservatives», and the varied moderate embrace of selective enhancement procedures are common in implicitly promoting their views based upon presuppositions about human nature and human flourishing. Secular bioethicist Erik Parens can shed helpful light on Eberl’s reflections. Parens examines how proponents and opponents of enhancement technology can talk past one another through a dogmatic attachment to either a gratitude framework that emphasizes respect for nature, gifts received, and human limitations, or a creativity framework that emphasizes man’s responsibility to shape nature through gifts received for human benefit. I contend that Thomism can offer the metaphysical foundations of theism that could illuminate Parens’s intuitions regarding the giftedness of human nature. I would also add that the Thomistic perspective advocated in the present work seeks to fulfill Parens’s desire for a more fruitful debate by integrating those truths emphasized in the two frameworks. By avoiding both a wholesale embrace and rejection of enhancement proposals, Thomism instead pursues a discerning adaptation of those particular biotechnological enhancements that contribute to the individual’s authentic flourishing as a psychosomatic moral agent directed to fulfillment through virtue.

In particular, Eberl observes that most transhumanists prize intelligence and a Millian autonomy of the «unbridled exercise of an individual’s will» as the chief aspects of human nature worthy of being fulfilled. Biocoversatives, on the other hand, tend to emphasize man’s anthropological vulnerability as a characteristic key to the person’s identity and growth. As noted in his other work, Eberl reaffirms the existence of a list of qualities common to all individuals that endure through the diverse changes of physical, cultural, and moral growth that comprise the person’s constant development. Above all, the human capacity for self-conscious rational thought and autonomous volition indicates his membership in a moral community to which all fellow humans belong. The Thomistic tradition emphasizes that human beings are indeed rational but do not cease to be simultaneously sentient, animate, and corporeal. Eberl notes that Thomism significantly contributes

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24 Eberl (2015, p. 205)
26 See the essay collection Parens and Johnston (2019) for a varied look at the way in which underlying views of human flourishing often structure enhancement debates.
28 Eberl (2017, p. 314 footnote 2).
to contemporary bioethical debates in providing an ontological and not merely biological definition of human nature. Therefore, while a human being’s biological dimension remains essential to his identity, such identity «does not entail that our biological nature is immutable sacrosanct such that it could not be altered in ways that may be beneficial for us by enhancing our definitive attributes as rational animals».

Thomism thus offers an objective standard of human nature lacking in the thought of transhumanist advocates by which to discern enhancement proposals. At the same time, Thomism also avoids a static enshrinement of biological normalcy found in bioconversative thinking that would prevent forms of enhancement propitious of human flourishing.

Enhancement technologies that assist man in obtaining the goods that realize natural capacities would be prima facie praiseworthy. Eberl follows fellow Thomistic philosophers Anderson and Tollefsen in providing two fundamental criteria for assessing enhancement possibilities. First, any enhancement must promote or protect a basic human good of man's nature in a manner that neither intentionally damages nor diminishes other goods nor deceives in offering only ersatz realization. Second, the enhancement should empower the agent himself to realize the human good without replacing his volitional dignity. The authors note that many enthusiastic enhancement advocates have dismissed calls for caution as products of fearful «irrational religious superstition». Although believers, the authors take a philosophical approach to the question and show no signs of a wholesale rejection of biotechnical improvements. Like Boyer and Meadows, Anderson and Tollefsen praise transhumanists for their desire to improve human rationality and chide the movement for its undervaluing of man’s animality. Anderson and Tollefsen observe that specific alterations may not be intrinsically evil but could still quickly lead to the illusion of happiness that prompts the shallow person to seek fulfillment in youthfulness. The effort to produce experiences without free will interaction risks making the person so passive that he cannot constitute himself through choices. Goods like friendship and virtue require acts of the will whereby individuals freely shape their moral characters. Enhancements that seek such reflexive goods will likely «bypass those goods altogether by removing necessary conditions for their reality: human choices and commitments».

While enhancements may be able to assist the person in progress toward perfection, they would begin to hinder the individual’s development were they to deprive him of the dignity of shaping his character through free choice. The authors conclude that «as a general rule, medical advances stay on safer ground insofar as they are concerned with the protection, restoration, and enhancement of our capacities, rather than with providing us directly with the object that someone with functioning capacities and an active will could achieve». The authors find no inherent problem with improving the human lot through scientific progress. Still, they wisely

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30 Eberl (2017, p. 318).
31 See Anderson and Tollefsen (2008, p. 92).
32 Anderson and Tollefsen (2008, p. 79).
33 Anderson and Tollefsen (2008, p. 95).
34 Anderson and Tollefsen (2008, p. 96).
insist that the growing options available respect the agent’s nature and the whole range of goods that perfect said nature. Biotechnical applications that presuppose a reductionist vision wherein the human being is perfected solely in his material dimension are thus enhancements in only a partial sense.\textsuperscript{35} From a more holistic perspective, such putative enhancements risk becoming obstacles to the individual's cultivation of all his dimensions. In particular, Anderson and Tollefsen note the need to recall that the person's full perfection comes through a life of moral virtue and not only the physical wellbeing so widely sought in the biotechnical boom. The thinkers adopt a cautious optimism regarding the promises and perils of enhancement developments that require critical discernment in light of the whole truth of human identity and ends. Their attention to human agency and virtue is thus a helpful corrective of a restrictive obsession with cosmetic improvements of a limited set of physical traits.

