TRANSCENDENCE: AN ETHICAL ANALYSIS OF ENHANCEMENT TECHNOLOGIES

SEAN ELI MCCORMICK

Bachelor of Arts in Religious Studies, Philosophy, and Classical & Medieval Studies
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We hereby approve this thesis
for
SEAN ELI MCCORMICK
Candidate for the MASTER OF ARTS in PHILOSOPHY degree
for the Department of
Philosophy and Comparative Religion
and
CLEVELAND STATE UNIVERSITY’S
College of Graduate Studies by

Dr. Allyson L. Robichaud, Committee Chair

Dr. Sonya Charles, Committee Member

Dr. Linda E. Francis, Committee Member

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ABSTRACT

New technologies are being made available to the general public that have the capability of enhancing the physical and cognitive capacities and the genetic structures of humans. These human enhancement technologies (HETs) have the potential to alter what it means to be human and to have wide-ranging effects on society. This study seeks to analyze these technologies and explore the ethical problems associated with them.

To these ends, this study examines three questions raised by the introduction of these technologies: 1) does the usage of HETs corrupt or otherwise devalue human nature? 2) do HETs, on average, promote the goods of individuals and of societies? 3) what constitutes a just distribution of HETs? Part I attempts to synthesize a holistic conception of human nature utilizing elements from philosophical, theological, and scientific conceptions. Part II takes this holistic conception forward to analyze the utility of certain prosthetic, cognitive, and genetic enhancements. Part II also attempts to outline a just distribution of HETs based on overall social utility.

This study concludes that a physical reductionist conception of human nature synthesized with certain conceptions of human flourishing would find particular HETs advantageous to personal and social goods. Those HETs which, on average, promote these goods should be developed and distributed to the general public. Societies beset with scarcity issues should ensure that basic necessities remain a priority before the distribution of enhancements is considered. Social policy analysts and legislators also need to ensure that the distribution of HETs does not exacerbate the widening socio-economic divide between wealthier social classes and the impoverished. Instead, HETs should be distributed to promote the net good of individuals within a particular society.
# TABLE OF CONTENTS

**ABSTRACT** .......................................................................................................................... iv

**INTRODUCTION** .................................................................................................................. 1

**PART I – CONCEPTIONS OF HUMAN NATURE** ................................................................. 5

- **CHAPTER I – PHILOSOPHICAL CONCEPTIONS** ................................................................. 10
  - Essentialism: Platonic and Aristotelian Conceptions of Human Nature ....................... 10
  - Reason and Morality: A Kantian Theory of Human Nature ....................................... 24
  - Philosophical Summary ............................................................................................... 43

- **CHAPTER II – THEOLOGICAL CONCEPTIONS** ............................................................... 46
  - A Judeo-Christian Conception of Human Nature .................................................. 48
  - Eastern Theological Conceptions of Human Nature ............................................. 58
    - Confucianism ........................................................................................................ 59
    - Taoism .................................................................................................................. 66
    - Hinduism ............................................................................................................. 70
  - Theological Summary .............................................................................................. 74

- **CHAPTER III – SCIENTIFIC CONCEPTIONS** ................................................................. 77

- **CHAPTER IV – TOWARDS A SYNTHESIS** ...................................................................... 89

**PART II – THE UTILITY AND DISTRIBUTION OF HETs** ............................................. 108

- **CHAPTER V – UTILITY OF HUMAN ENHANCEMENT TECHNOLOGIES** ............... 110
  - Prosthetic Enhancements ....................................................................................... 116
  - Cognitive Enhancements ....................................................................................... 125
  - Genetic Engineering ............................................................................................... 134
  - Concluding Remarks .............................................................................................. 146

- **CHAPTER VI – CONCEIVING A JUST DISTRIBUTION OF HETs** .......................... 152
  - A Right to Human Enhancement Technologies? ................................................ 153
  - A Utilitarian Distribution of Human Enhancement Technologies ...................... 161
  - Concluding Remarks .............................................................................................. 167

**CONCLUSION** .................................................................................................................... 170

**BIBLIOGRAPHY** .................................................................................................................. 172
INTRODUCTION

With roots spanning millennia, the ideal of transhumanism lays out a rubric by which humanity can shrug off the physical shackles of what it means to be biologically human. Originally drafted in 1998, the "Transhumanist Declaration" enumerates the futurist doctrine of the modern day transhumanist movement. The first and eighth dictates of the declaration are as follows:

1) Humanity stands to be profoundly affected by science and technology in the future. We envision the possibility of broadening human potential by overcoming aging, cognitive shortcomings, involuntary suffering, and our confinement to planet Earth [...] 8) We favour allowing individuals wide personal choice over how they enable their lives. This includes use of techniques that may be developed to assist memory, concentration, and mental energy; life extension therapies; reproductive choice technologies; cryonics procedures; and many other possible human modification and enhancement technologies.¹

The declaration advocates the usage of various human enhancement technologies (HETs) in order to alter the biological and chemical makeup of humans for progressive, artificial development; the future evolution of the human race is put in the hands of humanity. Should these technologies be researched and implemented, humans are no longer bound by the constructs of natural evolution. This has conspicuous implications for what it means to be human.

¹ Humanity+ Board, “Transhumanist Declaration,” Humanity+ (March 2009), http://humanityplus.org/philosophy/transhumanist-declaration/
and raises a number of philosophical, theological, and social policy issues.

The aim of this study will be to answer three questions related to human enhancement technologies: 1) do enhancement technologies constitute a corruption of what it means to be human? 2) does the usage of enhancement technologies, on average, promote the good of humans individually and collectively? and 3) what constitutes a justifiable distribution of enhancement technologies? To answer these questions, the study will be divided into two main parts.

Part I will provide an answer to the first question concerning human nature. To this effect, Part I will be divided into four chapters. Chapter I will focus on philosophical conceptions of human nature in the essentialist theories of Plato and Aristotle, the rational person theory of Kant, the social theory of Marx, and the conception of humans as radically free in Sartre’s atheistic existentialism. Chapter II will focus on theological conceptions of human nature embodied in the traditions of Judeo-Christianity, Confucianism, Taoism, and Hinduism. Chapter III will focus on scientific conceptions of human nature with special attention being given to
physicalism and Darwin’s evolutionary theory. Chapter IV will attempt to create a holistic conception of human nature by synthesizing parts from the preceding theories.

Part II will provide answers to the second two questions concerning the utility of human enhancement technologies and their just distribution in relation to the holistic conception of human nature synthesized in Part I. To this effect, Part II will be divided into two chapters. Chapter V will focus on answering the second question by subjecting enhancement technologies to a utilitarian analysis. This chapter will be divided into three subsections focusing on prosthetic enhancements, cognitive enhancements, and genetic engineering. Chapter VI will focus on answering the third question. This chapter will be divided into two subsections. The first section will focus on rights theories concerning access to medical care and the therapy-enhancement distinction. The second section will focus on constructing a just distribution based on utilitarian goals in maximizing the common good.

Using the holistic conception of human nature constructed, I will argue that certain human enhancement technologies carry with them more benefits than risks on both a micro level and a macro level: they promote the
goods of persons individually and collectively in society. Because they promote the goods of individuals and of society in general, certain human enhancement technologies should be developed and distributed. Although these technologies would ideally be made available to everyone at low cost, the existence of resource scarcity as an ontological reality necessitates that the availability of these technologies would be limited. Because of this, these technologies should be distributed in such a way that best promotes social values and the interests and goods of humans collectively.
PART I – CONCEPTIONS OF HUMAN NATURE

In his discussion on human dignity in *Our Posthuman Future*, Francis Fukuyama describes what he calls “Factor X.” Whatever else humans are, all humans contain Factor X. Once you strip away individual physical characteristics and socio-economic statuses, Factor X remains. This universal characteristic of humanity is what obligates everyone to treat one another equally and allows for the ascription of shared human rights.² If humans have this naturally, then it is prudent to consider whether the implementation of HETs will change what it means to be human and somehow affects human dignity by making some more dignified to the detriment of others.

Transhumanism’s schema imagines a transition from being human to being “posthuman.” There is a debate about whether the posthuman constitutes something that is no longer human.³ If HETs alter the cognitive, physical, and even genetic structures of a human, can that individual still be called a human? In order to tackle these issues, the nature of humanity needs to be addressed. What is a human? What traits can be generalized about the class of

“humanity?” From the outset we could argue that a human has a certain physical form including two hands, two legs, two feet, two eyes, a nose, and so on. But would that make an amputee less human? If the answer is no, then we need to revise this original position on what characterizes a human. Let’s say a single human is a contained entity comprised of matter and has a unique genetic structure that distinguishes humans from nonhuman species; now the amputee can happily be placed within the class of “humanity.” At this point we have a purely materialistic conception of what it means to be a human. Is this all that being a human entails?

The theologian will vehemently retort that this conception of a human is lacking a soul. Our theologian will deny this soulless model of the prototypical human as surely as an atomic physicist will deny the model of an atom without a nucleus and electrons. Other experts from various disciplines will likewise argue that being a human constitutes more than just a biological makeup. Whether or not they have a soul, humans do not simply live in a vacuum. Humans live in a society which they act upon and which acts upon them. Many argue that humans are social
animals or, in Aristotle’s words, political animals. These conceptions of human nature include much more than just the material makeup of what constitutes a human. They introduce potential supernatural elements and environmental variables into the mix.

In order to engage in the process of providing an ethical justification for the usage of human enhancement technologies, it is necessary to consider these different conceptions of human nature and whether these technologies would be promoted or denounced by them. Would an Aristotelian conception of human nature allow for the implementation of human enhancement technologies? Would an evangelical Christian conception? A Marxist conception? A Darwinian conception? Before delving into this historical survey of conceptions of human nature, it is important to define my research parameters.

The theories of human nature I intend to focus on include conceptions of: 1) the composition of a human, 2) humanity’s place within the universe, and 3) the ideal life generally desired by humanity. By composition of a human I

4 Aristotle Politics 1253a. All references to Aristotle come from the translations of The Internet Classics Archive.
mean the material, spiritual, and mental conditions that comprise a prototypical human. A conception of humanity’s place within the universe can focus on humans as social creatures placed within socio-political structures and can also focus on how humans might fit within a divine framework of the universe, i.e., how humans fit within a theological conception of reality. The third point focuses particularly on the teleological ends of humanity asking such questions as: what do humans desire? What is the ideal, utopian life for humans and how does that shape what it means to be a human and how one is to lead his/her life? Theories of human nature tend to revolve around these three concepts, but it should be obvious at the outset that not all of these concepts will be completely fleshed out by every theory presented here.

I intend to divide conceptions of human nature into three categories: philosophical, theological, and scientific. The first will include conceptions of human nature throughout the history of philosophy. The second will include conceptions of human nature embodied in various theological traditions. The third will include primarily biological conceptions of human nature. Following a presentation of the positions, I will use each theory as
a lens to critique the implementation of human enhancement technologies. Should the theories have directly addressed the phenomenon of these technologies I will include a treatment on these positions. For the most part, however, these theories do not directly address these technologies specifically or transhumanism in general; thus, I will instead make some conjectures about what these theories would have said regarding transhumanism given what we know about their conceptions of human nature.
The first part of my treatment of human nature will focus on philosophical conceptions of the topic throughout history. In particular, I will present essentialist theories provided by Plato and Aristotle, a Kantian theory of human nature, the socio-economic theory embodied in Marx, and the existentialist theories of Sartre.\(^6\)

**Essentialism: Platonic and Aristotelian Theories of Human Nature**

Essentialism as it pertains to human nature is the doctrine that all humans universally share some specific essence. A helpful way to frame this is by distinguishing essential properties from accidental properties. An essential property is something that an entire class of

\(^6\) This is obviously not an exhaustive list of philosophical theories of human nature, however, these figures provide some of the more salient conceptions of the topic.
individuals shares in common; it is a property that all individuals in this class must have by necessity or else they will no longer belong to this class. An accidental property, on the other hand, is a property that individuals can have, but it is not necessary for an individual to possess in order to be considered a member of a particular class.  

As a doctrine, essentialism finds its roots in the philosophy of Plato where the term is broadened beyond humans to include every entity in the universe. Not only do humans have a particular essence, but so do nonhuman animals and even non-sentient, mundane objects like rocks and tables; concepts like justice and beauty have their own particular essences respective to them as well. Important to Plato’s essentialist conception of human nature is his theory of the Forms.  

Plato outlines a difference between schools that define true reality as tactile and corporeal—reality is that which can be understood via sensory data—and those that define true reality as composed of unseen,  

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8 As a systematic philosophy, Plato’s theories of epistemology, social/political ideologies, ontology, metaphysics, and human nature relate to one another and span the corpus of his works. As such, I will focus primarily on the main points of his theory of the Forms and only in relation to his conception of human nature.
bodiless, intelligible forms.\textsuperscript{9} As such, there are two planes of existence: a corporeal, sensory one and a bodiless, intelligible one wherein the latter constitutes true reality. These two realms are not entirely divorced from one another, however, but interact. For every eternal, unchanging Form existent in the realm of the Forms there is a corresponding entity in the physical, sensory realm; the Forms are unchanging in the sense that their existence remains constant and static whereas physical entities are in a state of becoming which is variable.\textsuperscript{10} Corporeal reality is a manifestation of the Forms which act as blueprints for everything in the visible universe. The Forms constitute the essence of everything in the visible world. They are immaterial, universal, and transcendent yet everything immanent interacts with them.

The transcendental realm of the forms and the material universe constitute the ontological backdrop into which humans enter.\textsuperscript{11} Plato posited a creator entity called the “δημιουργός” (henceforth Demiurge). The Demiurge used the preexistent forms as a blueprint to create the material

\textsuperscript{9} Plato \textit{Sophist} 246-247. All references to Plato come from the Bollingen Series edition of 1961 utilizing the Stephanus referencing system.
\textsuperscript{10} Plato \textit{Sophist} 248.
\textsuperscript{11} Plato also provides a detailed cosmogony of the realm of the Forms and the material universe in the \textit{Timaeus}. Due to the scope of this paper, a presentation of his cosmogony has been omitted.
world. He also constructed the gods and human souls; in order for the gods to be on an elevated level comparative to humans, he had the gods construct the mortal vessels for his human souls. Once human bodies were created, he implanted the souls into them. To every soul was also designated a native star to which it would return should the person have lived righteously.\textsuperscript{12} To live well, to live righteously, was the vocation of every human being. In order to achieve this goal, humans were to obtain knowledge of the Forms. Or rather, humans were to recollect their knowledge of Forms. Plato’s epistemology was the basis for his soteriology. According to Plato, human souls dwelled within the realm of the Forms before being instantiated within a mortal vessel.\textsuperscript{13} Not only this, but human souls are to undergo a process of continual reincarnation until they have come to a proper knowledge of the Forms.\textsuperscript{14} Plato is relatively vague on the exact mechanics of this process, but he gives a general idea of how it works. Humans begin with coming into contact with material objects and through the processes of dialectic and internal reflection, they ascend to higher levels of understanding and reasoning.

\textsuperscript{12} Plato Timaeus 29e-42e.
\textsuperscript{13} Plato Phaedo 72e.
\textsuperscript{14} Plato Meno 81c-d.
until they come to have this proper knowledge.\textsuperscript{15} This true knowledge is different from mere perception or belief married with empirical evidence.\textsuperscript{16} True knowledge is acquired by recollection of what the soul had once come into contact with by interfacing with objects in the visible, sensory universe and by engaging in a process of shared reasoning and conversation.

The Platonic Forms thus constitute both the ontological reality of the universe and the goal towards which humans ultimately strive. Since there are Forms of goodness and justice, the Forms constitute ethical ideals to which all humans should attempt to embody.\textsuperscript{17} However, to attain this ideal of perfection, humans must strike a balance between the potentially discordant parts of their souls. This is where Plato introduces his tripartite structure of human souls. In the \textit{Phaedo}, Plato paints a picture of human souls locked in a constant struggle with their fleshly prisons.\textsuperscript{18} Physical pleasures and needs are hindrances to the acquisition of true knowledge. If one pursues earthly delights or natural sustenance and maintenance, that individual is distracted from reflection.

\textsuperscript{15} Plato \textit{Republic} 510a-e.
\textsuperscript{16} Plato \textit{Theaetetus} 210a-b.
\textsuperscript{17} Plato \textit{Republic} V 472b.
\textsuperscript{18} Plato \textit{Phaedo} 64d-65b.
The unbound intellect would be able to attain true knowledge of the forms divorced from the body much more easily. Unfortunately, this is not the case. Therefore, the only recourse is to bring the different parts of the soul together into harmony.

Plato identifies the three parts of the soul as the appetitive, the spirited, and the rational. The appetitive element is that which is identified with bodily desires. The rational element is that which reasons and directs. The spirited element is the part of the soul which feels emotion and can be swayed between the appetitive and the rational. The just human is one whose rational and spirited elements are allied to direct and control the appetitive passions. Justice within is a harmonization of these three elements which would otherwise be locked in civil war with one another. A harmonized soul is a healthy soul which is most conducive to coming to have true knowledge of the forms. While this doctrine was defended by Plato and his followers, it was not upheld by Aristotle.

Whereas Plato postulated transcendent Forms which all relevant physical entities participated in, the Aristotelian form was instantiated within all entities of

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19 Plato Republic IV 439a-441c.
20 Plato Republic IV 441e
the class to which they belonged. In other words, Aristotelian forms are properties within things rather than transcendent entities in which individual things participate. Consider the example of a dog. In the Platonic theory, all individual dogs would participate in the Form of Dog. In the Aristotelian theory, the essence that constitutes the class of “dog” would be instantiated within every individual dog. This essence is considered the formal cause of Aristotle’s four causes.

In order to have proper knowledge of anything, Aristotle claims that one must understand the four causes of an entity. The four causes are the material cause, the formal cause, the efficient cause, and the final cause.\textsuperscript{21,22} The material cause is that out of which something is composed. The formal cause is the form that matter takes; it is the definition of a thing’s essence or what pattern a thing takes. The efficient cause is that which brought the entity into existence. The final cause is the teleological end towards which the entity moves. Consider a bronze statue of a human. The material cause of the statue would be the medium the sculptor uses to create it, in this case bronze. The formal cause would be the form of a human

\textsuperscript{21} Aristotle \textit{Physics II} Part 3.
\textsuperscript{22} Aristotle \textit{Metaphysics V} Part 2.
statue. It should be noted that the form of something isn’t just the shape something takes; the form of something is its essential attribute. The efficient cause would be what causes the existence of the statue. In this case, the sculptor as well as the tools the sculptor uses to create the statue would be the efficient causes. The final cause would be the end towards which the statue was created. If the statue was created for primarily aesthetic purposes, then this would be the teleological purpose of the statue in question. Concerning Aristotle’s theory of human nature, I will focus primarily on the formal and final causes of a human.

“Aristotelian essentialism” is defined by Quine as saying that some things are necessarily essential properties of an entity as opposed to being accidental properties. Quine claims that humans are essentially rational and accidentally bipedal. It is an essential property of a human to be rational while a one-legged human could still be classified as such. However, there is nowhere within Aristotle’s works where he claims that rationality is the one and only essential property of

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There are two schools of thought concerning the meaning of saying that humans are essentially rational. One reading claims that rationality is one essential capacity of humans, but there are other essential capacities as well. Another stronger reading is more exclusionary and argues that rationality is the form and essence of being a human. Being rational is the one characteristic that sets humans apart as a unique class. Answering this question is not pertinent to the aims of this section, however, I err towards the "weaker" version of this argument and agree with Stevenson who argues, "The human soul or mind should thus be understood not as a thing, but as a distinctive cluster of faculties, including reasoning, that are fundamental to the human way of living and functioning" [italics in original]. Rationality is a distinct aspect of the overall formal cause—the soul in its entirety—of a human.

Inherent in this argument is Aristotle’s departure from Plato’s dualism. Whereas Plato postulated the relationship between the rational soul and the body as
being akin to that of a prisoner within his or her prison, Aristotle argues that the question of whether the soul and body is one is meaningless; the material and formal causes are likened to wax and the shape it takes given by a seal.\textsuperscript{27} The soul is not an additional or separate thing from the body, rather, it is the way a body functions and lives; the soul and the body cannot exist as discrete entities. This is what constitutes a human for Aristotle and ties directly into his notion of the ideal life.