Similarly, Eberl concludes that «an unbridled, perfectionist, drive toward human enhancement is not compatible with the Thomistic concept of human nature and flourishing insofar as it is not premised on an objective view of what constitutes human well-being».\textsuperscript{36} The philosopher worries that the subjectivism of many forms of secular transhumanism, such as the Oxford school, would lead to abuses of technology designed to serve humans. Without the proper orientation of an objective moral order as indicated in the natural moral law, it is likely that «certain enhancements may be pursued for misplaced goals—such as vanity or competitiveness—or lead to an ersatz form of “happiness”».\textsuperscript{37} Cognitive and physical enhancements are positive so long as they are «conducive to human well-being as living, sentient, social, and rational animals».\textsuperscript{38} Emotive and moral enhancements, reasons Eberl, must aid and never replace the human agent’s personal cultivation of virtue.\textsuperscript{39} In short, the Eberl’s account offers a Thomistic nuanced discernment of potentially beneficial enhancements that succumbs to neither the excessive pessimism of religiously minded bioconservatives nor the unchecked optimism of many secular transhumanists.

2. A Thomistic critique of the transhumanist notion of human nature and the «posthuman»

Thomistic philosophers John H. Boyer and Geoffrey Meadows offer a compelling natural moral law assessment of both the transhumanist movement’s positive aspects and its inherent

\textsuperscript{35} Kraj (2013, p. 112) also warns about the danger of abusing genetic modification due to a reductionistic anthropology.

\textsuperscript{36} Eberl (2015, p. 218).

\textsuperscript{37} Eberl (2015, p. 218).

\textsuperscript{38} Eberl (2015, p. 218).

\textsuperscript{39} Biotechnological enhancements can never, by themselves, ensure the human perfection won through virtue, «because in a virtuous action rational governing assumes the recognition of values and submits to them —something which is rational, i.e. specifically human and may not be replaced by any, even the most subtle, form of external manipulation or stimulation». Kraj (2013, p. 114).
philosophic limitations. They first criticize the approach of bioconservatives like political scientist Francis Fukuyama who misguidedy warns against human nature’s possible destruction through biotechnology. Such exaggerated fears of biotechnology’s capacity to alter fundamentally human nature evidence the pressing need for a sound metaphysics that can ground ethical judgments. The Thomistic philosophers insist that transhumanism «while revolutionary in aims, presents nothing new in terms of ontological reality». Thus, even the most spectacular enhancement technology will produce beings who remain human. Biotechnology may produce modified humans, but the altered beings will not constitute a new «posthuman» species. Even if humans find a new facility in physical and cognitive processes, they will retain the rationality that makes them distinct among the animal kingdom and provides the foundation for ethical and human rights discourse. Unfortunately, the transhumanist community often lacks philosophical precision regarding the humanity of «posthumans». Some thinkers lack anthropological clarity, like philosopher Mark Walker, who is convinced that the foreseen «posthuman» will constitute a radically new species separate from today’s homo sapiens species. Anthropological clarity is thus much needed in navigating the bold transhumanist claims and the alarm such claims provoke.

Although transhumanists disagree about the definition of human nature, there is a consensus among members of the movement regarding a materialistic anthropology that privileges man’s malleability. While the extropian school led by Max More thinks of chromosomes as a temporary component of our identities, most transhumanists focus on the genetic code and our biological evolutionary lineage in understanding man. Walker thus hypothesizes that a properly altered biology could bring about a new species. Walker thus speculates that we will be able to distinguish «posthumans» from humans based upon their radically superior moral and intellectual virtues rooted in such altered biology, just as today we can distinguish man from chimps based upon their biologically-rooted differences in intellectual and moral virtues.

However, Walker confuses a difference in degree with a difference in kind. Humans are not merely advanced chimps who outperform their competitors. Instead, man is uniquely capable of «understanding universals, abstract concepts», and can «make abstract judgments, or perform proper logical deductions». He has capacities of a unique kind because he is a being of a unique kind distinct from chimps. Namely, the human capacity for spiritual actions not intrinsically dependent upon matter reveals that he must have a soul of a spiritual nature intrinsically independent of matter for its subsistence. In order to assert that «posthumans» represent a new species, transhumanists must individuate an action of an order that would

40 See Boyer and Meadows (2015).
43 See Boyer and Meadows (2015, pp. 188-189).
reflect a fundamentally different ontological nature as a foundation.\textsuperscript{45} Bostrom’s example of the «posthuman» man producing and appreciating music as superior to Bach as Bach is to Muzak points to an enhanced facility to perform acts of the same order as human beings today.\textsuperscript{46} Such a musical virtuoso would indeed be an impressive individual, but still a human of the same kind as the less impressive Muzak composer. As the Thomistic philosophers summarize, «posthumans will be extremely rational, but not above rationality».\textsuperscript{47} In other words, enhanced humans will still be humans. Human nature as a rationally-imbued biological totality is the essence that endures the change of enhancement and the abiding source of improved actions. Enhancement perfects but does not replace the abilities rooted in the stable human nature.

Thus, a Thomist observes a real, determinate human nature that is subject to a wide range of changes and improvements wherein its potentialities are actualized.\textsuperscript{48} The Thomist vision of human nature presents neither the static form of the Platonists nor the absolute malleability of transhumanist materialists. Rather, stable substances undergo change but always «circumscribed by its nature».\textsuperscript{49} Enhancements can thus perfect and improve those capacities for better health, cognition, or emotional stability already latent in the common human nature. Current and future medicine better disposes matter to the proper operation of human nature’s powers.\textsuperscript{50} Such an improved disposition of matter would better human tasks’ performance and could mitigate the effects of disease and aging to prolong earthly existence. However, a longer and more productive human life does not constitute a new non-human species.

As the authors note, speciation takes place through generation by which the matter substrate loses one substantial form and then gains another substantial form that actualizes a potency

\textsuperscript{45} For a complete rejection of the notion of human nature as a standard for judging enhancement efforts, see Fenton (2006). For an in-depth treatment of the importance of a Thomistic notion of a common human nature for navigating bioethical controversies, see Eberl (2020).

\textsuperscript{46} In a detailed projection of the joys of the posthuman future, the Oxford philosopher asks the reader to envision the following: «You have just celebrated your 170\textsuperscript{th} birthday and you feel stronger than ever. Each day is a joy. You have invented entirely new art forms, which exploit the new kinds of cognitive capacities and sensibilities you have developed. You still listen to music — music that is to Mozart what Mozart is to bad Muzak. You are communicating with your contemporaries using a language that has grown out of English over the past century and that has a vocabulary and expressive power that enables you to share and discuss thoughts and feelings that unaugmented humans could not even think or experience. You play a certain new kind of game which combines VR-mediated artistic expression, dance, humor, interpersonal dynamics, and various novel faculties and the emergent phenomena they make possible, and which is more fun than anything you ever did during the first 100 years of your existence». Bostrom (2008, p. 112).

\textsuperscript{47} Boyer and Meadows (2015, p. 190).

\textsuperscript{48} See Boyer and Meadows (2015, p. 191). For an introduction to how an Aristotelian-Thomistic anthropology can provide the foundations for a proper understanding of the virtues that bring about the complex process of human perfection, see Sanford (2019, pp. 183-204). For Thomas’s systematic anthropology, see Aquinas (1947, I, qq. 75-89). Pasnau (2002) provides an insightful contemporary commentary on Aquinas’s work.

\textsuperscript{49} Boyer and Meadows (2015, p. 181).

\textsuperscript{50} See Boyer and Meadows (2015, p. 192).
within the generic nature of the parents. The proximate genus of the parents is open to various determinations contained potentially in the parents and then actualized in the offspring. Even though the offspring is of a different species than the parent, its species actualizes a potency within its ancestor’s essence. Were the longed-for «posthuman» to arise from humanity, it would be necessary to actualize in it some specific difference beyond rationality that is contained potentially in man’s nature. The enhancements normally associated with «posthumans» perfect man’s animality through sensitive and cognitive improvements. However, while these developments may significantly modify and enrich human lives, the changes do not represent the addition of a specific difference that would distinguish the «posthuman» as a new species. The enhanced being would be rightly called a «superhuman» in that such a being would enjoy the perfecting of man’s capacities to a previously unimagined extent. Yet, even major changes to the phenotype of man would not transform him into a different species. As the authors note, Aquinas already observed how the hypothetical addition of rationality to an ox would transform that creature into a man, even though such an imaginary man would maintain the typical morphological and physiological features of a four-legged herbivore. Likewise, radical phenotype changes through prosthetics or pharmaceuticals would not make the «posthuman» any less a rational animal and thus any less a man. Since imperfections brought about through congenital disabilities like trisomy 21 or spina bifida do not deprive men of their humanity, nor should we think that current or future perfections brought through enhancements will exclude the «posthuman» from our species. In short, the biological changes that transhumanists promote are alterations of quality and not of substance.

In conclusion to their insightful philosophical analysis of transhumanism’s limited anthropology, Boyer and Meadows reflect upon the movement’s inconsistent motivations. Humans are encouraged to invest ample time, energy, and funding to research for developments that will lead to a superior species and the consequent elimination of our own. If «posthumans» are really meant to be the next species of evolutionary history, then transhumanists have the unenviable task of convincing man that it is in his best interest to go extinct. If instead, the transhumanist means to advocate for human fulfillment through enhancements that benefit his physical, emotional, and cognitive capacities, then they would do well to adopt more precise language regarding their goals. Moreover, it would be appropriate to eschew terms like «transhuman» and «posthuman» that would suggest the unrealistic creation of a new species.