In the \textit{Nicomachean Ethics}, Aristotle seeks to find the final end towards which all humans move and he identifies this end as “happiness.” Aristotle’s conception of happiness is something that is a good in itself and is not used as a means to another end; it is for this reason, e.g., that financial gain cannot be said to be an end towards which humans strive because money is used as a means towards other ends.\textsuperscript{28} Happiness or flourishing is achieved over a lifetime once humans engage in their proper function. The proper function for humans is activity of the soul employing the rational faculty in accordance with excellence or virtue.\textsuperscript{29} Virtue for Aristotle is embodied in his theory of the mean which posits a balance between

\begin{footnotesize}
\textsuperscript{27} Aristotle \textit{On the Soul II Part 1.} \\
\textsuperscript{28} Aristotle \textit{Nicomachean Ethics I Part 7.} \\
\textsuperscript{29} Ibid.
\end{footnotesize}
extremes.\textsuperscript{30} Courage is the mean between foolishness and cowardice. Temperance between gluttony and asceticism. The mean will differ for different individuals. What verges on cowardice for one may be courageous for another. It is up to the individual to use his or her rational faculty to determine his or her own mean. Many of the virtues are also characterized as civic virtues which are best embodied by humans living together in society. Aristotle also characterizes humans as political animals.\textsuperscript{31} Humans can only attain full development by living in community with one another. This has a practical component. Many virtues can only be realized when people live in community. A man cannot be generous if he cannot donate resources to those less fortunate. A woman cannot be kind if she cannot share affection with others.

These constitute the philosophical theories of human nature inherent in both Plato and Aristotle. On review there is nothing explicit in their philosophies of how human nature relates to human enhancement technologies. However, given their theories of human nature I will infer how they would evaluate HETs. Consider Plato’s conception of human nature. A human is a soul ensnared within a bodily

\textsuperscript{30} Aristotle \textit{Nicomachean Ethics II Part 2.}  
\textsuperscript{31} Aristotle \textit{Politics I Part 2.}
vessel; Plato was not subtle in his disdain for the body in favor of the rational soul. What constitutes a human for Plato is not the body. Indeed, a human soul is able to move from one body to another over multiple lifetimes. Plato’s mind-body dualism can be likened to Descartes’ metaphor of the pilot in a ship in Meditation Six. If this is the ontological reality of a human, then enhancing the human body using prostheses or chemical enhancements is no more unethical than replacing the sails, hull, or rudders on a ship; doing so does nothing to radically alter what it means to be human. If the enhancements serve to lessen any physical pains or insurmountable difficulties, then this would likewise free the mind from additional distractions. As a result, it seems Plato would have no hard objections to HETs.

Aristotle’s conception of human nature is different and, as a result, needs a different response. Matter and a distinct cluster of faculties—reason being one of these faculties—constitute a human. HETs can alter the outward, material form and the chemical, genetic composition of a human. Prostheses do not pose a particularly great problem to the question of the ethical usage of HETs in relation to altering human nature. It is unlikely that chemical HETs or
enhancements affecting the cognitive abilities of humans such as nootropics (pharmaceutical cognitive enhancements) will serve to dramatically alter the cluster of faculties that comprise the formal cause. Indeed, there are currently types of cognitive enhancements which some argue will lead to an increase in civic virtue and, as a result, stronger social communities; an increase in civic virtue would be seen as a good according to Aristotle’s ethical system.

Cognitive enhancements currently in existence include pharmaceutical options like Ritalin and Adderall as well as noninvasive brain stimulation procedures like transcranial electrical stimulation and transcranial magnetic stimulation. Jefferson et al. propose that these cognitive enhancements lead to more informed and more active citizens.\(^3\) Individuals who utilize cognitive enhancements would be better able to acquire and interact with knowledge of political systems, values, and current issues. Beyond civic education, these enhancements would further aid students across the board in a number of subjects throughout their education leading to increased levels of literacy and numerical skills. The authors present a number of empirical studies showing a strong correlation between

civic education on the one hand and political activism and more informed choices on the other.\textsuperscript{33} If these cognitive enhancements lead to a more active political life as opposed to apathy on the side of voters, this would allow individuals a greater opportunity to engage in civic virtue and become more effective moral actors. To this end, Jefferson et al. analyze research surrounding moral enhancements which would affect conative or affective states and alter dispositions towards aggression, racism, and empathy.\textsuperscript{34} While this area of study is relatively new, the authors report new studies which show increased levels of trust and cooperation among study participants as well as decreased levels of aggression. Whether currently viable or not, these moral and cognitive enhancements would theoretically increase active political participation and a willingness to engage in virtuous activity: both exercises which I infer would be lauded by Aristotle.\textsuperscript{35}

After considering the philosophies of Aristotle and Plato, I argue that HETs would not be completely out of the question when paired with their theories of human nature.

\textsuperscript{33} Ibid., 512-513.
\textsuperscript{34} Ibid., 514.
\textsuperscript{35} There is something called the “Accomplishment Argument” which I think poses a serious problem when considering virtue ethics. I will introduce this argument in the next section on Kant and will relate it to Aristotle’s ethics at the conclusion of this chapter and in Chapter IV.
Instead, these technologies have the potential to help humans better regulate their lives. They can help ease physical distractions and improve cognitive functions. By improving cognitive functions and removing external distractions, humans would be better able to contemplate and arrive at true knowledge of the Forms through dialectic and intellection. An increase in cognitive function could also potentially lead to a more fruitful and engaged civic education which would correlate to increased political activism and participation. Moral enhancements would also theoretically help humans be better moral actors.

This concludes my treatment of the essentialist philosophies of Aristotle and Plato. In the next section I will present a Kantian theory of human nature and how this theory would consider the ethical nature of human enhancement technologies.

**Reason and Morality: A Kantian Theory of Human Nature**

Classical philosophies argue that human nature is stable and constant; human nature exists as a given entity.\(^3^6\) This is obvious in the essentialist theories enumerated in Plato’s and Aristotle’s conceptions of human

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nature. This vein of thinking is apparent in Kant’s conception of human nature as well which is wedded to the idea of the rational individual. The sources of knowledge for Kant, as opposed to understanding the four causes or intellection of the Forms, come from two processes. The first process includes input of empirical, sensory information. The sensory organs take in sounds, smells, tastes, sights, etc., and this he calls the receptiveness of impressions. The second process includes intuition of pure concepts in the absence of sensory experience. He calls the first matter and the second form; sensation is the matter of sensible knowledge and the intuition of what is left following the interaction with sensible objects is the form. However, in his conception of reason, Kant stresses that we are not merely individuals who passively receive sensory data. Reason allows us to both systematize the sensory data we receive and act on the world; humans have agency. This agency ties directly into his conception of morality and humans as moral agents.

In the *Groundwork*, Kant makes a distinction between hypothetical imperatives and categorical imperatives which are both reasons for action. Hypothetical imperatives

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37 Kant *Critique of Pure Reason* B74-75. All references to Kant (besides references to the *Groundwork*) come from the translations from the online archive at *Early Modern Texts.*
provide road maps to achieve particular desires; an individual wants something and believes a certain course of action will achieve that end.³⁸ Student A wishes to graduate with a degree. In order to do so, student A should attend class and pass her exams. This rational course of action constitutes a hypothetical imperative. However, hypothetical imperatives involve a should as opposed to a moral ought. Categorical imperatives, on the other hand, include moral oughts, i.e., moral obligations. Individual A does B because she is morally obligated to do so regardless of self-interest. Whereas hypothetical imperatives are usually used to realize self-interested ends, categorical imperatives are intuited a priori and involve pure reason; acting out of categorical imperatives disregards personal desire. For example, person A may desire to steal C from person B. This would make person A happy. If the end goal is to make person A happy, then a hypothetical imperative could justify stealing item C. However, categorical imperatives must involve actions that can be applied universally in a way which treats persons as ends in themselves and not merely as means.³⁹ Kant would argue that it would be irrational to justify a categorical imperative

³⁹ Kant, *Groundwork*, 88; 95.
where individuals could steal from one another in order to make themselves happy.

Morality is a function of human reason and it requires that humans are morally responsible for their freely taken actions. Kant argues that the only thing that is good in itself is a good will. It is a good in itself because it is not consequentially good, that is, the good will is not good because of the ends it brings about. This distinguishes Kant’s morality from consequentialist theories of ethics. Actions are morally correct not because of the good consequences they elicit, but rather, because they are morally correct in themselves. Kant’s third formulation of the categorical imperative, the kingdom of ends, idealizes a world where everyone acts from the universalized system of maxims. Everyone treats themselves and others as ends in themselves. Kant is clear in stating that the kingdom of ends constitutes an ideal and is not necessarily a practical state of affairs; it seems too idealistic to assume that everyone in the universe would always act purely from duty. Such a world would be the pinnacle of human agency and the actualization of the good will.

40 Kant, *Groundwork*, 62.
41 Kant, *Groundwork*, 100-101.
Kant recognized that humans could not be likened to beings which had no self-interested desires. Humans have within themselves a constant conflict between desires and duty akin to the conflict between the appetitive and rational elements of Plato’s tripartite soul. Kant recognizes a “radical evil” in human nature, a frailty or weakness of will similar to Aristotle’s ακρασία (akrasia). Radical evil is associated with rational selfishness that manifests itself in society. This radical evil is not identified with human desires. Rather, radical evil is the conscious subordination of duty to selfish desires and inclinations.\(^{42}\) This freedom of will can also be distinguished from deterministic conceptions of reality. He posits two rules or orders of nature. In the empirical world of appearances, humans are causally determined bodies similar to everything else in the universe. However, insofar as humans are rational beings, they are free. Pure reason stands outside of the temporal world so it does not exist in the determined world of cause and effect.\(^{43}\)

A Kantian approach to human nature defines humans as rational agents. They are freely able to rationalize universal maxims and act out of duty, the doing of which

\(^{42}\) Kant Religion Within the Boundaries of Mere Reason I.2-3.
\(^{43}\) Kant Critique of Pure Reason B577-579.
constitutes moral activity. However, unlike nonhuman animals who act only out of desire or purely rational beings who have no self-interest, humans contain a broiling conflict within themselves between the two. Would this conception of human nature revile or support HETs? Considering the phenomenon of cognitive enhancements and moral enhancements, I infer that Kant would support their usage. Reason’s true function is to support a will which is good. In order for reason to function properly, humans must have the proper capacities to engage in the logical and transcendental operations required of reason. Maxims derived from the categorical imperative are a priori cognitions arrived at through reason. A better use of reason could lead to a more extensive array of maxims realized by rational agents. An improper use of reason could lead to misunderstanding the dictates of the categorical imperative and would thereby generate “perverted” maxims which do not have Kantian intentions. Improperly functioning rational faculties could lead to moral agents making judgments leading them to rationalize activities such as lying, theft, or murder. Cognitive and moral enhancements like those proposed by Jefferson et al.

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Kant, *Groundwork*, 64.
could, instead, stimulate a mind to be healthier with properly functioning faculties of reason.

There are also debates that cognitive enhancements somehow devalue the “dignity” behind the work completed by medicated individuals. A medicated student who scores a perfect grade on an exam is seen as less dignified than a student who isn’t medicated who scores an A- on an exam; the underlying argument here being that the non-medicated student had to work harder on his or her own merit rather than under the influence of a performance enhancing drug. This position is defined as the “Accomplishment Argument” which states that the work of medicated individuals are “inauthentic and that the use of enhancement degrades one’s character.”

From a virtue ethics standpoint—where the constitution of one’s character is important for moral qualification—this would pose a problem. While Kant did not devalue the morality of one’s character, he was far more concerned with moral agents acting solely from a determination of duty. Actions have moral content if they are done for the sake of duty and not because moral actors are inclined towards acting morally. The character or merit of the moral actor is inconsequential when compared to

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46 Kant, Groundwork, 65.
acting for the sake of duty. Indeed, acting solely from duty when the inclination of the moral agent is to not act from duty is more commendable than if the moral agent is inclined to act in such a way.

As a result, I do not think Kant would side with proponents of the “Accomplishment Argument.” Instead, I infer Kant would agree with the efficacious use of cognitive and moral enhancements to allow for a more effective utilization of the faculties of reason. I now turn to the socio-economic view of human nature posited by Karl Marx.

Humans as Social Creatures: A Marxist Theory of Human Nature

Whereas Plato and Aristotle sought to identify humans by some essence distinguishable from other creatures and Kant identified humans by their rational faculties, Marx identified humans by their relations to society. In his Theses on Feuerbach, Marx comments on the nature of what it means to be human when he says, “[…] human essence is no abstraction inherent in each single individual. In its reality it is the ensemble of the social relations.” To

consider a human is to consider that individual within a complex web of interrelationships. This is not to say that Marx is not aware of the biological makeup of humans, however, what is true of humans in one social era is not necessarily true of humans in another social era. Humans may share more or less the same biology throughout time, but what defines humans includes where they come from rather than merely of what they are made. Fromm paints this nicely when he distinguishes between the constant or fixed drives of humanity—those such as hunger and sexual urges—and the relative drives or appetites which are molded as a result of social conditioning.\textsuperscript{48} The constant drive is integral to human nature whereas the latter is contingent.

Marx’s conception of human nature is important for the current study because it includes external causes as salient to the development of humans. As opposed to looking at humans as self-contained entities and considering their essential characteristics distinguished from other entities, Marx focuses on humans in connection to their environments and how that affects one’s psychological makeup. Indeed, he stresses that humans are not atoms in the sense that an atom is self-sufficient and has no

relation to entities outside of it.\textsuperscript{49} To this conception he adds another universal generalization: humans are naturally active, productive beings. This is why being alienated from one’s labor, as is the norm in capitalist countries, is so harmful. It’s harmful not just on a socio-economic basis, but on a natural basis as well.\textsuperscript{50} It is not just that humans are predisposed to be productive, rather, humans \textit{ought} to be productive—a value judgment is attached. By alienating a person from their labor and the fruits of their labor, the employer is in effect alienating a person from their teleological end. A human is thus an entity which is composed of 1) constant, basic drives universal to all within the class of humanity, 2) relative drives contingent on the place and time an individual finds himself or herself in, and 3) a desire to both be a productive individual and to reap the fruits of that production.

The prescription for humans living in Marx’s time under a capitalist economy was to enact a practical revolution which would put an end to alienation—both in an economic sense and in a sociological sense—and an end to exploitation by a wealthy class. Steinhoff notes two


aspects to this revolution: 1) it must be an actual, physical revolution and 2) technological advancement is a necessary precondition for the revolution.\textsuperscript{51} The first aspect requires that the workers physically seize the means of production as opposed to a merely theoretical revolution where people agree that capitalism is harmful. The second aspect is meant to precede the first. Marx establishes a relationship between slavery and technology where the former can only be abolished with the continual advancement of the latter. A society where people do not have the basic necessities required for survival is not one where workers can be effectively liberated. By using technology, the necessary amount of human labor devoted to satiating basic necessities is decreased. According to Steinhoff, transhumanism and the technologies it utilizes would satisfy the requirements presented by Marx.

Transhumanism embodies openness to the creation and implementation of synthetic augmentations to human biology. Steinhoff calls attention to nanomachines which can be inserted into the body to enhance biological functions such as digestion and healing.\textsuperscript{52} Practical modifications such as


\textsuperscript{52} Ibid., 5.
these satisfy the practical requirement instituted by Marx and also relieve humans of some of the burden which their constant, integral drives put on them. Steinhoff argues that transhumanists, although recognizing these drives—what he calls the passive, needy drives—disavow their necessity or desirability.\textsuperscript{53} HETs could effectively downplay their overbearing presence in human lives. Here he echoes Glover who argues that certain parts of human nature, such as those which contribute to self-expression and self-development should be preserved.\textsuperscript{54} The pleasurable and relationship enhancing elements of the integral drives relative to sexual desire and hunger could and should be retained while the instinctual elements of them can be lessened; humans would have more control over the degree to which they engage in these drives.

Steinhoff also argues that transhumanism shares Marx’s flexible conception of human nature.\textsuperscript{55} Qualitatively different forms of human life will arise in the future due to the utilization of HETs. If one is wedded to a biological model of human nature, then human nature can be said to change. This is not a drastic departure from Marx’s

\textsuperscript{53} Ibid., 8.
\textsuperscript{55} Steinhoff, 9.
conception of human nature except Marx imagined that human nature was psychologically flexible due to the environment one found himself or herself in. It is important to point out—as Steinhoff does as well—that transhumanism departs from Marx in the sense that transhumanists generally do not consider the sociological environment of transhumanists. Rather, they imagine transhumans as atomistic individuals who transform themselves and the social consequences of this transformation arise later. Steinhoff argues that, while technology can change social structures, transhumanists should be cognizant of the fact that social structures influence technology and, inevitably, humans.

While transhumanists generally carry the atomistic, progressive individual as their standard, I would argue that Marxism would support the utilization of HETs. HETs would free humans—at least to a degree—from their need for basic necessities and allow them to flourish as individuals. If HETs give humans an increase in productive capacities, then this would also satisfy their teleological desire to be more productive. There also appears to be nothing proscriptive of Marxist conceptions of human nature in relation to transhumanism. Both share a flexible view of

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56 Ibid.
57 Ibid., 11.
what it means to be human and there is nothing apparent in Marx which forbids altering one’s “essential” nature.

Existentialism and Radical Freedom: A Sartrean Theory of Human Nature

According to Stevenson, there are three main concerns central to existentialism: 1) with individual human beings, 2) with the meaning or purpose of human lives, and 3) with freedom. Rather than theorize about general conceptions of what constitutes humanity, existentialism focuses on the uniqueness of particular individuals and what makes their lives important. Rather than objective truths, existentialists seek subjective meaning contingent on the individual. It is within the purview of the individual to have the freedom to choose his or her own values, meaning, purposes, and lifestyle; not only this, but individuals ought to exercise their freedom by acting on their conception of the universe and their purpose within it.⁵⁸⁵⁹

Metaphysically, Sartre denies the existence of God and this provides the existentialist with a different worldview. If there is no God, then there are no divine

⁵⁸ Stevenson, 227.
⁵⁹ Being aware of the theoretical morass behind defining the term “existentialism,” I opt to sidestep this particular quandary. In the preface to Existentialism from Dostoevsky to Sartre (Cleveland: The World Publishing Company, 1956), Walter Kaufman gives a concise yet extensive overview of the major figures grouped under the term.
commandments handed down to humans. There are no objective truths which humans can understand, reason, or obey. Unlike Aristotelian final causes or theological soteriologies, there is no set end towards which humans can strive. The foundation for values or meaning rests firmly on human reason and intuition.60

Similar to Marx, Sartre recognizes that there are generalizable biological facts about humans. However, there are no general truths about the aims and purposes of humanity. He argues that, while God does not exist, humans desire to become God in the sense that humans want to be complete and self-justifying.61 However, if each human is a complete, self-justifying entity then there is no general ought. True to the typical existentialist point of view framed by Stevenson, the meaning and purpose of humanity is relative only to the individual. Humans are free to choose their own purpose and meaning. Aside from general biological truths, the only thing humans share is that all humans are “condemned to be free.”62

61 Ibid., 566.
62 Ibid., 439. It is this concept of “radical freedom” (simplified) which I am mostly concerned with in relation to transhumanism. Sartre’s conceptions of being-in-itself, being-of-itself, reflective consciousness, prereflective consciousness, and nothingness are all beyond the scope of this study.
Sartre believes that we are fully conscious and rejects psychic determinism and a Freudian notion of unconscious mental structures. For Sartre, consciousness is completely transparent which allows for complete freedom—even freedom over the emotions. To allow for the existence of an unconscious which affects conscious decisions in a horizontal progression of causes would be to wrest some of the freedom from the choices individuals have. According to Sartre, Freud was wedded to a conception of the unconscious which rejected the idea of tabula rasa. Instead, humans were all preconditioned by their place in the family and their place in society. This form of psychic determinism would take control away from humans even before birth and this is not something Sartre is willing to allow.

Being conscious of one’s own freedom, however, is not a pleasant experience and Sartre believes that we typically try to avoid it; he calls this recognition of freedom “anguish.” He thinks that we enter into what he calls “bad faith” by attempting to deceive ourselves into believing that our choices are somehow determined. By rationalizing our decisions as being determined by external causal

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63 Ibid., 49.
64 Ibid., 458.
65 Ibid., 40.
factors or by genetic predispositions, we are practicing bad faith.\textsuperscript{66} The idea of “good faith”—where one is conscious of one’s freedom—however, involves a paradox. To be conscious of one’s freedom involves describing one’s role or character and doing this introduces a distinction between the one doing the describing and the one being described; in order to describe oneself, an individual must consider himself or herself objectively and separately.\textsuperscript{67}

There seems to be no “ethically correct” way to live according to Sartre. There is no way of life that is qualitatively better than another way. It is only better for one to live in good faith rather than in bad faith (although this seems to be impossible). This also appears to present another intuitive ethical dilemma. Taking this argument to its logical extremes would justify the murders of the serial killer who takes responsibility for his or her actions is somehow “better” than someone who acts in bad faith by not taking full responsibility for his or her actions. The onus of what is ethical is placed firmly upon the consciousness of the individual as opposed to being identified with particular actions. This goes against any utilitarian ethical system or even a virtue ethic which

\textsuperscript{66} Ibid., 44.
\textsuperscript{67} Ibid., 62.
still pairs internal character traits with external actions. Unfortunately, Sartre never published any works that constructed an ethical system akin to Kant’s deontology, Mill’s utilitarianism, or an Aristotelian virtue ethic.⁶⁸

Sartre’s views of radical freedom shifted in his later years from the individual to the social. Despite his earlier works not allowing humans to engage in bad faith on the basis of their environmental conditions, Sartre admitted that freedom can be constrained by “facticity” which includes one’s external and internal situations. The choices of a slave are externally constrained and the choices of the terminally ill are internally constrained. Stevenson argues that, while humans are abstractly free such as they are in Being and Nothingness, they are not free in concrete, realistic terms.⁶⁹ Since freedom is what Sartre values, realistically increasing the capacity to make free choices is a laudable goal. Stevenson restates what Sartre says in Notebooks for an Ethics when he says that humans give up becoming Godlike in the sense of being individually self-determining by becoming Godlike in another sense: “seeing ourselves as the only sources of

⁶⁸ Stevenson, 241.
⁶⁹ Ibid.
salvation and purpose in the world.”

This leads to a Marxist desire for a socialist, classless society where everyone is equally able to exercise his or her own free choices. Stevenson illustrates this two pronged approach as consisting of: 1) becoming self-aware and changing ourselves for the better and 2) working towards a society where all have this opportunity of exercising freedom.

It appears as though a Sartrean analysis of human nature lends itself to a conception most accepting of transhumanism. The transhuman exercises freedom beyond that of a normal human by transcending their biological limitations. HETs in the form of prostheses allow humans to surpass their physical limits and cognitive enhancements give them a better chance at entering into a good faith relationship with themselves. Both of these enhancements would increase the efficacy of the first prong illustrated by Stevenson. HETs would also be successful in bringing about a society where all have the opportunity to exercise their freedom in the way illustrated in the section above on Marx. By transcending the biological shackles of satiating basic necessities—or at least lessening a dependence on them—transhumans would be able to focus more

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Ibid., 242.
Ibid., 243.
on developing a sense of group solidarity and discard feelings of social alienation.

**Philosophical Summary**

Each of the theories thus far elucidated contain their own conceptions of human nature. The essentialist conceptions identify an ontological human essence that distinguishes humans from other entities. An Aristotelian conception of humans gives them a rational faculty and argues that humans are political animals. To act ethically in an Aristotelian sense is to cultivate the virtues. Prostheses and nanomachines can help alleviate the physical stresses of human life thereby freeing the rational faculty of humans to focus on contemplation of the Forms. Cognitive enhancements can lead to a richer rational life and allow individuals the opportunity to better understand the requirements to maintain a virtuous mean and can also allow them to engage in a more lively political life. It should be noted that the “Accomplishment Argument,” which argues that the actions of moral agents are devalued if they utilize HETs, could be supported by an Aristotelian virtue ethic. If this is the case, then any “moral merit” otherwise derived from a virtuous action cannot be attributed to the moral agent.
Kant also identifies humans with their rational capacities and attaches any sense of “moral merit” to acting out of a sense of duty rather than out of inclination. Cognitive enhancements have the potential to increase cognitive function and to allow humans the ability to intuit a more extensive array of maxims. The Accomplishment Argument does not carry as much weight here since moral weight is attached to moral agents acting out of a determination of duty. Therefore, a Kantian theory of human nature would be more accepting of HETs.

Identifying humans by their integral, biological qualities and their external circumstances, Marx posited a socio-economic view of human nature where humans ought to be productive creatures who take control of the means of production as well as the fruits therewith. HETs would allow humans to be more productive creatures and would give them the ability to take over the means of production by being freed from a constant preoccupation with basic necessities.

Sartre gave humans the special characteristic of being radically free: they are the creators and arbiters of their own meaning, purpose, and lifestyle. They are also not individually determined by circumstance. However, later in
life, he argued that human freedom can be constrained by external and internal factors and that, once becoming self-aware, all humans should work to create a classless, Marxist society which lessened these constricting elements. HETs would be able to accomplish both of these goals. Transhumans would be able to transcend their physical and mental limits through prostheses and cognitive enhancements. Then, having done so, they would be able to actualize a Marxist environment.

These philosophical conceptions of human nature say something important about what it means to be a human; they touch on elements of human biology, cognition, socio-economic status, and metaphysical situation. They appear to be generally in favor of the implementation of HETs. However, there are other systems of belief and cosmology which affect how humans see their own nature and their place in the universe. These systems will comprise my preoccupation with theological conceptions of human nature in the subsequent section.
CHAPTER II

THEOLOGICAL CONCEPTIONS

Some of the most virulent opposition to HETs arises due to theological conceptions of human nature, especially in those conceptions which postulate divine creator figures. Traditions which subscribe to such a view naturally reject any human tampering in the domain of what has been deemed the creator's purview. Such phrases as "playing God" used in the negative have been thrown around in order to disparage research into genetic engineering and the human genome. Nature, including human nature, is meant to behave according to an overarching divine determinism; God has created everything to act in such a way that is analogous to this plan. This is similar to Aristotle's final cause where everything acts in such a way as to strive towards a teleological goal. To not do so is to

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72 In order to conduct a general study of theological conceptions of human nature, I have relied primarily on secondary source material provided by Leslie Stevenson et al. in Twelve Theories of Human Nature and Stephen Prothero in God Is Not One.
misdirect one’s aims or to miss the mark, the original meaning of the word “sin.” Intruding on the genetic structure of humans constitutes one way in which theologians argue humans are out of their depth.

This chapter will focus on such theological conceptions as well as conceptions which allow for a more relaxed or even a supportive view concerning the utilization of HETs. Unlike the previous chapter which focused on specific philosophers and their philosophical conceptions, this chapter will focus broadly on certain religious traditions and their conceptions of human nature. Such a scope will obviously neglect any study of specific denominations, sects, or offshoots of particular religious traditions as well as the array of opinions and beliefs inherent in each—or even anomalous theories arising from prevalent individuals or small groups within those denominations. As a result, the reader should not assume that my treatment of theological conceptions of human nature and transhumanism constitutes the conception of all of the denominations within the treated religious traditions as a whole.

Instead of presenting the conceptions of human nature of each religious tradition in detail, this chapter has
been separated into two main divisions: 1) conceptions of human nature of the Judeo-Christian tradition and 2) conceptions of human nature of eastern religions. The first will broadly consider the traditions of Judaism and Christianity. The second will broadly consider eastern conceptions of human nature found in Confucianism, Taoism and Hinduism.

A Judeo-Christian Conceptions of Human Nature

In *Genesis*, God created the world and everything in the world. As opposed to the Demiurge of the *Timaeus* who creates the universe using preexisting materials and the Forms, the God of the Old Testament creates everything *ex nihilo*. God deemed everything he created to be essentially good. This includes humans. Humans, in their original state prior to the disobedience of Adam and Eve, are inherently and naturally good. The reason this is important is because this implies that to change humans into something other than what they are goes against the will of

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73 It may be argued that the omission of Islam constitutes a major error. While a section looking specifically at how the Islamic tradition would view HETs would be interesting, it would not yield extraordinarily fruitful results in this study. Despite social attitudes juxtaposing Judeo-Christianity and Islam, the three share very similar ideas and Islam adopts the majority of the Judeo-Christian corpus. While there are differences between Islam and the other Abrahamic faiths, there are not major differences in their conceptions of human nature.

74 Gen. 1:31.
God and so may affect the inherent goodness of what it means to be human.

According to the Hebrew conceptions, humans exist primarily in their relation to God.\textsuperscript{75} Indeed, humans are set apart from other sentient creatures by the fact that they are made in the image of God and are given a special imperative to be stewards having dominion over all other life and over the world.\textsuperscript{76} Humans not only have a special place in nature, they are continuous with it; humans are made from the dust of the ground.\textsuperscript{77} Here Stevenson supports the idea (with which I concur) that humans should not be considered as dualistic beings, that is, humans are not the combination of a body and a soul similar to the dualism of Plato and Descartes. Rather, he claims that the Hebrew word translated as “spirit” is better thought of as “wind” or “breath.” The conception of the soul in Genesis agrees more readily with the Aristotelian conception of a nonsubstantial soul.\textsuperscript{78}

Inherent in this conception of human nature is that humans are given free will.\textsuperscript{79} Humans can choose whether or

\textsuperscript{75} Stevenson, 121. \\
\textsuperscript{76} Gen. 1:26. \\
\textsuperscript{77} Gen. 2:7. \\
\textsuperscript{78} Stevenson, 123. \\
\textsuperscript{79} I am aware of the extensive scholarly debate behind the nature of human free will in relation to a divine plan, God’s foreknowledge, and
not they wish to obey God. Unfortunately for those who choose the latter, there is extensive narrative content—beginning with the disobedience of Adam and Eve—to show that this path leads to despair and death. Humans were created in order to enter into fellowship with God. The foundation of all human goodness comes from this fellowship and from entering into communion with the creator. This constitutes human sustenance and salvation as well as the teleological end of what it means to be human. To not strive for this end or to fail in retaining fellowship with God is a corruption of human nature and a defilement of human goodness. This purpose of humanity is embodied in the covenants made between God and Israel which the latter struggles with throughout the duration of the Old Testament. When Israel acts in obedience to the will of God, the people lead a relatively pleasant life free of strife and pestilence. However, when Israel acts disobediently by engaging in carnal activities or idolatry, they are beset with war and plague. This exclusivity of the nations of the Earth in favor of Israel seems to be the extent to which humans are free. Due to the scope of this study, I will focus solely on the prevailing conception that humans have almost total, cognitive free will in a Hebraic conception of human nature presented by Stevenson.

Stevenson, 124.
weakened to include humanity in general towards the latter books of the Old Testament.\textsuperscript{81}

God is made more immanent with the later inclusion of the New Testament and the appearance of Jesus Christ. Jesus, as an instantiation of God the Father, lives among and teaches the people of the world. Following the death and resurrection of Christ, the believers are each given a portion of the spirit of God.\textsuperscript{82} This Trinitarian conception of the divine more strongly links the people of the world to their creator. The belief in Christ as the incarnation of God broadly constitutes what it means to identify oneself as a “Christian.” Christ taught humans how to properly worship God and how to become sons of God through baptism and through reception of the spirit. According to Stevenson, Christianity widened the conception of what it means to be human by showing that human nature is, in some sense, divine.\textsuperscript{83}

In Paul’s letters this becomes an important concept and the way through which humans can achieve salvation. The distinction between the flesh and the spirit is a common trope in Paul’s letters and he frequently admonishes his

\textsuperscript{81} Ibid., 126.
\textsuperscript{82} Acts 2:1-5.
\textsuperscript{83} Stevenson, 128.
audience to not be solely preoccupied with the activities of the former. Through baptism, the followers of Christ are to live a life in the spirit. Paul uses the imagery of clothing oneself in Christ or putting on the armor of God. This is not to say that the biological nature of humans is fundamentally evil or impure. Rather, it is to live a life purely focused on fleshly desires that Paul warned against. In order to achieve salvation, humans do not shed their previous natures, but instead strive to actualize a symbiosis of their old natures with a new, spiritual nature. However, while Paul does not say that physical nature is inherently sinful, he does seem to imply that all that is sinful finds its genesis within the unspiritual nature.

So what does a Judeo-Christian conception of human nature have to say about transhumanism? As stated previously, it would be remiss to assume that there is only one conception of human nature identical for all Judeo-Christian denominations; there is a vibrant array of different subgroupings under the heading “Judeo-Christianity” all with their own conceptions of what constitutes human nature and what constitutes proper action.

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84 Eph. 6:13; Rom. 13:14; Gal. 3:27.
85 Gal. 5:16-25.
in relation to the divine. These conceptions allow for a variety of behaviors that may be comfortably orthodox in one sect and fringing on unorthodoxy in another. Despite this, there has been overwhelming religious literature in recent decades which has decried transhumanism as a form of hubris in defiance of the will of God.

In his review of *Transcendence: The Disinformation Encyclopedia of Transhumanism and the Singularity* by authors Sirius and Cornell, Chris Toumey gives a concise summary of the tension between religion and transhumanism. He argues that transhumanism touts the ability to allow humans to transcend their mortality via emerging technologies. These technologies will effectually “discredit religious narratives about prophecy, salvation, transcendence, eternal life, and apocalypses.”⁸⁶ There is, at the heart of transhumanism, a fundamental rebellion against fatalism and traditional soteriological conceptions. Toumey references Bainbridge who claims that transhumanism allows humans to become godlike by achieving a sense of immortality.

From a superficial standpoint, the experiment of transhumanism appears to change the nature of what it means

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⁸⁶ Chris Toumey, “Salvation and Apocalypse, but only if you have the right technology,” *Cross Currents* 65, no. 4 (December 2015): 548.
to be human. If humans were essentially good in their primal state, then changing human nature with HETs effectively veers away from the original human project and from its essential goodness. The presupposition is that when God made humans in His image, humans were meant to be perfect material prototypes. For humans to change this with HETs is to, in a sense, call God’s work inferior and argue that there is ample room for improvement on God’s creation. To disdain the creative work of God and claim one’s own efforts are superior is essentially an act of hubris. This focus on the self also alienates one from coming closer to communion with God. It is choosing a path which ignores and bypasses the salvific element of Christ’s death and resurrection. It is akin to saying, “Although Christ might have died to destroy the institution of death, I have found an alternately superior way to do so without having to go through the hassle of actually dying first.”

Sutton claims that transhumanists do not subscribe to the perception of the giftedness of life. Michael Sandel espoused and presented this view to the President’s Council of Bioethics. The view acknowledges that there are certain aspects of the world that are not open to human intervention. It is the recognition that even one’s own
talents and powers are not wholly of his or her own doing or even fully possessed by him or her. This recognition curbs what he calls the “Promethean project” which is the human desire to shape the world and human nature to human aspirations and preferences. In his retort against the effort to remake humans, Sandel appeals to the “Accomplishment Argument” claiming the use of HETs undermines human dignity and achievement. He provides the example of athletes using pharmacological and genetic enhancements. Suppose there are two accomplished athletes: one strives to become better through effort and the other is naturally gifted. If the first were to use HETs, this would undermine his accomplishment since he or she would be taking a shortcut to being a better athlete and the achievement would not be his or her own. However, Sandel says that the point of sports is not effort, but excellence and that corrupting the gift is more disillusioning than disdaining effort. The usage of pharmacological enhancements like steroids or genetic enhancements is an expression of effort and willfulness. Sandel appeals to the “Accomplishment Argument” claiming the use of HETs undermines human dignity and achievement. He provides the example of athletes using pharmacological and genetic enhancements. Suppose there are two accomplished athletes: one strives to become better through effort and the other is naturally gifted. If the first were to use HETs, this would undermine his accomplishment since he or she would be taking a shortcut to being a better athlete and the achievement would not be his or her own. However, Sandel says that the point of sports is not effort, but excellence and that corrupting the gift is more disillusioning than disdaining effort. The usage of pharmacological enhancements like steroids or genetic enhancements is an expression of effort and willfulness. 

I think this presents more of a problem than Sandel proposes and I disagree that the point of sports is merely excellence and not effort. After all, human consciousness lauds the ideal of sportsmanship and effort as an ideal good in itself and not merely the end result of winning. Athletes who utilize dirty tricks to win against their opponents are not commended even if they do so within the bounds of the rules.
willfulness is, at its heart, pitted against the idea of giftedness. Willfulness is placed in contention against giftedness, dominion against reverence, and molding against beholding.  

This hubris objection embodies precisely the flaw in humanity, according to the Judeo-Christian tradition, which leads to humanity shuffling further away from God. It is a rejection of God’s spirit in favor of a technological spirit. It is a rejection of fellowship with God to achieve salvation in favor of actualizing one’s own salvation through material means. Humanity’s pride and desires are put above recognizing the sanctity and goodness of God’s creation. By this denial of the divine and nature, Sutton argues that transhumanists do not accept the notion that life is not under our control. She also claims that transhumanists generally support a form of reductionist materialism. This rejects the notion of humans as immanent bodies and transcendent spirits united into one entity. Although Stevenson argues that this is not a faithful rendering of human nature, it is an image that many

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88 Michael J. Sandel, “What’s Wrong with Enhancement” (paper presented and discussed at the meeting of the President’s Council on Bioethics, December 2002), https://bioethicsarchive.georgetown.edu/pcbe/background/sandelpaper.htm.
theologians and laypersons espouse. Transhumanists also wish to shed their old bodies in favor of new, enhanced bodies. In some cases, the transhumanist desires to download his or her consciousness into computational, synthetic systems. This constitutes a rejection of the inherent dignity and goodness of the body and it also rejects the soteriological conceptions of Judeo-Christianity. Transmigration of souls is rejected in favor of the transmigration of mental processes.

This project of Promethean hubris lies at the crux of many Judeo-Christian objections to transhumanism and it is not the aim of this study to seek out a reconciliation between the two systems of thought. These objections argue that transhumanism is essentially a project which seeks to eliminate the fear of death through human means by enhancing human capabilities. It dismisses faith in the salvific powers of God and of Christ’s death and resurrection. Rather than having faith in God, transhumanism can represent a form of uncertainty in the very existence of a divine figure. In the absence of the divine, what is left is a Sartrean reality of radical freedom where humans are left to actualize their own

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90 Sutton, 122.
91 Ibid.
destinies. However, Judeo-Christianity does not comprise the totality or even the majority of theological conceptions of human natures. It is in the next section where I will present some eastern religious conceptions of human nature.

**Eastern Theological Conceptions of Human Nature**

As there are a colorful assortment of different conceptions and theories amongst the denominations of Christianity and Judaism, there are also a vast array of different beliefs within the traditions which I have subsumed under the heading of “eastern theologies.” Focusing on a number of eastern traditions in a single section immensely narrows the scope of inquiry and limits what are otherwise rich traditions filled with extensive histories of myth and lore. The primary purpose of this section is to showcase eastern traditions which differ in their sense of the importance of the individual. To this effect I have included pithy treatments on Confucianism,

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92 Like the omission of Islam in the preceding section, the omission of Buddhism in this section would seem—to a western audience—constitutive of a major error. However, Buddhism has been omitted here for the same reasons Islam was omitted in the preceding section. Despite constituting a major religious tradition on its own, Buddhism shares very similar views of human nature with certain conceptions of Hinduism. The ideas of karma, liberation, and samsara (to be described subsequently) are shared with both traditions. As a result, adding a section of Buddhism—while interesting—would not yield drastically new considerations for HETs.
Taoism, and Hinduism and how each would evaluate the merits of transhumanism in relation to human nature.