52 See Boyer and Meadows (2015, p. 194). For example, Thomas writes in *Scriptum super libros Sententiarum* 1.44.1.1 on the imagined addition of rational to the ox’s definition: «it would no longer be an ox, but another species, namely human». Likewise, in Aquinas (1947, I-II, 67, 3), Thomas writes: «Now we must take note that sometimes imperfection belongs to a thing’s very nature, and belongs to its species: even as lack of reason belongs to the very specific nature of a horse and an ox. And since a thing, so long as it remains the same identically, cannot pass from one species to another, it follows that if such an imperfection be removed, the species of that thing is changed: even as it would no longer be an ox or a horse, were it to be rational».
Thomistic philosopher David S. Oderberg further challenges the transhumanist claim that biotechnology can create a new post-human species.⁵⁴ Efforts to improve the human condition inevitably raise questions regarding the type of being man is. Thinkers like Princeton biologist Lee M. Silver are confident that biotechnology will not just improve man’s lot but will produce a new, previously unknown species.⁵⁵ As Oderberg notes that the rationality that distinguishes humans can be «characterized in terms of abstract thought, language use, the most sophisticated technical ability, self-consciousness, introspection, moral behavior, advanced social interaction, and so on».⁵⁶ Even in the case of serious morphological alteration of bodily structure and function, the rational animal would remain the same philosophical species. Exotic rational animals, argues Oderberg, are still rational animals and thus members of the human species.

To illustrate his point, the philosopher proposes the striking example of the «Glog», a three-headed, 12-tentacled creature who possesses 17 sense organs in his thixotropic clay, spherical body.⁵⁷ The Glog’s rationality would manifest itself through communication in its own language. Such Glog language would express the alien creature’s rationality, even if men found the creature’s language difficult to translate or couched in an unfamiliar medium like microwave pulses. Through its rationality, the Glog would construct a plan of life organized according to a hierarchy of goals. It would approach the world with wonder and seek resolution to its questions of meaning. The Glog’s manner of life would differ visibly from that of human beings. In terms of its animality, the Glog differs significantly from humans in its structures and functions. Nonetheless, while the Glog has modalities of animality distinct from current humans, it does share «the same vegetative and sensory functions as us at the appropriate level of generality».⁵⁸ The Glog’s embodied experience of rationality would be fundamentally akin to ours. As the philosopher explains, the «Glog still picks up particular sensory information, processes it, forms concepts and composes them into judgments and inferences».⁵⁹ The Glog, or any other exotic rational animal, could have a different sensory apparatus that would make communication with conventional humans quite difficult in practice. An exotic rational animal might even have a morphologically unique reproductive phenotype that hinders interbreeding with humans. Nevertheless, the Glog or other exotic rational animals would be «a distinct variety from us

⁵⁴ See Oderberg (2014, pp. 219-220).
⁵⁵ For example, Silver writes, «Although these beings can trace their ancestry back directly to homo sapiens, they are as different from humans as humans are from the primitive worms with tiny brains that first crawled along the earth’s surface… It is difficult to find the words to describe the enhanced attributes of these special people. “Intelligence” does not do justice to their cognitive abilities. “Knowledge” does not explain the depth of both their understanding of the universe and their own consciousness. “Power” is not strong enough to describe the control they have over technologies that can be used to shape the universe». Silver (2007, pp. 249-250).
⁵⁷ See Oderberg (2014, pp. 219-220).
under the infima species rational animal». Below the surface of wildly different appearances and manners of interacting with the world, the Glog would retain a fundamental commonality of rationality and animality with humans as known today.

Oderberg provides the Glog example to recall that biotechnical efforts to improve health, physical beauty, athleticism, or lifespan do not touch upon man’s fundamental species identity. Most transhumanist proposals for improvement envision a being whose exterior, bodily structure, and behavior resemble current humans more than the imaginary Glog. Oderberg argues that if the Glog should be classified as a human despite its evident physiological differences from today’s man, then a fortiori, the transhumanist’s improved «posthuman» will also remain a human essentially. Moreover, Oderberg invokes the Scholastic adage plus vel minus non mutat speciem («No difference of degree could ever change the species») to recall that a better human is still a human.  

If successful, transhumanist labors will either grant humans a fuller animality (such as a faster speed) or a more potent rationality (such as through enhanced cognition). Thomistic philosophy thus helps to clarify that, while technology might bring about significant adjustments in the appearances and ability of the enhanced, such individuals would remain members of the same species of rational animals, with the same rights and duties of all other humans.