**Confucianism**

Supported as China’s official native orthodox tradition, Confucianism is not usually defined as a religion but as an ethical system instead. It lacks a clerical hierarchy and organization such as that found in other major religious institutions. Confucianism is also distinct in that it does not concern itself with metaphysical questions. In the *Analects*, Confucius had the following responses to metaphysical questions, “You are not able even to serve man. How can you serve spirits? [...] You do not understand even life. How can you understand death?” The major concern in Confucianism is how one should live in this life and what constitutes correct and ethical living. For Confucius there were absolute moral truths given by the “Decree of Heaven.” This decree comprises a moral imperative that everyone is meant to follow in order to effect social order and harmony—the Zhou dynasty in China at this time was embroiled in internecine conflicts and warfare and Confucianism offered one of a

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94 Stevenson, 19.
number of remedies.\textsuperscript{95} In congruence with the dictates of the Decree of Heaven is Destiny. The material parts of one’s life are due to Destiny which includes one’s socio-economic and historical situation. Destiny is composed of the vagaries of fate and is not something anyone can determine or change. The only thing which people are in control of is how they respond morally to their surroundings. This Stoic reality of the universe is what humans must contend with in a Confucian cosmology.\textsuperscript{96}

Confucius argues that all humans have access to this ultimate morality. Every human is potentially what he calls a sage or a gentleman. Whether humans are naturally good or evil has been up for debate and constitutes two main divergences within the history of Confucianism. The main problem in the world is social discord, and Confucius gives ways to effect social harmony. It should be clear that the focus of Confucianism is on interrelationships between individuals on not on individuals themselves or their personal salvation or betterment. Indeed, Confucius is very Kantian in his assertion that any actions done for any personal sake have no moral content.\textsuperscript{97} In order to embody what it means to be a gentleman, Confucius says that people

\begin{itemize}
\item \textsuperscript{95} Prothero, 109-110.
\item \textsuperscript{96} Stevenson, 20.
\item \textsuperscript{97} Ibid., 22.
\end{itemize}
should seek to be benevolent. Benevolence means one has a sense of inner serenity which makes one indifferent to matters of fortune. This would also help an individual to not be concerned with their personal welfare and selfish desires.

Confucianism is also characterized by strict social relationships. Some of the most influential social relationships are those found within the family. The family itself is seen as the most elementary unit in that it stands as a symbol for all within society. The ruler is to the subject as the father is to the son and fellow citizens are to one another as siblings are. Sons are to obey their fathers and fathers are to act as moral exemplars and act ethically towards their progeny. Again, the concern is not with the individual, but with society. It is telling that the foundational unit is the family and not the individual.98

Confucianism also emphasizes strict adherence to ritually correct behavior presented in the form of rites. These rites, or “li,” cover a wide range of practical social situations. In order to act ethically, prospective gentlemen are expected to study and become familiar with

98 Prothero, 111.
these rites and proper ways of acting. This is achieved by studying the Classics which illustrate actions of past sages acting as prototypical figures that individuals are expected to emulate.\textsuperscript{99}

There is an interesting conflation of concern with individuals and with society in general in Confucianism. Although the main focus is to effect social harmony, this can only be done if individuals act ethically in response to one another. As the family is to society, so is the individual to the family. Individuals follow the moral rule and become sages, not entire societies. This makes a consideration of Confucianism’s response to transhumanism more complex. In a sense, Confucianism constitutes a type of virtue ethic. There are particular virtues which individuals are prescribed to cultivate. People study the virtues embodied in the Classics and put them into action in their social relations. Individual virtue and action is, therefore, important. This brings up the constant specter of the Accomplishment Argument which has been shown to be a salient and persistent obstacle in reconciling human nature with HETs and the philosophy of transhumanism. There is something particularly problematic in artificially enhancing humans to allow them to act more ethically.\textsuperscript{99}

\textsuperscript{99} Ibid., 27.
Unenhanced humans would have to put in more effort in everyday life. In relation to Destiny, enhanced humans would have a better situation and this could allow them to more easily act ethically. Furthermore, cognitive enhancements would undoubtedly allow enhanced humans to more easily learn and inculcate the proper rites.

On the other hand, HETs do have the potential to allow for better relations among individuals. This was evident in transhumanism’s effects in relation to Marx’ socio-economic conception of human nature. HETs allow humans to break free of being enslaved to basic necessities and to be able to be more productive individuals. Ruipang Fan offers a further convincing portrait of how Confucianism would consider transhumanism. In considering Sandel’s giftedness argument, Fan claims that Confucianism would not have as many intrinsic problems with HETs. He argues that giftedness implies there is a gift giver, but there is no giver proposed in a Confucian ethic.\textsuperscript{100} Also, Sandel espouses a view which, while allowing for medical interventions, rejects enhancements. Fan claims that a Confucian would allow for genetic engineering which would increase a child’s IQ as long as there were no negative side effects.

This constitutes a typical distinction between medical intervention and enhancements—a salient trope in the discussion concerning transhumanism. Sandel argues, "[...] enhancement no longer [intervenes in nature] for the sake of health, but represents a boundless bid for mastery and domination." While Sandel does not wish to conflate giftedness solely with a Judeo-Christian ethic, this statement certainly has the flavor of one. There is an implication that nature is something sacred and should not be tampered with unless the aim of the tampering is to correct what has been corrupted. Fan, therefore, has ample support in his argument that Sandel has a "thin account" of giftedness; although Sandel does not want to espouse a Judeo-Christian ethic, his argument relies on it. The latter uses general principles taken from metaphysical and religious doctrines to show that—in the case of parents using prenatal genetic enhancements—individuals are treating their children as objects of design. By rejecting the religious traditions as foundational, Sandel’s general principles lose their currency and force. In response, Fan offers a Confucian conception of giftedness.

Children are seen as gifts from recent ancestors in Confucianism’s focus on the family. They are imparted with a nascent ability to act virtuously which they are meant to actualize. The purpose of this gift is to provide for individuals who would live a family-based, virtuous way of life. Fan offers a list of core values:

[...] venerating one’s ancestors, strengthening basic human relations, promoting the continuity, integrity, and prosperity of the family, practicing family determination (rather than individual determination) on important issues of family members, and the like.

If genetic engineering or other forms of HETs further these aims, then the Confucian should not be opposed to them. Here, there is no explicit concern with altering what is otherwise natural. Fan offers a few examples. If one wanted to change one’s skin color, this would not be honoring one’s ancestors. Another example he gives would be to genetically engineer individuals to be predisposed towards homosexuality if such a change would cause the engineered individuals to be more intelligent on average compared to heterosexual individuals. He argues that this would violate the paradigmatic relationship between the husband and wife and would, therefore, not be acceptable. Confucianism, when

102 Fan, 67.
103 Fan, 68.
applied to different types of HETs, will correspondingly be either disposed positively or negatively towards them.\textsuperscript{104}

It is, therefore, not correct to make any blanket statements regarding the morality of HETs in a Confucian ethic. In the sense of social relationships and social values, Confucianism will vary in its response to HETs. While the Accomplishment Argument could claim that the moral actions of enhanced individuals do not have as much moral value as those of unenhanced individuals, the primary focus is on human flourishing blossoming in the interaction between individuals.

\textbf{Taoism}

Another of China’s Three Teachings, Taoism has many stark differences in comparison to Confucianism. As opposed to the artificial world of society, Taoism urges adherents to hearken back to what is natural and to live life to the fullest. Depending on the Taoist tradition, this prescription takes various forms, from seeking physical immortality to giving oneself to the ebb and flow of life.

Particularly important to the tradition is the conception of the Tao. The Tao—also transliterated as Dao—is “both transcendent and immanent, both perfection and

\footnote{\textsuperscript{104} Ibid., 68–69.}
potential, [beginning] and endless [...]”\textsuperscript{105}\hspace{1em} It embodies what is natural and what is an authentic human life. There is an emphasis on returning in the sense of returning to what is natural and to leave the artifice of society which sucks the generative life out of individuals. In order to do this, humans should be their primordial selves as they were before education, learning, and societal norms and values molded their characters into something artificial. The ritual and etiquette prescribed by Confucianism is seen as harmful in Taoism.\textsuperscript{106} Taoism subverts the negative association with human nature inherent in a Hobbesian philosophical framework. Whereas Hobbes saw humans as naturally selfish and egotistic so that life prior to society was vile and short-lived, Taoism sees a return to nature as a positive where humans can be their authentic selves. The sage in Taoism is the “genuine person” as opposed to the gentleman.\textsuperscript{107}

There is also a concept called wu wei which has been translated as “noninterference” or “no action.” The goal of wu wei is to minimize one’s actions and to allow oneself to be caught up in the flow of life. The concepts of wu wei and returning both appear to denigrate any utilization of

\textsuperscript{105} Prothero, 293.
\textsuperscript{106} Ibid., 289.
\textsuperscript{107} Ibid., 287.
HETs. HETs are, at an intrinsic level, artificial methods of enhancement. To genetically engineer anything is completely antithetical to allowing nature to take its course; it is, quite literally, interference in nature. Synthesizing and metabolizing cognitive enhancements alters the chemical composition of the body in a way that is not inherently natural. Using prosthetic enhancements physically alters the body in a way that is paradigmatically artificial; doing so does away with what is natural in favor of what is synthetic. It appears, therefore, that Taoism would be essentially in opposition to HETs.

However, there are other concepts in Taoism which are characterized by a focus on change as well as naturalness. Life itself is change and to work against change is to undertake intentional action. Instead, humans are meant to yield instead of pursue.\textsuperscript{108} They should also embrace change. Prothero says that the \textit{Daodejing} says to “glory in transformation.”\textsuperscript{109} If HETs embody anything, they embody transformation. In what Prothero defines as “popular Taoism” or “religious Taoism,” adherents are preoccupied with achieving physical immortality and stories are

\textsuperscript{108} Ibid., 295.
\textsuperscript{109} Ibid., 297.
permeated with ways in which certain figures do so. While these immortals exemplified nature, they were also able to defy it; the elements did not affect them and they were able to perform supernatural feats.\textsuperscript{110} Many Taoists researched and practiced outer and inner forms of alchemy in an attempt to achieve longevity. Outer alchemy manipulated elements and external objects in order to effect immortality; examples of this would be the ancient stories of the pursuit for the philosopher’s stone or the fountain of youth. Inner alchemy sought to use internal techniques to regulate one’s qi through sexual practices and self-cultivation. The latter, seemingly more natural, does not appear as though it would recommend HETs. However, the techniques of outer alchemy seem to endorse the usage of HETs. They allow one to extend his or her life and to live a longer life to the fullest.

It should be noted that, like its philosophy, Taoism itself is a mutable beast with many different variations and no prescribed texts. While certain books are appealed to, there is no set canon as there is in the Abrahamic faiths or even in Confucianism. In this sense, Taoism is comparable to Hinduism in its ability and willingness to absorb and syncretize various theories and opinions into

\textsuperscript{110} Ibid., 305.
one nebulous entity. As a result—like the other traditions covered—there is no one conception of human nature and no one preferred way to become a genuine person.

Hinduism

The term “Hinduism” is better understood as an umbrella term arching over and above a number of varied traditions replete with their own texts, beliefs, and rituals over the course of millennia. Whereas philosophical Hinduism focuses on gaining true knowledge in order to achieve liberation (moksha) from the cycle of birth and rebirth (samsara) with a conspicuous absence of gods and goddesses, later devotional forms of Hinduism emphasize cultivating a personal relationship with a particular god or goddess in order to be free from the sensible world.¹¹¹

For the purposes of this study, I intend to focus particularly on philosophical Hinduism which places an emphasis on a personal path to achieving liberation. Whereas the earlier Vedic priests engaged in ritual sacrifice as a way to institute order in the universe,¹¹² mystics known as renouncers were the exemplars of philosophical Hinduism. Withdrawing from society, these

¹¹¹ Prothero, 137.
¹¹² Ibid., 141.
renouncers turned their backs on wealth and status in favor of retreating into a life of introspection and yogic exercises. By doing so, the mystic generates no new karma. Karmic law claims that individuals are born and reborn as a result of their actions in previous lives. If someone generates negative or positive karma in their lifetime, then it is cosmically required that they reap the consequences of those actions. Since people die with a store of good and bad karma, they are necessarily required to be reborn in a new life reflective of that surplus; people who generated mostly good karma would be born in a greater station and those who generated negative karma would be born in a lesser station.\footnote{Ibid., 147.} Whereas the priests were attempting to overcome chaos as the main cosmic ill—akin to the Confucians and Taoists—the renouncers were attempting to leave the cosmos altogether.

Essential to achieving moksha (liberation) is having and experiencing a true understanding of the universe. One of the major narrative corpuses in Hinduism is the \textit{Upanishads} and one of the central tenets in the \textit{Upanishads} is the idea of a single, unifying principle known as \textit{Brahman}.\footnote{Stevenson, 36.} While everything appears to be separated in the
universe, this is nothing but an illusion. Everything is one and the one Brahman is everything. By breaking through the veil of ignorance (maya) which claims entities are separate, humans are able to see that they are a part of this oneness of the universe.\textsuperscript{115} While the Upanishads recognize an individual self and human soul separated from others, this is not true reality. The essential self, or atman, is itself Brahman. The individual human is the vessel through which the universe perceives itself.

This has interesting implications for HETs. The essential nature of humanity is synonymous with the essential nature of the entire universe. It would be absurd to conclude, from the perspective of philosophical Hinduism, that HETs constitute some dire corruption of a primal human nature. Any argument pertaining to “playing God,” would also be rendered null. Humans are God in a sense; any human actions would be “playing God.” Using prosthetics would not violate some fundamental quality of what it means to be human. Using cognitive enhancements could potentially give humans the increased cognitive faculties necessary for understanding the true reality of the universe. However, there are also some criticisms philosophical Hinduism can have of HETs.

\textsuperscript{115} Prothero, 148.
There are different conceptions of the relationship between atman and Brahman, between the world of multiplicity and ultimate reality. One of the most well-known Hindu philosophers, Shankara, claimed that Brahman is the only ultimate truth and that the experiential world is unreal.\textsuperscript{116} Maya distorts the true reality from giving form to the formless and is the foundation for all ignorance. This doesn’t mean that the world doesn’t exist and can be reduced solely to subjective idealism. The world is existentially real, humans just don’t perceive it as it truly is.\textsuperscript{117} The individual soul is a part of this apparent reality. Viewing the self as separate is a symptom of ignorance. Although an opponent to Shankara’s prescription of renunciation, Ramanuja also rejected actions which bound humans further to the world. For example, the sacrifices of the Vedic priests were offered in expectation of a particular consequence, i.e., order. Instead of engaging in this kind of action or in completely renouncing the world, Ramanuja recommended giving oneself up to the flow of life directed by God.\textsuperscript{118} To act deliberately according to one’s own desire is, essentially, binding oneself closer to the

\textsuperscript{116} Stevenson, 45.
\textsuperscript{117} Ibid., 46.
\textsuperscript{118} Ibid., 51. For Ramanuja, God was a being which engaged in deliberate action. Humans should come to have an intimate connection with God reminiscent of the goals of devotional Hinduism.
illusion of the world and going against the natural flow—similar to rejecting the Tao in Taoism.

Herein lays the potential Hindu critique of HETs. By pursuing improvements through synthetic means, humans are binding themselves closer to the world by attaching themselves to the consequences of their actions. Preoccupation with one’s physical and cognitive condition is a preoccupation with something that is ultimately unreal; it represents buying into the ignorance that underlies reality. Humans should abandon this preoccupation in favor of engaging in actions which are more conducive to achieving true knowledge of the world.

**Theological Summary**

Compared to philosophical conceptions of human nature, theological conceptions of human nature are not quite as conducive to HETs. Whereas the Judeo-Christian cosmology rejected HETs on the basis that they pervert the fundamental nature of what it means to be human, eastern theological conceptions point out that they divert one’s attention from more pressing concerns. In Hinduism, a human should focus on limiting one’s karmic actions and fashioning and implementing HETs is not representative of this goal. Improving oneself through these technologies
also goes against the natural flow of the universe. Both Hinduism and Taoism warn against not giving oneself up to the machinations of the cosmos. Instead, humans should immerse themselves in the cosmic tides.

Each of the theological conceptions presented seem to have, at their heart, otherworldly concerns and perhaps it is here where there is a clash between HETs and religious traditions. HETs are very this-worldly and put the focus on changing and improving the here and now. They also typically embody a type of individual hubris and longing to rise above one’s given allotment in life. By becoming a posthuman, the individual transcends caste, class, and taxonomy. This aspiration is reminiscent of Lucifer’s desire to ascend above the throne of God: “I will raise my throne above the stars of God […] I will ascend above the tops of the clouds; I will make myself like the Most High.”\(^{119}\) It is a dismissal of the actions of a cosmic creator or a director. It is a denial of nature. It is a denial of any faith in the turning cogs and wheels of the universe. Transhumanism is about finding salvation in the here and now as opposed to waiting for it in the future. Whereas religion was an opiate of the masses for Marx, transhumanism constitutes an active revolution of the self.

\(^{119}\) Isaiah 14:13-14.
that can be turned outwards for productive means. Now that several philosophical and theological conceptions of human nature have been proposed, what is left is a consideration of a scientific conception of human nature.
CHAPTER III

SCIENTIFIC CONCEPTIONS

As opposed to the previous two sections which included a number of different conceptions of human nature, this section will focus primarily on describing humans within a framework of physicalism. To that effect, I will first describe what physicalism entails and how humans fit into its schema. Following this, I will present a Darwinian conception of human nature and intention.

Physicalism, as a form of ontological monism, is the doctrine that everything in the universe can be reduced to a physical nature. While the term is sometimes used interchangeably with materialism, this convention has its opponents. One major vein of opposition to this convention is the argument that there are things in the universe, such as gravity, which cannot be defined as “matter” in the
traditional sense. In response to assertions of physicalism, there has arisen an accompanying body of research explaining what it means to say everything is physical and what this assertion means for such things as mental states; in particular, what kinds of things are mental states and how can they be linguistically reduced to physical states?

One attractive feature of physicalism is its ability to reduce everything in the natural world to testable data. If everything is physical, then it is possible to observe and quantify everything that is in the known universe using the scientific method. Repeating experiments and verifying previously asserted hypotheses allow individuals to arrive at a valid consensus regarding facts concerning the physical world. This consensus is more convincing than an individual’s relation of abstract concepts or personal revelations to others. The scientific method, with its focus on the natural world, can give physical evidence that certain philosophical or theological assertions about

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121 Due to the scope of this study, I will not go into any further detail regarding reductive physicalism or any further research entailing physicalism’s implications for mental states.
reality—or about the supernatural—are ill-equipped to provide.

The ontology of a physicalist doctrine does not, in itself, carry with it any discussion or indication of an overarching plan in nature or intentional action. Without appended philosophical or theological metaphysical theories, there is not (as of yet) any empirical verification showing that nature has conscious intentions or moves towards an intended goal.\textsuperscript{122} This allows for an existentialist blank slate ripe for a Sartrean (or indeed any atheist) to provide his or her own lifestyle and life goals without being constricted within an overarching divine or natural plan. It is within this purely physical world where humans fit in as another manifestation of material monism.

Considered within the ontological universe of physicalism, humans and all of their components can be boiled down to physical properties. Mental states—including emotions, desires, intentional action, and the will—all find their genesis in physical properties. A philosophical and linguistic way to say this is that all sentences about

\textsuperscript{122} While there are arguments in favor of panpsychism (the theory that all matter has some type of conscious properties), physicalism by itself does not entail this idea. Indeed, a pure physicalist theory would likely argue that even these conscious or mental properties could ultimately be reduced to physical properties.
mental states are essentially sentences about physical states; to talk about mental states is just another way to talk about physical states. A human is, therefore, a complex organism comprised of a number of physical processes and components the conglomeration of which is sensible, sentient, and self-aware. However, reducing humans to such a state says nothing about what humans ought to do. If it is asserted that physicalism entails a description of the universe and of nature where there is no transcendental ought outside of human imagination, then there is no ultimate aim for humanity. Wiped clean of theology and philosophy—human made constructs under a physical conception of the universe—the physical universe is ethically neutral and unbiased. In his book *People or Penguins*, William Baxter also asserts this claim when he writes, “I reject that there is a ‘right’ or ‘morally correct’ state of nature to which we should return. The word ‘nature’ has no normative connotation.” In this view, normative ethics is a human construct and finds its foundation and continued operation in the minds of humanity or in the minds of conscious beholders. This conception of the world is ripe for a Humean sense of morality where that

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which is considered virtuous is what causes pleasure and that which is considered vicious causes pain or unease; humans lavish praise on others and themselves when they act in such a way that is pleasing and elicits a positive response and the opposite goes for that which elicits a negative response. Even moral principles, which are oft given hallowed status over and above the mundane, have their birth in physical properties. The exploits of philosophy, ethics, art, literature, and the humanities in general have their birth in physical processes.

The specifics of human characteristics beyond a flat claim of their physical entailment have preoccupied theorists for millennia. This has led to a vast corpus of literature emerging from the social sciences since the early 19th century coupled with works by natural philosophers from earlier centuries. These works have focused on the drives behind human action, desire, consciousness, instinct, social characteristics, and more. Providing a concise summary of the work undertaken by social scientists, anthropologists, philosophers and psychologists would be an awesome feat and one which I will not undertake in this study. While there are a plethora of individuals coming from these fields who endeavor to
explain the human condition and human nature, one of the most influential is Charles Darwin, from whose work an explosion of subsequent critiques and theories erupted.

Darwin’s theory of natural selection offered an explanation for adaptive evolution. According to Stevenson, the theory had four main empirical generalizations:

1. There is variation in the traits of individuals of a given species.
2. Traits of parents tend to be passed on to their offspring. [...]
3. Species are intrinsically capable of a geometric rate of increase of population.
4. The resources of the environment typically cannot support such an increase.\(^1\)

Considering these four facts about the natural universe and about species’ relationships with their environment, Darwin came to the conclusion that certain individuals in a given species have a better chance than others to pass on their genetic traits to offspring. This allows for the operation of “sexual selection” which lets certain physical characteristics not necessary for biological survival live on in future generations; Stevenson points out the heavy antlers of stags and the ornate tails of peacocks as examples.\(^2\) There is internecine conflict within a species for both survival and propagation. Those who

\(^1\) Stevenson, 248.
\(^2\) Ibid., 249.
are the fittest in a given environment are those who are best able to pass on their traits to subsequent generations. The instinctual desire to propagate is a trait in nonhuman species and is no different in humans.

Given this empirical fact about the universe, some argue that the main goal of human nature is to survive and pass on traits to subsequent generations. Survival is the prescription for human nature. However, survival in the biological sense doesn’t carry with it any connotations of a moral ought. It’s one thing to say that humans want to survive. It’s quite another to say that humans ought to survive. Preempting this observation, Stevenson claims that a scientific consideration of the world only provides facts. In order for an ought to exist, a corresponding value judgment must exist as well. Indeed, it may objectively be the case that it would be better for the natural world if humans did not exist at all. In Respect for Nature, Paul Taylor points out that the Earth’s biosphere could potentially be greatly

126 Ibid., 251.
improved if humans are eradicated as a species. \footnote{127} Humanity as a species is a relatively new arrival to Earth and is dependent on the environment to function and survive. However, the Earth is not dependent on the existence of humans for its survival. Despite the radical ecological effects humans have had on the environment, it is quite possible that the Earth can recover and retain a symbiotic balance after it has shaken humans off like bothersome fleas.

Following Darwin there was a torrent of theorists who expanded on and refined his theories. Genetic studies flourished as did corresponding prevailing attitudes and programs concerning eugenics, racism, and sexism. All of these programs which posited a “correct” way to live or a “correct” way to be carried with them corresponding value judgments. Those with inheritable defects and diseases were seen as having less value than those who did not. Events such as the Holocaust in Germany and fitter family competitions and compulsory sterilization programs in the United States were instituted with the aim of perfecting the human race. However, it should be noted that all of

these programs—in manifesting value judgments—drift away from pure physicalism.

What do these scientific conceptions of human nature say about HETs? As stated, there have been a number of different socio-scientific conceptions of humanity. Some of these conceptions have argued that what constitutes a human is primarily matter: a human is a complex physical structure comprised of biological components and a history of inherited genetic information. Others have focused more on a social explanation for human nature: human behavior finds its genesis mostly in the surrounding environment. Behaviorists like Skinner and Watson claimed that humans acted as a result of exposure to environmental factors. Skinner claimed the environment selects behavior in individuals through a program of corresponding reinforcements and punishments. Watson claimed that anyone could be conditioned to become anything from a respected physicist to a thief. Others proposed a synthesis of nature and nurture. Chomsky asserted this in his studies on linguistics. Reacting against Skinner who proposed that language was inculcated socially through conditioning, Chomsky

128 Stevenson, 265.
claimed that this did not explain the unique internal mechanisms that humans must have that allows them to learn and use languages. While the language learned may vary between linguistic cultures, how language is learned is due to an innate universal component.\textsuperscript{129} This is readily adopted by a Marxist conception of human nature which recognizes the relative drives resulting from social forces and the fixed drives in humans as a result of their shared biological makeup.

Recognizing the molding effect of social influences and the genetically inherited and biological factors of human nature, it appears obvious that human behavior is affected by both. Furthermore, society and the individual affect one another such that humans cause their society and societies affect the units of which they are comprised. Within a physicalist framework, it is possible to contemplate societies and the individual without any parallel value judgments or moral oughts. Societies naturally emerge from congregations of individuals to meet various needs and wants such as shelter, security, and social interaction.

\textsuperscript{129} Ibid., 269.
Focusing on this physical conception of human nature where social and inherent factors play a role, it would seem HETs can have an important part. All of the HETs considered help humans to live more comfortably and more securely in their environments. Prosthetic enhancements allow humans to surpass their biological limits and take greater control over their environment. Cognitive enhancements give humans greater rational capabilities and the ability to come up with new ways to ensure their continued survival and to deliberate on and surmount their problems. Genetic engineering gives humans control over the fundamental building blocks that heavily influence behavior and desire, and allows humans to eliminate those traits and inheritable diseases which are not conducive to continued survival.\textsuperscript{130} There are also many types of HETs which have positive social consequences. Think tanks staffed with cognitively enhanced individuals will be better equipped to tackle social

\textsuperscript{130} Many of the prevailing arguments against genetic engineering are in response to the eugenics movement. Indeed, the elimination of inheritable traits and diseases is a form of negative eugenics discouraging the propagation of certain traits. Many advocates of the disabled crusade against genetic engineering because it has a tendency to presume that the lives of those who have disabling inheritable diseases are not worth living relative to those without the diseases. This will be considered in more detail in Chapter V where I will discuss the positive and negative components of genetic engineering in general.
issues and come up with novel solutions. Teams comprised of biologically enhanced individuals can work together to overcome physical obstacles and complete projects more quickly. A group of enhanced construction workers could theoretically finish building projects in a shorter amount of time than those who are not enhanced; physically enhanced individuals would have more strength and would not be beset as harshly by fatigue and muscle wear.

Generally, the conception of human nature that physicalism invites would be far more conducive to HETs than some of the philosophical and theological theories proposed. The main reason why this is the case is because there are no accompanying value judgments with a purely physical ontology. If humanity’s main goal as a species is survival, then whether HETs should be used or not is an empirical question. If HETs increase humanity’s chance of survival, then they should be used and the reverse if they do not. Therefore, it should be the goal of an advocate for HETs to prove that they do indeed benefit humanity’s goal of survival and continued propagation.
CHAPTER IV

TOWARDS A SYNTHESIS

This concludes my partitioned analysis of philosophical, theological, and scientific conceptions of human nature. They all presuppose different theories of the universe, of human biological makeup, and of human goals and desires. They all give different diagnoses for the ills of human nature and prescriptions for how humans ought to act to fulfill either some instinctual desire or some overarching divine plan. As has been seen, and will be reiterated, several of these theories are mutually exclusive and it will not be conceptually possible to combine all of the elements from each into a coherent and believable structure. Despite this impossibility, I will attempt to create a compatible synthesis of these disparate conceptions—or at least as much of a synthesis which is possible.
In order to work towards a synthesis of the theories into one conception of human nature which can be carried into subsequent chapters, it will be necessary to outline the following: 1) a metaphysical backdrop, 2) a structural conception of what constitutes a human, and 3) what constitutes the ideal life of humanity (if you remember, these were the three questions raised in the introduction to Part I). Answers to the first question will attempt to frame the universe in which humans live in terms of its genesis, its purpose (if there is one), and its structure. Answers to the second question will detail the components of an individual human including their physical and/or mental capacities compositions. Answers to the final question will attempt to articulate the needs of humanity and imagine a potential world where humans are most able to flourish. These were all questions raised and analyzed in view of the aforementioned conceptions of human nature considered. It is a synthesis of these that is required now.

When it comes to answering the first question concerning the metaphysical background in which humans
enter, it is conspicuously obvious that a total hybrid of the theories is impossible. Sartre’s and Marx’ atheism and a purely physicalist conception of the universe does not allow for a marriage with the theological conceptions proffered; those philosophers deny the existence of a God and physicalism does not allow for the existence of a transcendent or supernatural deity. While it makes sense to talk about religion and religious institutions in a purely physical universe—specifically as manifestations of human imagination and desire—it is impossible to assert any truth value when dealing with entities that cannot be empirically verified; to deny the existence of religious convictions is to deny an empirical fact, but to deny the truth of the subject of religious convictions and beliefs can be supported with empirical evidence (or the lack thereof). It is for a completely separate study to debate the truth value of religious convictions—and this has indeed been done in an expansive collection of literature—and it is a study which will not be undertaken here. Suffice to say that I claim the most rational view when it comes to the truth value of religious beliefs is the agnostic’s view. Religious beliefs ultimately have
their genesis in the minds of individuals and have no intersubjective verifiability. Faith is quite literally the absence of empirical facts. There is no way in which others can experimentally replicate what they claim to be miracles—to do so wouldn’t make them what they claim them to be—or to verify another individual’s revelatory experiences.

With these ideas in mind, I go forward without providing a concrete position either in favor of or in complete rejection of the truth value of religious beliefs. I, therefore, circumscribe a conception of the universe to exclude any acknowledgement of the ontological existence of supernatural entities. In the absence of these, I argue that the most rational conception of the world is a purely physical conception. If physicalism is asserted to the exclusion of everything nonphysical, then the truth value of several of the metaphysical theories covered throughout the previous chapters lose their currency. Plato’s theory of the Forms would have to be denied as well as a Judeo-Christian conception of the universe and elements of Confucian, Taoist, and Hindu metaphysics. The soteriological models of resurrection
in apocalyptic Judaism, salvation in Christianity, and certain conceptions of enlightenment in Hinduism would be invalid. The pantheon of deities that fall under the umbrella of these religious traditions would have no empirical truth value as well. Samsara, the cycle of death and rebirth, could still be defended in purely physical terms—it is possible to defend the rebirth of consciousness using a panpsychic account\textsuperscript{131} of the universe—however, assertions of karmic debt following individuals throughout their lifetimes becomes tenuous.

This isn’t to say that elements of the theological conceptions could not be salvaged. Indeed, many of the ethical doctrines coming from these traditions could still be supported as ways to promote human flourishing and the proliferation of a continued human civilization. However, these ethical doctrines do not necessarily fall within the purview of metaphysical cosmologies; murder can be decried as harmful with or without the existence of a

\textsuperscript{131} Panpsychism is the doctrine that mental properties exist in all physical properties. This idea evolved as a way to make sense of the existence of consciousness in beings which display it, especially in beings which do not appear to have consciousness at one point in their development only to display it later (such as humans from zygote to adult).
supernatural creator figure. While components of these religious traditions can be salvaged, they are only those components which can transcend a purely theological conception of the universe and survive within a physicalist conception. Within a purely physical universe, the referents of divine or supernatural terms are concepts in the minds of humans as opposed to figures existing independently from the minds of believers.

Since most theological conceptions of the universe exclude a purely physical conception—and are mutually exclusive among one another—and there is no evidence for the reality of supernatural assertions, I will move forward with a purely physical conception of the universe in mind. The next task is to sketch out a conception of humans within this physical cosmology. Since a physical cosmology is asserted, it is necessary that humans are dispossessed of any supernatural traits. This precludes conceptions of a human soul disparate from the physical vessel or dualist conceptions presupposing a separation of mind and body. This further degrades Judeo-Christian conceptions of human nature and discredits Cartesian
theories of the mind and Platonic conceptions of the soul’s supernatural qualities and genesis in the realm of the Forms.

What can be asserted and defended are Aristotelian and Kantian conceptions of humans as rational agents capable of analyzing sensible data, abstraction, and rationalization. The four causes can be salvaged to a certain degree although it is an open question whether humans have an absolute teleological end towards which they must strive (more on this will be discussed in the section analyzing the goals of humanity in general). Humans have a will—or at least perceive that they do—and act intentionally towards specific ends and goals or out of particular desires. A human being is a hybrid of inherited genetic material and instincts, biological functions and processes, and is affected by his or her natural and social environments. Humans, distinct from nonhuman animals, have the internal structure and capacity to learn and develop languages and communicate with one another to tackle problems and

\[132\] The morass behind whether humans actually have free will or live in a deterministic universe is something which I will not cover in this study. All questions concerning the relationship between human desires and action, and what this means for conceptions of morality, are not within the purview of this study.
relate needs, desires, and feelings. Humans feel pleasure and pain and generally act in ways that increase pleasure and mitigate pain. They likewise give praise to those qualities and actions which elicit pleasure and condemn as vicious or evil those qualities and actions which elicit pain and unease.

In order to better survive, humans come together in societies to escape the harsh realities of living in separation from others. By working together, humans are better able to create secure communities, shelter, and provide for basic needs. It is also obvious that the majority of humans require social interaction in order to sustain their mental and emotional health. Humans generally—with some exceptions—do not live in isolation from others. Aside from providing for their biological needs and drives, humans desire to produce nonessential products such as art, music, games, and literature. Many humans further desire to pass on their knowledge and wisdom to future generations in addition to having an instinctual desire to create future generations. The evidence for all of these assertions can be observed in the existence of familial and civic institutions as well as the
abundance of organizations dedicated to the arts, sports, film, literature, and so forth.

It is important to not over generalize. Many humans do not share all of these nonessential characteristics. One group of humans may desire to engage in athletic competitions whereas others find them either distasteful or a waste of otherwise precious time. Some humans enjoy writing and publishing their ideas for posterity whereas drafting even a few pages can be likened to tooth extraction for others. As Marx points out, what some humans feel is a result of culture and social environment which humans in other situations do not experience. An individual living in a society which heavily espouses a communitarian, group mentality will think and act differently relative to a human who is raised in a culture that lauds individualistic, lone-wolf mentalities; this distinction can be immediately seen when comparing an American to a Chinese or Japanese citizen (of course it should also be noted that there are variances within these cultures as well).

Humans also create for themselves moral codes, social mores, and ethical systems which they feel
compelled to abide by. In a purely physical universe, the foundation of these ethical systems cannot be ascribed to a pantheon of deities or to a single creator. Morality does not derive its absolute or universal qualities from divine beings. In a purely physical world, it appears as though the genesis of morality can be ascribed entirely to humans. Since physicalism argues that all mental processes can be reduced to physical processes, then all morality emerges as a response to biological processes. This is another way of stating Hume’s moral doctrine that what is deemed virtuous and vicious comes out of what is pleasurable and painful.

These various facets are what comprise human individuals. Humans are complex structures out of which emerge sentience and consciousness. They have biological needs and drives developed, honed, and evolved out of a long, ancestral lineage. These biological processes are the foundation of emotions, feelings, rationality, intention, and even morality.

\[133\] Here I would like to clarify that this does not mean ethical systems cannot subsist in more complex nonhuman animals like primates and dolphins or in alien species. It is quite possible that primates have ethical codes which they can rationally understand to a certain degree and abide by. Unfortunately, primates are unable to communicate this subscription to morality to humans and we have no evidence of complex, sentient extraterrestrials who have systematic ethical codes.
Aside from internal structures, humans are also affected by their environments and exist in a reciprocal relationship with society; humans create their societies and societies, to a degree, mold and shape the humans of which they are composed. In addition to these essential biological functions and drives, humans have nonessential desires and wants which they pursue to varying degrees of success and satisfaction. Any conception of human nature which neglects any one or a number of these characteristics neglects important components that make up a holistic portrait of the prototypical human.

With this synthesized image of humans, it can be seen that several of the facets of the philosophical and theological conceptions of human nature have survived. This conception does not emphatically deny a Sartrean, Kantian, or Marxist conception of human nature. While it favors Aristotle’s conception of human nature, there are Platonic components of human nature which survive. Parts of the ethical systems inherent in the theological conceptions of human nature survive as well; this shouldn’t be too surprising since theology itself is derived from the
human mind. It is possible to move forward with a physical ontology of the universe and a synthesized illustration of a typical human. What is left is a conception of the ideal life for humanity.

This is where I believe a more cohesive tapestry can be sewn. All of the philosophical and theological conceptions of human nature presented entail value judgments that pontificate on what the ideal life for humanity looks like; the problem is that they differ on their conclusions. Plato’s ideal life was using the rational faculty to come to knowledge of the Forms. This goal will be rejected by a physical conception of the universe, however, Plato’s call to harmonize the elements within the human soul still have merit. Using the will to stave off desire allows the individual to cultivate a balanced life. This ideal was also espoused by Aristotle who prescribed the doctrine of the mean; humans should attempt to find a balance in all aspects of their life between the extremes of deficiency and excess. Kant also discussed the conflict between the passions and the will. He argued that it is better for humans to act disinterestedly in accordance with duty and actions have moral value only
if they are done out of this duty and not as a way to further someone’s desires. These three conceptions have practical value. Human appetites are voracious and can be harmful when not kept in check; Hobbes envisioned humans imprisoned within a ceaseless cycle of desires. However, Kant’s strict adherence to the idea that actions are only moral if they are done solely out of duty has its critics. One of the most obvious critiques has already been stated by Hume who said the origin of morality is within the existence of pleasure and pain. As a proto-utilitarian, a Humean conception of morality would claim that people only act virtuously because it elicits pleasurable responses; moral agents have intended consequences in their sights.

Virtues and vices occupy a large pool of various actions, qualities, and deeds and people can be praised for a number of things. All humans share in the indefatigable march towards happiness. This idea of happiness as the end goal of all human action occupies an important part in Aristotle’s conception of human flourishing as well as a Sartrean and Marxist conception of human desire. Sartreans desire to find
meaning in their life and it can be assumed that being successful in this endeavor causes happiness. For Marx, humans desire to be productive and to reap the fruits of their labor; alienation from one another and from the fruits of one’s labor causes sorrow and discomfort. Through cultivating the virtues, being praised for being virtuous, being productive, and by finding meaning in one’s life, humans strive along disparate avenues towards one summit: happiness. Much of this happiness is found in social interactions as well. Aristotle emphasized the cultivation of civic virtues and Marx’s prescription for human nature was to come together in society and share the means of production in common.

This is the synthesized conception of human nature that I propose. Humans live within a physical universe; because supernatural terms have no empirically verifiable referent, they are ontologically meaningless separate from human imagination. Humans are an aggregate of biological and instinctual desires and drives, emotions, mental processes, and feelings developed and evolved over thousands of years and through the lineage of multiple
species. Furthermore, all of these mental and emotional properties can be reduced to and explained in physical terms. All human desires and actions work towards the promotion of pleasure, the elimination of pain, and happiness. Meeting both essential and nonessential needs and desires—including desires for sustenance, security, production, and self-worth—leads to this sense of happiness.

There is nothing *prima facie* about this conception of human nature which is antithetical to the research, development, and implementation of HETs. If the ideal end of human life is human flourishing, then the logical question to ask is: Do HETs lead to human flourishing? There are obviously different conceptions of what type of thing human flourishing is. I concur that there are very serious issues in reconciling the implementation of HETs with an Aristotelian virtue ethic, one of the main issues being encapsulated by the “Accomplishment Argument.” If human action is enhanced or otherwise augmented by technology, then it seems proper to ascribe the accomplishments to the technology rather than to the human individual. In *Nicomachean Ethics*, Aristotle is
concerned with the virtuous person acting at the right
time, in the right way, and for the right reasons.\footnote{134}
In virtue ethics, the character of a person is as
important as the actions of that person. Consider a
scenario where someone sees someone getting mugged,
overcomes any fears of incurring personal injury, and
steps in to assist. The virtuous actor stops the
mugging and apprehends the assailant. It can be argued
that action was courageous because the person stepped
in at the right time—he didn’t attempt to assist after
the victim got mugged—in the right way—the person
overcame his or her fear to assist—and for the right
reasons—the virtuous actor did not expect any monetary
reward in return. This would be the argument if the
person were unenhanced. However, when considering the
Accomplishment Argument, the action does not have as
much merit. The reason for this has nothing to do with
it being at the wrong time or for the wrong reasons,
but rather, the person did it in the wrong way.
Calling a person courageous assumes that someone
overcame his or her own fear. This is why the
agoraphobe who goes to the market and the soldier who
rushes into battle can both be called courageous: they

\footnote{134} Aristotle \textit{Nicomachean Ethics II} Part 7.
are both overcoming their own fears. However, the enhanced individual is given capacities that can give them increased strength, endurance, and cognition over and above the unenhanced. A human who saves a fly by crushing a spider isn’t called courageous because there was no fear involved in the same way that fear is involved in the previous examples.