Eberl addresses the possible societal disruption that an enhanced superhuman population could create and the legitimate concerns some bioethicists express about such tensions. For instance, bioethicist Nicholas Agar goes so far as to voice fears that the radically enhanced would enjoy a higher moral status that would justify their dominance over unenhanced humans. Agar reasons that, just as humans routinely control the lives of lower animals in the name of man’s rational superiority, so it is likely that the dramatically superior enhanced beings of the future will have grounds to treat today’s normal human as an inferior being with lesser rights. While Eberl agrees with Oderberg that no biotechnical intervention will succeed in changing humans into a new philosophical species, Eberl notes that enhanced humans’ drastically different abilities could still introduce real tensions in society. While the radically enhanced would metaphysically enjoy the same rights as other less capable beings of the same rational nature, «the danger that such beings might not acknowledge the equivalent natural rights of the unenhanced has already been well established by historical analogues in which certain groups of persons considered themselves to be more highly evolved, and thereby more rightfully entitled, than other groups of persons». Therefore, philosophical clarity among the wise about the shared species and moral status among the enhanced and unenhanced may not be enough to prevent the negative social impact of glaring disparities among the classes of humans.

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60 Oderberg (2014, p. 221).
64 See Agar (2014, pp. 165-194).
Oderberg also draws out some of the political problems that could arise from radical forms of enhancement. Both transhumanist advocates and skeptics foresee a situation in which conflicts will arise between the enhanced and unenhanced. The battle between members of the same species would entail a civil war with negative consequences unique to disputes among those who enjoy profound unity. Since the conflict would result in some humans gaining dominion over members of their own species, it is likely that the victor will suffer a «traumatic psychological effect of a different order from that involved in subjugating a distinct species». Moreover, even if bloody attacks could be averted, rancor would persist over severe inequalities within the species. Such tension would significantly handicap social cohesion in a transhuman future. As Oderberg concludes, «unable to transcend our own species, then, pessimistic transhumanism requires the human race to turn on itself». Again, the very movement that purports to improve humanity ironically ends up risking the self-destruction of humanity.

3. Toward a Thomistic vision of therapeutic enhancements that respect and fulfill human nature

Like Boyle and Meadows, Thomistic philosopher Steven Jensen notes the unfortunate neglect of precise thinking on human nature within the transhumanist movement. Discussions about what is good for a particular being are dependent upon a correct assessment of its nature. Thus, knowledge of what kind of thing a knife is leads us to praise its sharpness, just as knowledge of what kind of thing a hammer is grounds our praise for its heavy dullness. Our praise for these objects’ fit qualities reflects our spontaneous knowledge of the dynamism intrinsic to the known natures. In other words, when we know the knife, we know it as the kind of thing directed towards cutting. Natures are not rigid constraints but the essences of a thing as the principle of that thing’s action towards its fulfillment. Natures indicate both a thing’s stability in being and its inbuilt dynamism toward completion. While the forward-looking might

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68 Oderberg (2014, p. 226). An Italian philosopher similarly concludes that the transhumanist aspiration to surpass humanity to reach a posthuman state simply offers an altered version of humanity: «Ultimately, the posthuman being is nothing if not the same human being. With the modified and hybridized body, with enhanced intellectual faculties and diluted consciousness in space and time, with increased sensitivity and no more diseases... but also with the same needs and desires of human beings. Needs and desires that are post-human, perhaps all too human». Valera (2014, p. 490).
70 See Jensen (2015b, p. 167).
want nature’s dynamism without its seemingly bland and restricting constancy, progress and improvement actually depend upon the permanence of natures. It makes no sense to speak of a better \( x \) or a more complete \( x \) if there is no enduring \( x \) subject to such improvements. Knowing the intrinsic order to proper ends within natures allows our speculative knowledge of what a thing is to guide our evaluative knowledge of what a thing should be or do. Likewise, a deeper knowledge of man through an adequate anthropology reveals his dynamism towards certain ends or goods that bring him fulfillment.\(^7\) While the moral life allows for a wide range of creativity in the manner of pursuing such ends, the goods, like the human nature in which such goods are rooted, must be received as a gift and not as an obstacle to the individual’s autonomy.

Jensen builds upon Sandel's repeated critique of the failure of transhumanism to appreciate the giftedness of human nature.\(^7\) Sandel insists that such appreciation for the giftedness of human nature can and should be articulated in secular terms. However, some secular critics find the notion of gifts apart from a divine Giver incoherent.\(^7\) As the secular Caplan writes, «the metaphor of the gift makes no sense in the secular context such as Sandel proposes. Gifts require a giver but nature offers no likely suspects to occupy this role».\(^7\) Fellow secular bioethicist Peter Singer makes a similar point when he writes that he is «not sure that the idea of life as a “gift” makes much sense independently of belief in God».\(^7\) He adds that «if there is no God, life can only be a gift from one’s parents».\(^7\) The secular rejection of God provides impetus to promote a more active role for parents in choosing which embryos to protect and in shaping the genetic characteristics of those offspring selected. As Australian bioethicist logically concludes from the absence of a divine Giver of life, «wouldn’t we all prefer parents who try to make the gift as good as possible, rather than leaving everything to chance?»\(^7\) Singer’s protégé Savulescu will develop just such a secular vision of an activist role in procreative control through the notion of procreative beneficence. Although I agree with the coherence of Caplan and Singer's position, I disagree with their secular premise of the nonexistence of God.