However, this is a mistaken way to consider virtues. Posthumans should be considered in a different category than humans. This isn’t to argue that posthumans are necessarily a different species than humans—in the same way that males and females are not in a different species—but are in a different class of capacities. One who makes this argument would effectively be arguing that enhanced humans are less virtuous than unenhanced humans because of their enhancements. A better way to look at this argument would be to consider an argument made earlier by Aristotle. Consider two humans. One human is an agoraphobe and another is not. Society would argue that the agoraphobic person is courageous for going to the market and would not laud the person who is not agoraphobic for doing the same thing. There are,
therefore, different thresholds for being courageous depending upon the individual in question. Along these lines, I argue that there should be a different threshold entirely for the posthuman, perhaps raised above the usual threshold of an unenhanced human.

What I call “posthuman virtues” would thus comprise an altered set of virtues for the posthuman individual dependent on what enhancements that individual has. An individual diagnosed with ADHD would be praised as diligent if he or she kept continued focus and attention even if that focus was below the threshold for a “normal” individual. Whereas a normal individual might be expected to keep attention on a particular task for a shorter number of hours, an individual with ADHD would not be expected to keep that length of attention. For example, suppose someone with ADHD would be considered diligent for paying attention for one hour whereas a normal person would be praised for paying attention for three or more hours. Now consider an enhanced human who has metabolized cognitive enhancements designed to focus and strengthen attention spans. We would reasonably expect him to pay attention for a longer period of
time. This is not to say that the posthuman is unable to exhibit virtues. Rather, the thresholds for which actions are considered virtuous are merely raised; they follow the pattern of being relative to the varied circumstances of the actors.

With this synthesized conception of human nature in mind I will now move on to answering the remaining two questions that are the focuses of this study: 2) do specific types of HETs, on average, promote human flourishing and 3) what does a just distribution of HETs look like in human society? It will be the aim of Chapter V to analyze and provide an answer for the second question and the aim of Chapter VI to do the same for the third and final question.
The intention of Part I was to imagine a holistic conception of human nature nested within a physical universe that reflected empirical observation. The intention of Part II is to use this conception moving forward to imagine ways in which HETs can benefit or harm humankind and to propose a framework for a just distribution of HETs that can be adopted and realized by social policies. This part will answer the remaining two questions posed in the introduction: 2) do specific types of HETs, on average, promote human flourishing and 3) what does a just distribution of HETs look like in human society?

Chapter V will focus on the utility of HETs, ascertaining whether these technologies are to the overall social benefit of humankind or would be more likely to contribute to its social ills. To this effect, Chapter V will be divided into three main sections looking at three classes of HETs. The first section will look at prosthetic enhancements which are enhancement technologies that alter, add to, or supplement the physical constitutions of humans. Examples of these kinds of enhancements would include bionic arms and powered exoskeletons. The second section
will look at cognitive enhancements which focus on increasing cognition, intelligence, and attention using pharmaceutical vectors. The third section will focus on individual and social benefits of genetic engineering and will consider arguments against genetic engineering, decrying the practice as unethical.

Chapter VI will propose a theory of a just distribution of these enhancements and will be broken up into two sections. The first section will consider the idea of moral rights and implications for healthcare and enhancements. This section will focus on the distinction between therapy and enhancements and what this means for a moral right to receiving HETs. The second section will propose a conception of the just distribution of these technologies which could be adopted and implemented by social policy. This section will assume a utilitarian justification for distribution and will create a conception of distribution which maximizes the collective benefit of society while minimizing potential harms.
CHAPTER V

UTILITY OF HUMAN ENHANCEMENT TECHNOLOGIES

The intention of this chapter is to imagine the actual effects the implementation of human enhancement technologies would have on humans singularly and united as a collective constitution. Analyzing HETs in this way will allow for developing a partial conception of the overall consequences—both negative and positive—of their implementation. The purpose of this utilitarian calculus will be to ascertain whether HETs, on the whole, are a benefit or a detriment to humankind.

Of course, in order to construct such a calculus it is necessary to understand how humans can be harmed or benefitted; prudentially, this was a major focus in considering conceptions of human nature. To summarize here, humans are primarily affected physically—if everything can be materially reduced—however the ways in which humans are
affected can be broken down into more specific subcategories. Humans can be physically affected when coming into contact with external objects; this interaction can lead to either pleasurable or painful responses. Humans can be mentally and emotionally affected negatively through stress and anxiety, or positively through achieving goals and receiving positive reinforcement and approbation from others. Keeping these broad ways in which humans can be affected in mind—and there is much more minutiae detailing specific ways in which humans can be affected physically and psychologically—it will thus become possible to envision whether HETs benefit or harm humans individually or collectively. HETs are beneficial when: 1) they increase pleasurable feelings or mitigate painful ones 2) they allow humans to accomplish goals individually or collectively which would otherwise be incredibly difficult or impossible to accomplish and 3) the implementation of particular HETs accomplish the first two aims without prevailing negative side effects and tend towards the long term, overall benefit for society. HETs are harmful if they tend towards the opposite of these three aims. It is important that HETs meet all three aims, but the third aim is arguably the most important. Suppose a megalomaniacal individual is outfitted with military grade human enhancements that increase his or
her physical attributes, giving him or her superhuman physical prowess, genius level intelligence, and unparalleled tactical strategy. While doing so may stimulate pleasurable feelings in the individual and may lead to achieving his or her own personal goals, it is possible that giving such an individual these enhancements may not be of general benefit to society.

It is obvious that this chapter has a utilitarian bent. The reason for this is that HETs are purely tools without inherent moral value. Even if societies were to adopt a deontological or virtue ethic, the discussion of HETs would still need to be framed in light of how they are either supportive or detrimental to these ethical systems. In this sense, a utilitarian discussion would still need to take place in order to understand how and whether HETs should be used to stimulate or physically alter moral agents. An attempt at this discussion began in Part I in terms of discussing HETs and their place in the moral theories of various philosophers, theological traditions, and scientists. The focus of this chapter will not be on how HETs support or undermine the visions of these individuals, but whether HETs support or undermine the holistic conception of human nature constructed in the
final section of the preceding chapter and of humankind communally.

Before moving forward, it is important to distinguish the difference between procedures used for medical treatment or therapy and procedures used as enhancements—the lines can be blurred between the two and what are called therapies in some cases may be enhancements and vice versa. There are different definitions and conceptions of what constitute the proper goals of medicine. What I refer to as medical treatment or therapy falls along the lines of what has been called the “hard-line” or “normal function” model of medicine.\textsuperscript{135} In this view, the central focus of healthcare is to “maintain, restore, or compensate for the restricted opportunity and loss of function by disease and disability.”\textsuperscript{136} Medicine, according to this model, ought to restrict its focus to return individuals to their normal baseline of healthy functioning when they fall below it and help them to maintain their health at that baseline. Examples of this would include prescribing antibiotics for infections or recommending multivitamins to ensure continued, healthy nutrition. In considering enhancement


\textsuperscript{136} Ibid.
technologies, this chapter and the subsequent chapter will not be considering technologies which are meant to bring patients back to or maintain a normal baseline functioning. Enhancement technologies are those technologies which allow a healthy human the ability to transcend species-typical functioning to higher levels of functionality.\textsuperscript{137}

The remainder of this chapter will be divided into three sections categorizing different types of human enhancement technologies. The first section will focus on the effects of primarily physical human enhancement technologies with an emphasis on prostheses used for nonmedical purposes. This is to be differentiated from prostheses used for medical purposes such as in the case of

\textsuperscript{137} There is obviously a deep and widespread debate concerning what constitutes species-typical functioning. Humans differ widely in size, shape, and characteristics despite having a near identical genetic structure. In \textit{Enhancing Evolution}, John Harris makes the argument that seemingly mundane treatments (by today's standards) are actually enhancement technologies. He compares spectacles to binoculars in order to illustrate this. Spectacles can be said to repair the normal degradation of visual acuity and could, therefore, be considered a treatment. However, binoculars enhance human vision beyond normal acuity and should be considered an enhancement technology—albeit a nonintrusive one (pp. 20-21). In \textit{Beyond Humanity}, Allen Buchanan also points out the ubiquitous nature of enhancement technologies throughout human history. He includes literacy, numeracy, and computers among a number of different types of enhancements (p. 38). However, let’s return to the example of spectacles. Someone might argue that spectacles restore normal functioning of the eyesight; however, this is not necessarily the case. Is normal functioning supposed to be “normal” for all humans? Does 20/20 constitute normal vision acuity, a baseline for all humans to be considered normal? Or do humans have different baselines? Is the degradation of human organs and capacities normal? Although beyond the scope of this study, it is important to understand that what constitutes “normal” has different manifestations and definitions backed by competing conceptions.
someone losing a limb due to accidental injury or combat. The second section will focus on the effects of cognitive enhancements which alter the abilities of organisms to process and organize information. The focus here is also on enhancements and not therapeutic measures used to correct or repair defects or illnesses. The third section will focus on the ethics of genetic engineering and how they affect individuals, families, and wider communities. The first two types of enhancements are generally envisioned to apply to fully developed, adult humans. In this sense, they are enhancements in the full sense of the word and are not used for therapeutic purposes even though the same technologies could be used in such a way. Genetic engineering is different in that genetic engineers and transhumanists can envision alterations of the human genome in individuals before birth as a way to modify traits in the fetus. Genetic engineering has obvious therapeutic uses as well, but it is also a form of prevention. Modifying the genome to edit out certain unwanted characteristics or traits often edits out traits that will not be manifested in the individual until later in life. Mapping the genome constitutes a form of preventative medicine for some traits that may not manifest at all in the case of recessive
genes. This blurs the line between treatment and enhancement.

At the conclusion of this chapter I will consider the range of benefits and harms caused by these types of HETs. While a concrete calculus that specifically weighs good and bad characteristics and appoints a number value to them is impossible, I intend to show that, on the whole, HETs tend towards promoting the good relative to the holistic conception of human nature and the goals of humanity in society.

**Prosthetic Enhancements**

Prosthetics have traditionally been entrenched firmly in the realm of medical therapies and disability treatments. They are additions or supplements to the body that help restore limbs or digits which have been lost through either disease or accidental injuries. Diabetic individuals develop neuropathy and circulatory issues and need to get artificial limbs—usually of the lower extremities—following amputation. Soldiers embroiled in combat or serving in dangerous regions are at risk of coming into contact with IEDs or other explosive devices which sever their limbs upon detonation, resulting in a need for prosthetics. Both of these cases, and others,
constitute therapeutic uses of prosthetics. These individuals have deviated from species-typical functioning and use prosthetics in order to come back to the baseline. Prosthetic enhancements, as opposed to therapies, are not used to correct injury or disease. Rather, these types of enhancements are used intentionally to alter the human body—not necessarily invasively—to allow humans to physically transcend species-typical functioning.

So what would prosthetic enhancements look like? According to Merriam-Webster, a prosthesis is “an artificial device that replaces a missing or injured part of the body.”\[^{138}\] Related to this definition, a prosthetic enhancement would be an artificial device which is intentionally used to replace a normal functioning limb in order to enhance human traits. Long portrayed in science fiction in the realm of cyborgs and human-machine hybrids, this usage of prosthetic enhancements would have very staunch detractors. I should be clear that I do not count myself among this camp. If autonomous individuals wish to remove their healthy body parts in favor of mechanical limbs, I do not think that those people should be prevented from doing so. If this action fulfills some conception of

individual flourishing and the action does not impinge on the pursuit of anyone else’s flourishing, then I see no immediate ethical dilemma; I do not ascribe to a position which lends any special or "sacred" quality to things that are "natural." Things that are natural are not necessarily agreeable to human flourishing. Many diseases and illnesses are natural, yet they infringe on an individual’s happiness and biological stability. If someone’s natural organs fail, then they should be allowed to pursue the implantation of synthetic organs that work. Likewise, if someone’s natural limbs and organs do not accomplish the goals that an individual has, then that individual should be allowed to outfit themselves with prostheses which do. However, this position is not tenable in every situation. In an environment of plenty where everyone has unlimited access to resources, then these prosthetic enhancements should be made available to anyone who desires them. However, in environments with scarce resources, these enhancements should be allocated based on a framework which increases the net happiness of all individuals in a given society.\textsuperscript{139}

Aside from the issue of scarcity, there are very real negative health consequences of invasive techniques which aim to outfit individuals with prostheses—whether they need

\textsuperscript{139} I discuss this more in Chapter VI.
them or not. An individual’s body is most accepting of its own constituents. This is to say that a human body would be least likely to reject receiving blood transfusions of its own previously donated blood or receiving organ transplants if those organs were cloned from the original body. Transplant rejection is a very serious potential consequence and to intentionally remove a healthy functioning limb constitutes a very serious potential risk. Instead, the development of prosthetic enhancements should be reframed to focus on more noninvasive measures before more invasive measures are developed and implemented.

Another conception of prosthetic enhancements is in the form of powered exoskeletons which constitute an addition or supplement to the human body as opposed to an invasive restructuring. Powered exoskeletons are mechanical suits which individuals wear over their natural bodies. They are usually outfitted with a conglomeration of pneumatics, motors, and hydraulics which work to give the wearer increased strength, speed, and/or endurance. This has a wide scope of application in both the military and the civilian world. Powered exoskeletons are of special importance to the military and programs led by the Defense Advanced Research Projects Agency (DARPA) have focused on
applications of this technology in combat theaters. Launched in September of 2011, the Warrior Web program aims to produce a lightweight undersuit that reduces injuries and fatigue and to improve mission performance. According to former program manager Lt. Col. Joe Hitt, “The number one reason for discharge in the military in recent years is musculoskeletal injury. Warrior Web is specifically being designed to address the key injuries at the ankle, knee, hip, lower back and shoulders.”

If the undersuit is successful, then soldiers will be able to carry heavy loads without being as susceptible to injuries. Soldiers will have more endurance under heavy weight in the field and they will also be able to run faster and for longer periods of time without the corresponding strain on the muscles and joints.

There are other more invasive examples of prosthetic enhancements that do not require the amputation of healthy limbs. In 2002, a microelectrode array was implanted in the median nerve of the left arm of a healthy volunteer. This array allowed the volunteer to transmit neural signals from the organic systems to control external, synthetic devices.

The array detected neural signals associated with muscle contractions and converted those neural signals to movements in the synthetic implements.\textsuperscript{141} This obviously has therapeutic applications to allow amputees the ability to have lifelike artificial limbs, but it can also be used to give wearers finer control over powered exoskeletons. It is easy to imagine implementation of these experiments in the general populace.

Applied towards industrial and economic applications, prosthetic enhancements can have salient positive effects. In occupations requiring heavy lifting over long periods of time, those endowed with powered exoskeletons will be less susceptible to injuries on the job and would be able to work without the need for too many periods of rest. This would exponentially boost productivity and efficiency and would translate to an increase in the production of goods while requiring less individual exertion. This would also potentially result in a reduction of the cost of goods produced. While the most obvious applications of powered exoskeletons would be in environments related to transportation and construction—loading bays and construction sites—they could be implemented to improve

workplace morale and efficiency in any occupation requiring constant endurance, e.g., valets, salesmen, ICU nurses, etc.

While prosthetic enhancements may give users what Buchanan calls “positional goods”—competitive advantages that enhanced individuals have over and above unenhanced individuals—ethicists and social policy makers should also be aware of the “network effects” of human enhancements. Network effects are the effects that a single event has on a wider spatial scope and are also the effects that result from a conglomereration of these smaller single events. Concerning the first conception, Buchanan cites immunization as an example. When people get immunized, they are protecting themselves from diseases. However, when they do so, they are also protecting others from the possibility of contracting the disease from them. This herd immunity constitutes a positive externality. Concerning the second conception, Buchanan discusses the use of cognitive enhancements among a multitude of individuals. When one person gets cognitive enhancements, then their own cognitive powers are increased; they are also generally able to maintain focus for a longer period of time. When multiple cognitively enhanced individuals come together,
they are able to work conjointly in a think tank to be more efficient and produce solutions to problems that would have otherwise taken a longer time to reach.\textsuperscript{142}

These network effects can be applied to prosthetic enhancements as well. If production centers are staffed with physically enhanced individuals, then those production centers will produce more goods with a comparatively lower expenditure of human energy. This will reduce costs incurred by the general society and could potentially allow the workers more time for leisure. When a multitude of enhanced workers network their abilities, they will likewise be able to accomplish complex tasks more easily; they may not have been able to accomplish these tasks individually whether they were enhanced or not. Prosthetic enhancements, besides reducing the proclivity to injury in strenuous professions and thereby reducing medical costs, lead to increased levels of production and a more robust GDP.

It should be noted that these are only potentialities and not eventualities. Enhancements will need to be regulated so as not to give one class of individuals a higher degree of physical superiority over unenhanced

\textsuperscript{142} Allen Buchanan, \textit{Beyond Humanity: The Ethics of Biomedical Enhancement} (Oxford: Oxford University Press, 2011), 48-49.
individuals—more on this in Chapter VI. The focus here is to ascertain whether prosthetic enhancements lead to more benefit over harm. Properly regulated and safely implemented, powered exoskeletons seem to provide more economic benefits for society, financial benefits for the individual consumer, and mitigate pain and injury brought about by overly strenuous activity. Putting the focus on the implementation of powered exoskeletons as opposed to the creation of cyborgs out of healthy humans also has the added benefit of not irreparably altering the natural constitution of humans; there is minimal invasiveness and there is no acute modification.

From this analysis, prosthetic enhancements meet the three requirements of beneficence stated earlier in the chapter. These forms of prosthetic enhancements mitigate pain. They allow individuals to singularly or collectively accomplish tasks which they were unable to before. Finally, they have minimal negative side effects while also promoting the general good of society in the form of increased economic output and reduced energy input. Powered exoskeletons with or without microelectrode arrays, therefore, produce more benefit than they do harm.
Cognitive Enhancements

Assuming a physicalist universe, cognitive enhancements are also a form of physical enhancements. However, their primary site of focus is the brain and the stimulation of neurological activity. Theoretically there are a number of technologies which can be defined as cognitive enhancements—any paraphernalia or procedures which stimulate brain functions can be defined as such—however the most prevalent usage of the term has to do with pharmaceuticals called nootropics or “smart drugs.” Nootropics—a term used interchangeably with cognitive enhancements—are any substances which alter, enhance, or otherwise augment cognitive performance through the inhibition or stimulation of certain neurotransmitters.\(^\text{143}\)

Originally used to treat cognitive disabilities such as Alzheimer’s disease and narcolepsy, nootropics have moved into the realm of recreational use among students, academics, or anyone desiring enhanced cognitive abilities.\(^\text{144}\) As in the case of prostheses, there are both therapeutic and non-therapeutic enhancing uses for


nootropics. Although often packaged in the form of narcotics, nootropics can be any substances—synthetic or organic—which are used to stimulate cognitive functions.

Unlike powered exoskeletons, nootropics are far more invasive in that they affect the chemistry of the brain. This causes serious worries among those who disagree with the widespread or consistent use of nootropics and for good reason. Like any other narcotic or pharmaceutical substance, nootropics can harm people with addictive tendencies by causing them to come to rely on the drugs for normal daily functioning. Although organic nootropics may not cause withdrawal symptoms in users who are no longer able to afford doses of the drugs, narcotic nootropics present this risk. The easy accessibility of nootropics also poses a problem. Medical prescriptions are not needed in order to obtain nootropics and can quickly be ordered from online vendors.\textsuperscript{145} This opens up the possibility for individuals mixing several types of cognitive enhancing substances without the proper pharmaceutical knowledge pertaining to their side effects. The potential problems related with self-medicating and addictive or reliance behaviors present very real risks.