Jensen thus contends that a fundamental flaw of transhumanist thought is its effort to create human natures and its corresponding goods instead of receiving nature as a gift and guide to

\(^{71}\) For a more detailed explanation of the moral knowledge of good derived from understanding human nature, see Jensen (2015a, pp. 79-107).

\(^{72}\) Jensen’s work is indebted to Sandel (2007, pp. 85-100).

\(^{73}\) For instance, see Strong (2005). «I’m not sure that the idea of life as a “gift” makes much sense independently of belief in God. If there is no God, life can only be a gift from one’s parents. And if that is the case, wouldn’t we all prefer parents who try to make the gift as good as possible, rather than leaving everything to chance?» Singer (2009, p. 279). While reason alone can show the limits of a radical view of human autonomy, the secular critics are correct to seek the ultimate foundation for giftedness a transcendent Giver. Such a metaphysical foundation for human nature's giftedness in the wise Creator requires argumentation beyond the scope of the present work.

\(^{74}\) Caplan (2009, p. 208).

\(^{75}\) Singer (2009, p. 279).

\(^{76}\) Singer (2009, p. 279).

\(^{77}\) Singer (2009, p. 279).
authentic human flourishing. The «transcendence» of which many transhumanists dream is a disembodied consciousness that seems to subtract from man his animality rather than add to his rationality. Paradoxically, while bragging liberation from the constraints of embodied existence, transhumanism’s materialism reduces consciousness to a purely informational structure capable of replicating other material receptacles. For instance, transhumanist philosopher Max More writes that «with few exceptions, transhumanists describe themselves as materialists, physicalists, or functionalists. As such, they believe that our thinking, feeling selves are essentially physical processes». While transhumanists may attract many admirers when proposing widely accepted instrumental goods like health, strength, and intelligence, admirers of the system should not forget that a thing’s nature is the chief criterion for discerning the relative value of such instrumental goods for its fulfillment. The transhumanist assumption that man is a disembodied consciousness runs contrary to man’s authentic identity as an embodied spirit. This underlying anthropological error prevents transhumanists from a sound judgment regarding proper means for contributing to man’s flourishing.

Although he is wary of enhancements, Jensen insists on the value of therapeutic treatments. While the former adds new perfections to the child’s disposition, the latter seeks to heal or correct defects of the child’s disposition. Examples of praiseworthy treatments include surgery for cleft palate or glasses. For instance, enhancement occurs when the shortsighted individual is not merely brought to 20/20 vision but to an eagle-like gaze beyond the norm of healthy human sight. Jensen admits that the distinction between the two uses of technology can be challenging to discern in some cases. For instance, while it is easy enough to distinguish an acid burn victim’s facial reconstruction from a Hollywood actress’s plastic surgery for a more desirable nose shape, the theoretical grounding for more complicated cases needs further elucidation.

Due to the lack of theoretical clarity surrounding the distinction between therapies and enhancements, Austriaco proposes moving beyond the treatment-enhancement dichotomy toward an assessment that embraces therapeutic enhancements (whether it brings the patient to the healthy norm or to another state of enhanced health beyond the species norm) and that which is non-therapeutic. In his analysis, Austriaco highlights lipid-lowering interventions to reduce cardiovascular risks. It is already common practice in the United States to use statins to impair the liver’s cholesterol synthesis to bring down LDL levels. Even though 70-130 mg/dL is the normal range for men, it is likely that 50 mg/dL would have even greater benefits for avoiding cardiovascular complications than those achieved within the current species norm.

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79 See Boyer and Meadows (2015, p. 410).
81 See Jensen (2015b, pp. 170-172).
82 See Austriaco (2017). FitzGerald (2008, pp. 41-46) also provides a helpful account of the inadequacies of the therapy-enhancement dichotomy.
According to Austriaco, it is imperative to remember that medicine seeks not only to repair damage and restore health, but it also aims to preserve and protect patients’ health. These preventative and protective dimensions of health care justify the temporary unease healthy individuals tolerate in flu shots. Likewise, Austriaco justifies biological enhancements of exceptionally low LDL levels for the therapeutic good of protecting against future cardiovascular disease. By extension, genetic enhancement modifications would be justifiable on the condition that they preserve and protect health. He further foresees morally praiseworthy germline genetic modifications so long as—in addition to the aforementioned therapeutic end—there is moral certainty regarding the safety of the edited individual, the lack of serious risks for any offspring, and a respect for the dignity of the conjugal act. Continuing with the emblematic LDL-lowering case, scientists are currently researching an RNA inhibitor that would work against the PCSK9 gene central to the synthesis of LDL.\(^8^4\) Similarly, geneticists may be able to take advantage of CCR5 mutations, particularly the CCR5-delta 32 mutation that leads to HIV resistance.\(^8^5\)

Austriaco adds that openness to therapeutic enhancements should include a benefits-burdens assessment that does not place patients or their offspring at serious health risks.\(^8^6\) He also notes the importance of making such treatments as widely available as possible to avoid unfair advantages given to the wealthy elite. Austriaco concludes that the genetic editing CRISPR-Cas9 technology heralds should not only correct and cure defects like sickle cell anemia, but it should also be employed to preserve and protect health, even when such editing involves surpassing the species norm.