\textsuperscript{145} Talih, 23.
Any interference with brain chemistry also presents risks to cognitive and normal mental functions. Individuals who consume nootropics can present with symptoms of hypomania, psychosis, paranoia, insomnia, anxiety, panic attacks, and a whole host of other negative side effects; these side effects are exacerbated or made more likely in individuals who mix nootropics with other drugs as well.\textsuperscript{146} Nootropics are often catered and marketed to students as a key demographic; this is not strange given the purpose of nootropics and the stresses of an academic environment. Given the easy accessibility and prevalence of legal and illicit drugs among both college and primary school students, there is an increased risk of mixing nootropics with other drugs like marijuana, alcohol, anti-depressants, and stimulants. Statistics report that nearly half of all college students abuse these substances and the numbers are increasing.\textsuperscript{147} Abuse of controlled prescription drugs has exponentially increased from 1993 to 2005. Prescription painkiller abuse has risen 343\% in those years, stimulants like Ritalin and Adderall 93\%, tranquilizers 450\%, and sedatives 225\%. The percentages of frequent binge drinking, daily marijuana use, and the usage of illegal drugs like

\textsuperscript{146} Ibid.
\textsuperscript{147} The National Center on Addiction and Substance Abuse at Columbia University (CASA), Wasting the Best and the Brightest: Substance Abuse at America’s Colleges and Universities (March 2007), i-ii.
cocaine and heroin has increased 16%, 50+% (from 1.9-4.0%), and 52% (from 5.4-8.2%) respectively of surveyed students.\textsuperscript{148} Analyzing national surveys from 1975-2013, a study of adolescent substance abuse from 8\textsuperscript{th} to 12\textsuperscript{th} grade has increased over the past couple of decades\textsuperscript{149} with marijuana usage trending upwards as the result of a decrease in perceived risk and social disapprobation.\textsuperscript{150} Illicit substance abuse of drugs like heroin and cocaine has remained relatively steady and has decreased—along with other street drugs—since the mid- to late-1990s while the use of psychotherapeutic drugs has increased; these increases seem to be the result of a reduction in perceived risk, their use for legitimate purposes, and the increase in direct consumer advertising.\textsuperscript{151}

With a rise in the use and abuse of substances, it is important to understand that the ethics of cognitive enhancements—or of human enhancement technologies in general—cannot be considered in a social vacuum. The immediate, physical risks of cognitive enhancements need to be considered along with statistics in social trends and

\textsuperscript{148} Ibid.
\textsuperscript{150} Ibid., 12.
\textsuperscript{151} Ibid., 6.
medical case reports. There is also the problem with the “Accomplishment Argument” referenced earlier. Recall, the Accomplishment Argument states that the actions of enhanced individuals have less merit compared to unenhanced individuals because their results are partially due to the effects of the drugs they were on. Proponents of this argument liken the use of cognitive enhancements to steroid use and other performance enhancers by athletes and body builders; the athletic achievements are degraded for those individuals because they are not winning “naturally.” Cognitive enhancements render the work done under their tutelage inauthentic, worthless and undignified. In this vein, the use of cognitive enhancements has been compared to cheating and even plagiarism: in the same way plagiarists take credit for the work of others, individuals using cognitive enhancers take credit for accomplishments that are not wholly their own.\(^{152}\) I am not entirely sympathetic to this argument.

Are the athletic or academic accomplishments of individuals taking multivitamins or mineral supplements less valuable than the work done by those who either choose not to take them or can’t afford them? Is the athletic

prowess of individuals who can afford to workout at a well-equipped gym and have the resources to buy organic produce and healthy meals less dignified than the athletic prowess of someone who lives in a lower class neighborhood? Is the work of someone who composes a research paper on a high-end desktop and has access to an extensive, university library less valuable than the work done by someone who composes it on a typewriter with access only to a poorly funded community library? I would not argue that the accomplishments of the individuals in an advanced socio-economic setting are rendered undignified, worthless, or inauthentic. However, I would hold them and their accomplishments to different standards relative to the accomplishments of those in poorer circumstances. This is reminiscent of my argument for holding posthumans to a different standard of virtue relative to unenhanced humans. Society should expect the student with access to a world-class research library to compose a better researched paper than the student who didn’t have access to equally extensive resources. The athlete who has access to better exercise facilities and a healthier diet should be expected to run faster and lift heavier weights comparatively to someone who is malnourished and doesn’t have access to the same standard of facilities. However, I am sympathetic to
the Accomplishment Argument when individuals who are in a better socio-economic status are in competition against those who are not. To have the first athlete compete against the second athlete and then censure the latter for losing does not seem fair, and it does seem as though the victory of the second over the first would be more cause for celebration than the victory of the first over the second. However, to categorically decry the first’s accomplishments as undignified or worthless is also erroneous. Realistically, it would be similar to saying an Olympian’s accomplishments are worthless since he or she has collegiate or primary school equivalents. Instead, the posthuman—like the Olympian—should be held to different standards and, possibly, segregated into competitions among his or her cohorts.

It should be noted that this treatment focuses particularly on accomplishments as they reflect on the individual; making normative claims about cognitive enhancements in this way analyzes them through the lens of virtue ethics. Looking at them in a utilitarian way by postulating their effects on society could potentially produce a more positive view. Similar to the prosthetic enhancements, the cognitive enhancements would have network
effects; indeed, Buchanan considered the network effects of cognitive enhancements as cited previously. A number of cognitively enhanced individuals working together on a board, in a seminar, or in a think tank would be collectively more focused and able to generate more intellectual currency than unenhanced equivalents. People working in crisis management situations would theoretically be able to adapt to problems and craft viable solutions more quickly. Collaborative research would potentially produce more fruitful conclusions and in a shorter amount of time since nootropics would increase both cognition and attention. The practical applications of cognitive enhancements and the potential social benefits elicited are abundant.

What is left to consider is how nootropics stack up against the three requirements for beneficence and it is probably evident that this analysis is more complicated than the one for powered exoskeletons. Given their chemical nature and their effect on complex neurological systems, the use of nootropics can be both beneficial and harmful overall. While nootropics increase cognition and attention, they present with a host of severely negative side effects that are harmful to the healthy functioning of the human
brain. Although users may wish to enhance their cognition, they are at risk of irreparably decreasing their cognitive capacities. If nootropics are synthesized that present with minimal or an absence of negative symptoms, have no addictive qualities, and are successful in increasing cognition and attention then it can be argued that the benefits outweigh the goods. However, this potentiality is not yet a reality and potential users should be wary of the reported side effects. If nootropics are successful, then they also meet the second and third requirements of beneficence. Nootropics have wide ranging, positive social consequences and can be used as a supplement to aid analysts, social policy makers, and crisis managers in addressing life threatening events and social ills. They can also help academics, researchers, and scientists of all stripes by giving them the increased cognitive capacities to conjecture new and progressively more complex hypotheses and give them the increased attentive capacity to carry them through to the end of their own projects. Not only this, but if cognitive enhancements can also trigger increased civic participation, then more people will become involved in the political process and social policies will be more reflective of the wishes of the general public.\textsuperscript{153}

\footnotesize\textsuperscript{153} Will Jefferson, Thomas Douglas, Guy Kahane, and Julian Savulescu,
Again, it should be cautioned that meeting the three requirements of beneficence is a potentiality that can be done by idealized versions of nootropics. As the market inventory stands now, consumers should be wary that not every—and possibly no—proffered nootropic meets these standards. Similar to anything else humans intentionally ingest, users should note that not everyone has identical constitutions and what works for one individual may not be representative of the experiences of another individual; although one user may present the intended effects of nootropics without the negative side effects, another individual may not have the first and have an abundance of the second.

**Genetic Engineering**

Unlike prosthetic and cognitive enhancements, genetic engineering presents a whole host of other ethical problems due to its severely invasive and irreparable nature and due to the fact that some individuals are genetically engineered before they are autonomous persons; this genetic engineering is done prenatally in the absence of the consent of the unborn at the behest of third parties. Like the previous two types of enhancements, genetic engineering

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can be broken down into gene therapies and genetic enhancements. Gene therapies constitute altering the genetic structure of individuals in order to treat or eliminate diseases for patients or for future generations. Genetic enhancements are not associated with the treatment or elimination of diseases. Instead, the focus of genetic engineering for enhancements is to alter individuals to surpass genetically predetermined biological constraints. For example, prenatal genetic enhancements could modify genes associated with the height, intelligence, and eye or hair color of individuals; genetic enhancements of the latter kind constitute merely cosmetic alterations whereas altering any of these have the potential to majorly impact quality of life depending on social circumstances.

There is a blurred line between genetic engineering as therapy and as enhancement. I argue that genetic engineering with either of these aims in mind can be categorized as enhancement. Genetic engineering techniques used to eradicate or mitigate predispositions to diseases are marketed as “therapies.” However, these predispositions to diseases could constitute species-typical functioning; certain species are naturally predisposed to susceptibility to certain diseases whereas other species are not. Being
susceptible to disease—and not having a particular disease—does not constitute a departure from species-typical functioning, it is an embodiment of it. For this reason, I focus on genetic engineering in general with the inclusion of both gene therapies and enhancements.

Genetic engineering is further divided into two procedures: somatic cell gene engineering and germ line gene engineering. Somatic cell gene engineering targets nonreproductive cells and only affects the individuals receiving treatment. Germ line gene engineering—also known as inheritable genetic modification—affects reproductive cells and modifies the genome that individuals can pass on to their offspring. Genetic engineering is further complicated in that its procedures can be conducted using adults or embryos as subjects. Another wrinkle is that direct genetic engineering—as opposed to indirect genetic engineering—can be either gene therapy where normal or

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155 Indirect intervention does not directly affect genes. Examples of indirect interventions would be pharmacogenetics and embryo selection. Pharmacogenetics (sometimes used interchangeably with pharmacogenomics) is the study of analyzing how drugs are metabolized by individuals and creating pharmaceuticals catered to different genetic structures. Embryo selection is the extraction of embryos, analysis of DNA, and implanting embryos which carry desired traits. Both of these procedures have their own host of ethical issues and I will not be focusing on them in this study.
desirable genes are inserted into somatic cells or germ line cells, or gene surgery where undesirable genes are deactivated.\(^ {156}\) Genetic engineering—whether it is an enhancement or a therapy, conducted on adults or fetuses, or affecting somatic cells or gametes—is associated with a slew of theological and ethical issues. Since I am primarily considering human enhancement technologies as they affect the holistic physical conception of human nature synthesized in the previous chapter, I will not analyze theological issues concerning genetic engineering.\(^ {157}\)

I will also not analyze in any detail the technical or health risks associated with genetic engineering. Needless to say—or it should be at least—altering and eliminating genes, or adding genes or parts of genes to existing genes, has genetic consequences. Many of the consequences are unknown and some arguments against germ line gene therapies focus on these potential future consequences.\(^ {158}\) There are serious concerns that altering germ line cells will affect the stability of genetic structures in future generations.

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\(^{157}\) Although I will not give a detailed analysis of theological issues concerning genetic engineering, they mostly hinge on the ideas (treated previously) that genetic engineering constitutes a corruption of human nature and “playing God” on the part of humans.

\(^{158}\) Frankel, 496-497.
or somehow physically manifest in unwanted ways. These are salient, well defended arguments that caution genetic engineers about interfering with the human genome. Somatic cell gene therapies do not present the same future regarding concerns. Indeed, somatic cell gene therapies only affect nonreproductive cells which die off and are replaced by new cells which require subsequent gene therapies throughout an individual’s life; therefore, the cost of gene therapies may be substantial even when the effects are negligible. Another risk associated with somatic cell gene therapy is that it has the potential to affect cell growth and survival, sometimes leading to the induction of cancer—although this risk is higher in untargeted transgene integration.\textsuperscript{159}

Aside from the present and future health risks of genetic engineering, there are corresponding social risks. Genetic testing and embryo selection allows for the analysis of DNA to ascertain whether certain individuals have or are predisposed towards certain inheritable diseases. Embryo selection gives potential parents the opportunity to choose which embryos they would like to implant and which they would like to discard; parents who

genetically test fetuses and discover they are infected with severely crippling diseases can opt for therapeutic abortion. Genetic therapies are essentially ways in which individuals can eradicate or mitigate disabling diseases. As a result of these practices, disability rights activists have decried genetic engineering as a form of eugenics. During the 1980s and 1990s there were two developments: 1) the emergence of disability rights promoting social inclusion services for the disabled and 2) advances in prenatal genetic screening allowing parents to choose what kind of children they want by discarding those they deem unfit.¹⁶⁰ These developments are at odds with one another because the culture of prenatal genetic screening and therapeutic abortion makes a distinction and erects a barrier between the healthy and the unhealthy or the normal and the abnormal where the disabled are seen occupying the latter dichotomies. The fear is that discrimination of the presently disabled will increase as disabling features are edited out of future generations; the underlying discriminatory message is that the lives of the disabled are not worth living. This also presents a problem concerning distributive justice between the “haves” and the

“have nots.”¹⁶¹ Those who have the financial resources and insurance for genetic screening will be able to ensure that the children they bring into existence do not have preventable, inherited diseases. Meanwhile, those families without similar financial resources will be subjected to nature’s lottery and could end up with children with severe genetic disorders. The cost in money and time could plunge these families further into a poorer socio-economic status.

All of these concerns are very real and well taken. I agree that genetic engineering further deepens the divide between the disabled and the nondisabled and social policy should ensure that the currently disabled are taken care of and are reasonably given the same opportunities as everyone else. However, just because the disabled should not be discriminated against, does not justify the existence of these diseases. If genetic engineers and clinicians are able to edit out these crippling diseases with minimal risk—notwithstanding potential future risks—then they are justified in doing so on the basis that they are focused on ushering in a brighter future. I am not arguing here that a disabled person cannot live a life of fulfillment compared to those of the nondisabled—indeed, I think many disabled

¹⁶¹ More on this topic will be visited in Chapter VI concerning devising a just distribution of human enhancement technologies in general.
individuals live more fruitful lives than some nondisabled and are given a unique perspective—however, many inheritable diseases have severely negative symptoms that do undermine overall quality of life and present hardship on the families and friends who care for the disabled. Any unique perspectives on life given by the existence of the disabled does not seem to override or balance out the physical, financial, and emotional suffering of those involved or of society in general. There is a retort that losing unique perspectives given by individuals who suffer from physical and cognitive diseases will rob society of a diverse landscape in the arts. I agree that this conjecture is a complete possibility and that certain things would be lost if certain diseases are completely eradicated. My response to that retort is to ask if the joy generated from those unique perspectives balances out the pain suffered by those individuals afflicted with the diseases. Does the pleasure gained from a universally lauded composition or painting from a small number of individuals afflicted with disease outweigh the suffering imposed on everyone who is afflicted with that same disease? This is more of an empirical question and I leave it open for others to debate. Regardless, I do not advocate discrimination against the currently disabled, but neither do I promote
abandoning genetic engineering in favor of allowing the future existence of the disabled.

I also argue that genetic “enhancements” focused on cosmetic changes in individuals is a waste of resources and a frivolous enterprise in an environment of scarcity. While genetically enhancing the intelligence and physical prowess of individuals has the same positive and negative potential as prosthetic and cognitive enhancements, changing things like eye, skin, or hair color has no concrete physical benefits; the benefits here are entirely social and I would argue that it would be better if society relaxed its stringent requirements for what constitutes beauty. Obviously changing these attributes may increase the quality of life for individuals living in a society where certain traits are prized and seen as more attractive than others. However, the potential resources that would go into cosmetic enhancements induced genetically are better spent elsewhere. Aside from this—when considering conflicts between individuals and other forces—cosmetic enhancements are only effective for individuals in relation to other individuals and society whereas enhancements aimed at enhancing strength and intelligence can be used in more
types of conflicts—e.g., individuals versus the environment.

One final point to consider is the debate concerning prenatal genetic engineering. Some argue that parents have a duty to ensure that their children are equipped to live the best life that they can live. If parents can change the genes of their children to be predisposed to live better lives, then they are obligated to do so. Most agree that parents should be given free reign over constructing environmental conditions for their children that set them up for good health and socio-economic success; parents should influence and control their children’s decisions by promoting exercise, a healthy diet, and keeping them away from harmful narcotics and crime. Why shouldn’t parents be allowed the same liberty to do what they will with the genetic conditions of their children? The debate hinges on the difference in nature between environmental and genetic modifications. Whereas genetic modifications alter the “essential” characteristics of individuals, environmental modifications alter the accidental characteristics. Aside from this argument about altering essential natures and creating different persons, there is a question of autonomy.

162 Buchanan 2000, 156.
163 Ibid., 160.
or preference. While children are not assumed to have full autonomy, they do exercise some control over their lives and are able to communicate preferences; embryos, on the other hand, have no autonomy or an ability to communicate preferences. Parents can alter the environmental conditions of their children and older children are able to communicate their satisfaction or dissatisfaction with these alterations. Embryos and fetuses cannot rebel against the genetic alterations imposed on them by their parents.

What is left to consider now is how genetic engineering fares with the requirements for beneficence. Genetic engineering, broadly considered, presents a vast array of ethical concerns and there is a wide variety of procedures and technologies which fall under the umbrella of the term; my treatment here has not come close to doing the topic justice. However, some general assumptions of genetic engineering can still be made and compared to the requirements for beneficence. In terms of promoting pleasurable feelings and mitigating painful ones, the judgment is unclear. There are a host of actual and potential health risks associated with both somatic and germ line gene therapies. Somatic cell gene therapies, properly developed, pose a lesser amount of potential or
unknowable health risks relative to germ line gene therapies; however, somatic cell therapies can also be short lived and are not as successful at eradicating inheritable diseases.

Whether genetic engineering meets the goals of individuals is also a contentious subject. If the individuals are the presently disabled, then genetic engineering can potentially turn public opinion against the disabled as symbols of an unhealthy and unwanted subclass of human beings. If the individuals are not disabled, then genetic engineering promises an impending future with the absence of inheritable genetic diseases and the sorrows associated with them. Genetic engineering also meets the goals of parents who wish the best life for their children.

I think the best possible world would be one where society respects the rights of the disabled and recognizes them as competent individuals who can lead full lives despite—not because of—their disabilities while also promoting the use of genetic engineering to eradicate the future presence of inheritable genetic diseases.

Finally, it has already been said that there are serious potential side effects with genetic engineering. Since many of these future side effects are currently
unknown, it is quantifiably impossible to attempt an analysis of the balance between benefit and harm. If genetic engineers can iron out the negative side effects presenting in somatic gene therapies and can guarantee that severe future side effects will not cripple the future human race, then I think that genetic engineering meets this requirement. At this point in time, however, this does not appear to be the case. The social benefits are manifold. If a holistic conception of human nature has health and human flourishing as its goal, then the eradication of inheritable diseases seems to fit in quite nicely. Again, however, this needs to be done without socially, politically, or personally discriminating against the presently disabled.

**Concluding Remarks**

Having considered prosthetic enhancements, cognitive enhancements, and genetic engineering, it is the final task of this chapter to ascertain whether human enhancement technologies tend towards the benefit of humankind or not. The foregoing chapter has assumed that there are no intrinsic ethical grounds for condemning human enhancement technologies, instead opting for a utilitarian calculus of harms and benefits relative to a holistic physical
conception of human nature. Each type of HETs showcased presents varying levels of harms and benefits broadly as a class and particularly concerning specific procedures and technologies belonging to those classes. Although focused primarily on the consequences of genetic engineering—beyond merely a medicinal focus—I would like to cite Heta Hayry who made a distinction between pessimism and optimism and opted for moderate optimism.