Jensen similarly clarifies that the standard for appropriate care is human nature, not as a mere statistical norm, but as an intrinsically purposeful kind with a certain function.\(^8^7\) Hence, even if most of the human population suffered nearsightedness, 20/20 vision would remain ideal for the human eye’s proper functioning. Moreover, what is helpful for the proper functioning of an eagle eye may not be fitting for the right functioning of a human eye. Jensen also clarifies that attentiveness to nature does not mean a slavish submission to the whims of “mother nature”, understood as the accumulation of nonhuman causal agents.\(^8^8\) Diseases and other defects from “mother nature” can and should be combated through medicine since they are evident defects of human nature’s inbuilt tendency toward the good of health.

Unfortunately, Jensen’s thought remains limited in its commitment to the therapy-enhancement dichotomy. This conceptual limitation would prevent him from adopting some valuable forms of

\(^8^4\) See Austriaco (2017, p. 48).
\(^8^5\) See Austriaco (2017, p. 49).
\(^8^6\) See Austriaco (2017, p. 49).
\(^8^7\) See Jensen (2015b, p. 171).
\(^8^8\) See Jensen (2015b, p. 172). Another Thomist philosopher helps to clarify common confusions about what is meant by nature in ethical discussions as follows: “When the ancients understood the good life to be “according to nature”, they meant according to what is best, most noble, or most excellent in human nature. Moderns, on the other hand, understand “nature” according to the methodology of the natural sciences as what occurs with some frequency under natural conditions”. Pope (2007, p. 149).
enhancement that could contribute to human happiness. I agree with the Kass-led President’s Council that the therapy-enhancement distinction can provide a helpful starting point for distinguishing different uses of biotechnology. I also agree with the same authors about the difficulty entailed in defining the concepts of normality and health that determine designations of what counts as therapy. While the council correctly points out the limits of distinction, they unfortunately fail to provide new criteria for a superior ethical discernment. Thus, with the help of Austriraco’s insights, I have sought to provide a more nuanced therapeutic enhancement paradigm open to new forms of biotechnological improvement.

4. The Thomistic integration of the natural moral law and virtue ethics in the pursuit of authentic perfection

Aquinas is neither a natural law ethicist nor a virtue ethics thinker if such terms are meant to exclude each other. Instead, both natural moral law and the virtues are integrated into a more extensive metaphysics of the good and the human person that also emphasizes the natural knowledge of God and man’s fundamental orientation toward such God as the \textit{sumnum bonum} that unites and gives purpose to the whole complex string of man’s free actions. The virtues are those firm dispositions of character that allow the individual to easily and consistently recognize and pursue those goods the natural moral law precepts indicate. I have already

\textsuperscript{89} The President’s Council on Bioethics (2003, pp. 13-14).
\textsuperscript{90} The President’s Council on Bioethics (2003, pp. 14-16).
\textsuperscript{91} See Di Blasi (2014, 21-24) for a summary of the unfortunate tendency in some contemporary Thomists to oppose too strongly the natural moral law and virtue ethics elements in their moral system. The rest of DiBlasi’s article offers guidance for overcoming the false oppositions. See also Hibbs (2001, 86-118, 2007, 20-34) on how Aquinas’s treatment of natural moral law is integrated into his vision of human happiness through virtue. For a look the inevitable conflict between contractarian visions of natural law and contemporary virtue ethics and the prospects of a reconciliation of natural law and virtue-centered ethical thinking through a recovery of a Aristotelian-Thomistic appreciation for human nature’s teleology, see Sanford (2019, pp. 227-254).
\textsuperscript{92} For an invaluable explanation of how Aquinas’s ethical thought, particularly its emphasis on the natural moral law and the virtues, fits into an integrated vision of metaphysics and anthropology see DeYoung et al. (2009). For a similar overview of the Thomistic synthesis of the moral life, see Elders (2019) and Rhonheimer (2011).
\textsuperscript{93} One author explains the complementarity of natural moral law and virtues ethics as follows: «Natural law ethics, then, is not an alternative to an account of ethics in terms of “virtues”, but closely dependent on it. We distinguish pre-moral natural \textit{proclivities} like sexual attraction and in-group loyalty from moral \textit{virtues} like marital love and ordered patriotism and \textit{vices} like sexual promiscuity and xenophobia. The proclivities are pre-personal and pre-rational inclinations; the virtues are a reasonable and morally ordered set of dispositions…. This view of reason and nature provides a way of interpreting the moral law. A right way of acting is not ethically obligatory or legitimate simply because it is “natural”, in the scientific sense, as “evolved” or “genetically based”, but it is obligatory because it accords with what is good for human beings, considered comprehensively.» Pope (2007, pp. 162-163).
distinguished between nature as a statistical frequency and nature as the normative guide to fulfilling what a thing is. Thus, our biological proclivities are not always sure indicators of what is best for man. Instead, man must rationally discern the right use of those goods towards which he is inclined. The agent can consistently choose rightly when his practical intellect's rational deliberation about the possibilities before him is perfected through the virtue of prudence. This virtue allows one to see and select in each circumstance that which will contribute to his flourishing. Moreover, the virtues of temperance and fortitude habituate the person's sensible appetites to desire properly such that the pursuit of certain goods that his initial biological proclivities would have discouraged is not only possible but now pleasurable for the agent. It is precisely virtue ethics that brings about in the individual the greatest, deepest, and most holistic assimilation and practice of that which the natural moral law demands.