Human enhancement technologies present with a number of advantages including increased cognitive function and attention, enhanced strength and endurance, and the ability to edit out inheritable diseases. Biotechnologies in general have these medicinal uses and can be used instrumentally in agricultural practices to create pesticide resistant crops and cows which produce more milk.\textsuperscript{164} They are also able to mitigate or eradicate environmental issues; for example, bacteria can be genetically engineered to neutralize toxic chemicals and industrial waste.\textsuperscript{165} However, there are also disadvantages, many of which have already been enumerated above. Aside from the disadvantages to HETs in particular such as


\textsuperscript{165} Ibid., 39.
economic inequities, social injustices, and actual health risks associated with them, biotechnologies have a plethora of other negative consequences. GMO crops are potentially less nutritious than their organic counterparts and can potentially contribute to increasing cancer rates due to the volume of chemicals used in their production and maintenance. Altered organisms introduced into nature could also pose unforeseen negative consequences by interfering in the natural cycle of life in biotic communities.\(^{166}\) There is obviously cause for concern and analysis in the field of biotechnologies.

Another distinction Hayry raises has to do with “technological imperatives” which are associated with internal laws and logic of created technologies. Two major views arise out of this distinction: technological volunteerism and technological determinism. According to technological volunteerism, there are no binding imperatives dictated to humans by technological processes; the development and implementation of technologies can always be controlled and directed by humans. Technological determinism, on the other hand, says that development does have its own internal laws and logic which cannot be

\(^{166}\) Ibid.
“checked by human choices or human action.” According to this view, all dangerous or morally offensive technologies will ultimately be implemented. Technological volunteerism obviously has a more optimistic view of human agency and the ability of humans to successfully predict consequences and act to mitigate negative ones. Technological determinism has a far more pessimistic view, arguing that humans do not have much control over the constant forward march in developing new technologies regardless of their effects; human can, so they do. Hayry argues—and I agree with him—that both have some truth in them and they can both be seen in the historical development and utilization of technologies. Humans have created some terrible things from torture devices and poison gas to nuclear armaments. However—so far—humans have subsequently recognized the dangers these technologies pose and have gone to great lengths to regulate them and, in some cases, eradicate them. This historical evidence allows for a moderately optimistic view of human intention and of the controllability of human enhancement technologies.

With this moderately optimistic perspective in mind, I would argue that all human enhancement technologies—indeed, all technologies, practices, and policies in general—should

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167 Ibid., 41.
be judged on their individual merits. While cocaine should probably not be used as a stimulant, it is relatively safe to use multivitamins and perhaps even some organic nootropics. While cutting off a healthy arm and replacing it with a bionic arm may prove too extreme and unethical, powered exoskeletons do not pose the same problems. While germ line cell therapies have unknown and potentially dramatic consequences precluding their unrestrained use, somatic cell therapies are relatively safer and the consequences are more easily predicted, controlled, and restricted to the individual. Constructing an argument for or against human enhancements on the basis of perceived positive and negative consequences of HETs as a whole is negligent. Doing so potentially ignores the merits of certain types of technologies by focusing on the negative ones. It is ethically more responsible and conducive towards the benefit of humankind if human enhancement technologies are considered on a case by case basis. If the technology in question poses minimal harms, promotes physical goods, aids in the accomplishment of individual and social goals, and does not lead to increased socio-economic disparities, then the technology should be implemented; if it does the opposite of those things then it should be abandoned or reconstructed so that it does
lead to those aims. That being said, a position of moderate optimism should be adopted given the fact that there are indeed many individual and social goods that will be promoted by the implementation of human enhancement technologies.
CHAPTER VI

CONCEIVING A JUST DISTRIBUTION OF HETs

Having constructed a holistic, physical conception of human nature and considered the merits of certain human enhancement technologies relative to this conception, what remains is a proposal for the just distribution of those human enhancement technologies deemed safe for use and beneficial for social goals. Which individuals get human enhancements and for what reasons are the two main concerns of this chapter. Do individuals have a right to human enhancement technologies like some claim a right to healthcare? How can social and health policies adjudicate between who should get human enhancement technologies and who shouldn’t? Should the development, implementation, and outfitting of human enhancements technologies stay within the realm of medicine and healthcare or should they be commandeered by private corporations and marketed to those who can afford them? These are all questions connected to
issues of justice in healthcare, in social policy, and in economics and resource distribution.

In order to answer these questions, I have divided this chapter into two main sections answering two questions: 1) do individuals have a right to human enhancement technologies in the same way they can be said to have a right to healthcare? 2) What constitutes a just distribution of human enhancements technologies given the holistic, physical conception of human nature and the beneficence goals of human enhancement technologies? The first section will focus primarily on what a right to medical procedures means and whether individuals have a similar right to human enhancement technologies; here I will revisit the distinction between therapy and enhancement. The second section will focus on a just distribution of human enhancement technologies given the answer to the first question and considering the argument nested in a society with predominantly utilitarian aims.

**A Right to Human Enhancement Technologies?**

Broadly speaking, there are two different types of rights that humans can be said to have: 1) legal or institutional rights and 2) moral or human rights. Legal and institutional rights are those rights conferred on
individuals by virtue of those individuals being members of the socio-political system or institution granting the rights. Moral rights are those rights considered to be held prior to and independently of legal or institutional rights.\textsuperscript{168} Used interchangeably with the term “human rights,” moral rights are considered as a kind of ideal and conscientious right. Feinberg defines these types of rights as follows:

(2) An \textit{ideal right} is not necessarily an actual right of any kind, but is rather what ought to be a positive (institutional or conventional) right, and would be so in a better or ideal legal system or conventional code. (3) A \textit{conscientious right} is a claim the recognition of which as valid is called for, not (necessarily) by actual or ideal rules or conventions, but rather by the principles of an enlightened individual conscience. [italics in original]\textsuperscript{169}

Moral or human rights are those rights that rationally informed individuals would choose for themselves and would be supported by institutional or legal rights in an ideal world. Furthermore, human rights are usually considered to be equally shared by a common class. The class of individuals having and being able to claim rights is usually relegated to the class of moral agents—individuals who are capable of making autonomous decisions and treating others morally. These rights are distributed equally because humans—or persons depending on the framework—share

\textsuperscript{169} Ibid., 84-85.
the characteristic of having human worth. While human individuals are distinct from one another in their merits, they are equal in terms of inherent human worth.\textsuperscript{170}

Depending on the rights theory in question, humans are entitled to varying types of moral rights ranging from positive rights to some goods or services, to negative rights guaranteeing possessors of rights freedom from outside interference. Examples of the former can include a right to education or a right to basic necessities needed for survival. Examples of negative rights include a right not to be unjustly incarcerated or otherwise have one’s freedom constricted without justification. Arguments claiming rights to basic healthcare services usually take the form of subsistence rights where humans have a “right to the physical necessities of biological survival.”\textsuperscript{171}

The positive right to healthcare argument has taken a number of different forms. One form is to argue that it is a deductive right rather than an empirical right. Bernard Williams argues this point when he says, “Leaving aside preventive medicine, the proper ground of distribution of medical care is ill health: this is a necessary truth.” The necessity of this assertion was never grounded in further

\textsuperscript{170} Ibid., 89.
\textsuperscript{171} Taylor, 235.
normative principles and was taken as a given. Another position proposed by Alain Enthoven supports a “decent minimum” standard which avoids appeals to healthcare rights as necessary truths. The decent minimum standard states that a just and humane society will provide its members with a minimum standard of healthcare across the board. This standard of healthcare should be “cost-worthy,” meaning that it equates marginal benefits with marginal costs of individuals with average incomes. Any deficiency in meeting that baseline standard is morally unacceptable. Epstein points out that this egalitarian principle is used to support rights to social minimums for food, education, clothing, and shelter as well.

Obviously the actual realization of these goals is subject to potential real world logistical problems. Societies in a relatively impoverished socio-economic position compared to wealthier neighbors may be met with scarcity issues so that they are not able to meet these decent minimum standards to the same effect as the latter. There are also issues with citizens finding ways to cheat the system out of self-interest and taking advantage of

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173 Ibid., 29.
174 Ibid., 30.
more resources than they need; this effectively increases the scarcity problem.

There are many difficulties in providing for socially accepted rights to healthcare or rights to subsistence and security and only a few issues have been presented here. There are also arguments for and against the defensibility of rights as a concept which can hinge on a variety of factors including whether the inherent worth of humans merely has its foundations in stronger human interests or is somehow an ontological reality. Given the physicalist conception of human nature taken, I argue that the idea of human or moral rights is a misconception of collective wants and needs. Wants and needs can be empirically observed. Humans want subsistence, they want to survive, and they want security and shelter. However, there is no guarantee that humans will obtain these goods and there is no reason why humans should assume that they have a moral right to these goods based on inherent worth. Ideations of human rights are concerned primarily with those things which rational persons would believe are necessary to their continued biological and autonomous functioning. A right implies that this functioning ought to continue, but why is this the case? In a purely physical universe where
everything is reduced to the material, there is no ought beyond the conception of the human mind and perhaps the minds of some nonhuman animals or, potentially, rational extraterrestrials. Indeed, the cessation of the functioning of some humans could empirically promote the goods of other human and nonhuman individuals and species populations. To say that humans have a right to something implies that they ought to receive the resources or treatment associated with that right, but there is really nothing beyond human valuing which supports this claim. These are important arguments to consider because the existence of human enhancement technologies raises the question of whether humans have a right to HETs in the same way they have a right to healthcare resources. Some argue that there is suffering involved on the part of individuals who could stand to benefit from human enhancement technologies; short children and adults with intellectual deficits could be improved through interventions and so they should be funded through insurance.\textsuperscript{175} Many of the arguments supporting funding for cosmetic surgeries are similar. Individuals complain about not meeting social standards of beauty and that they are suffering due to poor body image. As a result, they assert that they have a right to cosmetic

\textsuperscript{175} Buchanan 2000, 112.
enhancement surgery because it will improve their overall quality of life. I agree with Buchanan that an individual like this should reorient his or her belief system and values so as not to be totally dependent on social constructions of beauty. A Sartrean conception of bad faith can be appealed to here as well. The individual—Buchanan calls him the “Plain Hero”\textsuperscript{176}—is defining himself according to his physical appearance and he is comparing it to social constructions of beauty. He is engaging in bad faith because he is not finding meaning for himself. However, if an individual has a conception of what their good is and still finds himself or herself wanting—whether cosmetically or in terms of his or her capacities and traits—then he or she will still seek enhancement technologies. The person who considers himself or herself ugly will want cosmetic enhancements. Athletes who consider themselves physically deficient will want to increase their performance. Academics who find their intellectual capacity ineffectual relative to their peers will desire intellectual enhancements.

Regardless of the cogency of rights theories, the idea that people have a moral right to enhancement technologies is untenable and indefensible when considering the therapy-\textsuperscript{176} Ibid., 113.
enhancement dichotomy. It is untenable due to the scarcity of resources; the idea of providing for the minimum subsistence of individuals across society is far more defensible than providing human enhancement technologies to everyone. If the resources existed to enhance everyone—keeping in mind that the focus now is on human enhancement technologies that promote social goods and individual goals—then I would be supportive of providing the populace with them. However, a minimum subsistence level for everyone should be met before human enhancement technologies are introduced more widely. Therapy should take precedence over enhancement. The general happiness and a decent standard of health in society should be the primary goals of healthcare before enhancements are considered for widespread distribution. Although therapy should take precedence over enhancement, this does not mean that enhancement technologies should not be developed and implemented at all. While humans as a species should not be considered to have any right to enhancement technologies, this is not to say that these technologies should not be used to increase the general happiness of individuals and the efficiency and production of economies. Until the resources exist to provide HETs to everyone, there are ways that they can be used towards these ends.
A Utilitarian Distribution of Human Enhancement Technologies

What constitutes a defensible distribution of HETs considering the scarcity of resources and the empirical fact that many individuals subsist below a decent minimum of care standard? One of the most salient problems to contend with is the widening gap between the rich and the poor. A socio-economic divide already exists between individuals. If human enhancement technologies become available to market consumers, then a biological divide can emerge as well. People who can afford genetic engineering and genetic screening can ensure that their families and progeny are not inflicted with inheritable diseases while the families of those who are not as well off could potentially be ridden with disease. This will have far reaching consequences as well. The poorer families will have potentially weaker children who will not be able to compete with healthier individuals who are also financially stable.

This ethically problematic potentiality has been considered by Buchanan in constructing what he calls a “morality of inclusion.” Crucial to this theory is the notion of a cooperative framework. Societies are composed
of varying degrees and numbers of institutions and agencies which work together to meet social and individual needs and goals. As cooperative frameworks become more fundamental and pervasive in society, individuals who are unable to participate in them are increasingly removed from the benefits of society. Buchanan argues that the most basic cooperative framework in the United States is the idea of a competitive market. If individuals do not have the financial resources necessary to participate, then they are socially castigated, rendered to a status of dependency, and can be seen in some ways as inferior. A moral theory of inclusion is needed to mitigate these harms. A successful theory of inclusion provides answers to at least three questions:

Which beings qualify as members of the primary moral community? Under what condition are participants in a cooperative framework obligated to include individuals who can participate effectively? And to what extent is there an obligation to ensure that the nature of society’s most fundamental framework for cooperation renders it more rather than less inclusive? 

Creating social policy solutions that increase levels of inclusion rather than further excluding participants in society constitutes a successful practical application of the theory.

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177 Ibid., 259-260.
178 Ibid., 260.
Genetic engineering is a form of eugenics which excludes certain individuals as a necessary part of its inherent structure; genetic engineering aims to eradicate individuals with serious genetic diseases and, as such, these individuals are excluded from the preferred ends. Arguments against genetic engineering focus on the idea that the practice will increase forms of genetic discrimination in insurance policies and in the workplace. Knowing that individuals have inheritable diseases which present with long-term symptoms raises the cost of healthcare for those individuals and correlative raises health insurance costs. Insurance companies have an interest in offering incentives to families to undergo genetic screening in order to ensure that future individuals do not have inheritable diseases. A similar argument can be made in the workplace. If candidates for job positions can prove to their employers that they do not have severe illnesses—which would render them ineffectual at work compared to healthier individuals or require more sick time—then employers have an incentive to hire them over individuals who do have them.

Genetic engineering and other enhancement technologies give enhanced individuals what are called “positional

\footnote{Ibid., 262.}
goods” relative to other individuals. A positional good is a good which enhances one’s status—socio-economic, biological, etc.—over the status of other individuals. I do not defend human enhancement technologies on the basis of positional goods (as I hope I’ve made clear throughout this study). HETs are defensible on the basis of the utilitarian goods they bring to benefit society and promote the goals of individuals. The goals of individuals should be promoted to bring pleasure to the individual and also to increase the net happiness of society. Individual goals should not be promoted over and above the goals of other individuals, especially if the goals of one negate or deny the realization of the goals of many.

Instituting a just distribution of human enhancement technologies should keep these arguments in mind and should be careful not to promote positional goods or widen the gap between the rich and the poor. Although making them widely available to all individuals to promote the collective good would be optimal, this appears to be an untenable goal due to scarcity. Therefore, HETs should be distributed to projects that maximize the collective good without being too costly a burden. Some HETs should also be prioritized

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over others. Germ line gene therapies and enhancements have long-term positive consequences. Powered exoskeletons require long-term maintenance and need to be catered to fit individuals. The effects of nootropics also wane over time and multiple doses need to be taken multiple times. If the consequences of germ line gene therapies can be properly controlled and regulated—an ideal I don’t know is possible—then these therapies and enhancements should be given priority over other types of enhancements. However, like the eradication of polio and smallpox, genetic engineering would need to be applied across the board in order to edit out inheritable diseases and would, likewise, be more costly than other forms of enhancements.

However, due to the unknown nature of germ line genetic engineering currently, the safer option would be to focus on the synthesis of nootropics—ones which do not present with side effects that overwhelm the benefits—and the construction of powered exoskeletons which can be commissioned for projects that benefit society as a whole. There are a number of policy models which could be constructed depending on overall social values and the intricacies of these models are not something that I intend to consider here. Due to the scarcity of resources and the
disparities between socio-economic classes, a model which favors social goods over individual goods and distributes enhancement technologies disinterestedly seems to be the best model.

There is also a question of who chooses what enhancements are for the good of society? In answer to this question, I would argue that social policy analysts and legislators should work together to cultivate a conception of a most agreed upon definition of flourishing for a particular society. Enhancements should be distributed to increase the overall pleasure of a society and which enhancements are chosen will depend on which society they are being distributed throughout. If a particular society prizes intellectual prowess and the generation of scholarship as a supreme good, then analysts and legislators should keep this ideal in mind when choosing which enhancements are preferable and will most likely choose enhancements which increase intellectual capacities. The model distributor would be one who synthesizes the desires and needs of every individual in a particular society into some idealized prototypical citizen. The enhancements which that prototypical citizen desired would
be those enhancements the model distributor would distribute throughout the populace.

**Concluding Remarks**

Human enhancement technologies have the potential to incur widespread and long-term positive social and individual benefits. They have desirable qualities due to these benefits and self-interested individuals could use them as positional goods to give themselves socio-economic and biological statuses over and above their peers. This does not constitute an equitable distribution. The ideal distribution, in a world of plenty, would be to make these technologies available to all individuals across the globe with little to no cost to themselves.

However, this is not how the world works. Resources have cost values whether those costs are financial or temporal and someone or some organization will have to foot the bill. When considering a just distribution, these environmental factors need to be taken into account. There are many ways to consider a just distribution of resources. The one taken here has been primarily concerned with utilitarian values and increasing the net happiness of individuals in society. Human enhancement technologies should, in line with a utilitarian ethic, be applied to
projects which meet this goal. The distribution of powered exoskeletons can be prioritized to projects which have social goods in mind; for example, the federal government can make them available to construction projects focused on creating and maintaining infrastructure. Nootropics can be given to individuals involved in nationally or internationally funded and orchestrated think tanks dedicated to solving the environmental and social problems of humanity. When disaster events strike—such as in the case of tornados, typhoons, and floods—socially funded crisis management teams can be given nootropics to increase their cognition and focus in order to meet the problems head on in a timely manner. In times of war, the availability of these technologies can make defense a priority. In times of peace, the prioritization can be shifted to other goals like the ones mentioned above or can be applied in the arts and humanities; musical compositions, literary pieces, and plays can be drafted by those whose focus and attention are stimulated.

While people may not have a right to enhancement technologies over and above an imagined right to medicine and healthcare with therapeutic purposes, this does not mean that enhancement technologies should not be developed
and distributed. This would be like saying that the development of any other technologies which do not have a therapeutic purpose should be suspended in favor of diverting resources to healthcare. Consequentially, the development of cell phones, mp3 players, televisions, Blu-ray players, and many other devices would be suspended. Instead, in a universe of scarcity, HETs should be distributed primarily with social goals in mind. If new resources present themselves or the current use of resources could be reallocated in a certain way to allow for a surplus, then the ideal would be to distribute them universally and perhaps even commercially if no one was excluded.
CONCLUSION

Human enhancement technologies have the potential to promote the goods of individuals and of society as a whole. In an ideal world, certain enhancement technologies would be made available to anyone who wanted them and they would pose little to no health risks. In an ideal world, genetic engineering would lead to the complete eradication of inheritable diseases and perhaps even reduce susceptibility and vulnerability to communicable diseases. People would have the freedom and autonomy to be able to decide for themselves how they wanted to live and adopt value systems and lifestyles reflective of these personal conceptions of human flourishing. If enhancement technologies helped individuals to realize these goals, then autonomous individuals would be able to take advantage of these technologies.

Unfortunately, humans live in a world marred by scarcity of resources and socio-economic divisions within and between nations. Humans are generally self-interested and act in ways which benefit personal goals, sometimes to the detriment of others. Enhancement technologies also carry with them potential risks that would be detrimental to individual and social goods. Because humans live in this
reality, human enhancement technologies need to be carefully developed and corrected until they present with minimal health risks. If this is not possible or the risks of the technologies is unknown, then they should either be abandoned or—if humans desire the ends which these technologies realize—they should be refined until the risks are negligible. Since there is a scarcity of resources, these technologies should be distributed in a way which maximizes human flourishing collectively.

Like any other advancement in human society, the progress of enhancement technologies should be controlled and closely observed. The technologies themselves are neutral, but the ends to which they are used to further can be either extremely beneficial or horrifically harmful. Those who promote the development of these technologies and implement them should ensure that these technologies are used for ends associated with the former. Social policies and laws should be instituted which restrict and prevent the usage of technologies in a harmful way.


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