Like Eberl and Keenan, Tham argues that the transhumanist's reductive notion of human perfection would benefit significantly from traditional wisdom regarding natural moral law and the virtues. Tham chides those who take a mechanistic view of human nature that would allow for a complete manipulation based upon knowledge of the human genome. Without a «metaphysically grounded basis for human nature», we are left with an unendingly malleable biological structure subject to human whims. While not opposed to technology's prudent application to better human health and knowledge, Tham also calls for expanding the current dialogue to include moral and spiritual considerations alongside standard scientific interests. Since man is more than his «genetic vitality», other dimensions of his person should be cultivated even if no technology can directly tend to such aspects of his being.

Tham's final reflections begin to flesh out the virtue theory Eberl insists as important yet only briefly alludes to which my present work further develops. Prudence enables man «to see with unbiased reason the objective good in each concrete situation and act purposefully by choosing the best means of realizing it». Thus, the prudent man benefits from rules of behavior but does not need to consult and execute an endless list of regulations mechanically. Nor is the prudent person content with the bare minimum of moral probity to which rules might oblige. Instead, the prudent individual seeks the highest excellence in each situation and embraces the adventure of constant moral growth toward perfection. Moreover, since the memory is an integral part of prudence, the virtuous person learns from the past experiences of his own life and those of others who have gone before him. Contact with the rich traditions of literature, history, philosophy, and theology expands the individual's vision beyond the immediate pragmatic concerns of technological efficiency or the partial pictures of the person that might inform contemporary philosophy.

95 Tham (2017, p. 55).
96 Tham (2017, p. 57). For another helpful reflection on the insufficiency of technological means to address all of human nature's needs, see FitzGerald (2008, pp. 46-52).
Furthermore, the cultivation of justice is essential if individuals are to harness unprecedented technological powers for the good of all rather than the special interests of a particular class or ideology that happens to have power. Ultimately, the only way to stall the distressing pattern of eugenics that has repeated itself throughout history is through a populace formed in the virtue of justice by which they can acknowledge and protect the fundamental goods due to all individuals no matter their physical, mental, or overall genetic status.

With all the promising potential for greater ease and comfort that enhancement technology brings, Tham warns that such aids might lull man in a complacency wherein he loses the «aspiration and fighting spirit» key to the noble accomplishments in athletics, public service, or family life that are only possible through the virtue of fortitude that empowers man to fight against or endure the challenges of life. Future technology may erase or significantly mitigate many of today’s common inconveniences. However, fortitude will be needed to empower individuals to face the remaining trials or the novel difficulties that new realities such as space exploration and colonization might bring.

Finally, the virtue of temperance by which man integrates and channels his attractions towards pleasures correctly provides the only sure means of the self-control needed to use technology as an aid rather than an instrument of destruction. To illustrate his point, Tham cites the jarring example of 3rd century BC Chinese emperor Qin Shi Huang-di whose immoderate consumption of supposed elixirs of life led to his poisoning, premature death, and the speedy collapse of the dynasty he had worked so hard to construct. Tham encourages the reader to acknowledge that while technological advances and economic prosperity have brought the developed world tremendous comforts, such power over our environment should not blind us to our fundamental, unchanging weakness. Humans are finite creatures dependent upon a social web of relationships for their physical, moral, and spiritual development.

The virtue ethics model central to Thomistic ethical thought gives detailed guidance for helping the moral agent reach harmonious fulfillment in all of his many intellectual, affective, and volition dimensions as an individual and social being. Virtues enable man to consistently pursue those goods toward which the natural moral law’s precepts direct him. Fears or dreams of a biotechnologically driven posthuman state distract from the more fruitful task of perfection through virtue formation. Humans are privileged to shape and improve their character in ways that biomedicine can aid but not replace. Hence, virtue ethics offers the authentic human perfection that transhumanists desire but fail to attain due to a narrowly reductive anthropology.

100 Tham (2017, p. 60). On the virtue of fortitude, see Aquinas (1947, II-II, qq. 123-140).
102 See Tham (2017, p. 60).
103 For a Thomistic account of virtue that highlights the often neglected frailty and vulnerability of human life, see MacIntyre (1999).
5. Bibliography


