CHAPTER 4

Radical Human Enhancement and Ethics: Questions We Must Ask

GOOD ETHICS: SEEING THE COMPLICATIONS

Throughout the textbook, we will ask ethical questions about human enhancement. It may seem that human enhancement ethics is about one thing only—whether or not to choose particular enhancements. But many more serious questions loom. Should we proceed with radical human enhancement research? Who should design the enhancements? Who profits from these technologies? How are they marketed? Who has access? How might these technologies change our collective way of being? Each enhancement needs to be explored, and ethical responses may vary enhancement to enhancement. One may, for example, support radical cognitive enhancement but not superlongevity.

Ethics is about more than believing something is right or wrong. Ethics also goes beyond feeling strongly about an issue. Passion is important to motivate and engage us, but passion alone is inadequate for sound ethical analyses. We need to step back from our feelings and understand the origin of our opinions. We need to obtain good information, engage diverse perspectives, and analyze an issue in light of ethical theory and stated values. Good ethics requires passion and reason. Good ethics is complicated. In this chapter, we give you some of the tools to do good ethics.

Perspective and Community

As Professor Trothen tells her classes, by the end of an ethics course students should have more questions and, perhaps, have less easy clarity on issues. Exposure to differing views and experiences of classmates and of various scholarly analyses complicates things, but in a healthy way. By engaging diverse perspectives, questions arise that may not have occurred otherwise.

Perspective is essential to good ethical analysis. Perhaps you have heard of the parable of the blind men and elephant, an ancient and widely circulated...
story from the karmic religions. Each blind man touches the elephant in a
different place (e.g., tusk, leg, trunk, stomach), and then each man describes
the elephant—inaccurately—based on their limited, subjective experience. You
can effectively illustrate this in your own classroom or home. Cover all parts of
a chair with sticky notes, and then count the notes, while standing at different
angles to, and distances from, the chair. Good ethics depends on understanding
we are perspectival and addressing how we know what we know, a philosophy
subfield called epistemology.

We must do ethics in community if we are to overcome a limited view of an
issue. Good ethics is done consultatively, constantly asking what voices are
missing and why. We all are contextualized, and understanding various contexts
helps broaden perspective on an issue. Contexts, as we will see, include religious
and spiritual beliefs.

Self-awareness and Values

Good ethics requires self-awareness. Consider the influences on your values. Values are those things that are most important to us, such as achievement, success, family, friends, relationships, health, caring, social justice, pleasure, and adventure. Values, beliefs, and opinions are influenced by the “sources of authority” in our lives, such as family of origin, media (including social media), research, education, law, political leaders, faith communities, history, personal experiences, and what some call intuition, inner spirit, or gut sense. Our values can change over time and through different contexts as we meet people, gain insights, and accumulate varied experiences. Sources of authority shape and reshape our values throughout our lives.

Here is a short exercise that helps uncover the role of values in our lives. What are your top five values? Do not overthink the question. As a prompt, consider what would you like written in your obituary. That might sound a bit macabre, but the question can help distill what is most important to you. We are told what we should desire by the news media, social media, livestreaming, movies, political leaders, and even families and friends. Sometimes it can be difficult to get to the bottom of what we really desire and value.

Perhaps modern conveniences and technologies are high on your top five list of values. Technology itself is value laden. Well respected European philosophers have shown that technology promotes values of efficiency and utility.¹ A dishwasher cleaning our pots and pans, quietly and quickly, adds to our desire to acquire more technologies that get things done easily and efficiently for us. Much of what we are “supposed” to desire is shaped by consumerism in a capitalist context. People line up overnight for the newest

¹Michel Foucault, Technologies of the Self (Boston: University of Massachusetts Press, 1988); Jürgen Habermas, Knowledge and Human Interest (Boston: Beacon Press, 1971); and Herbert Marcuse, One Dimensional Man: Studies in the Ideology of Advanced Industrial Society (Boston: Beacon Press, 1964).
iPhone, even if they do not really need it and even if it will not make their lives better. Getting to what it is that we truly want is an important part of doing ethics well, but it is not an easy matter.

Ask someone else to do the same exercise, and compare your values. Consider why you might share some values and why other values may differ. Do you always choose and act in ways aligned with your top five values? Make a record of your answers, and later in the textbook we will ask you to think about your values and how they might relate to enhancement options and possibilities.

*Self-reflexivity*

In the service of good ethical analysis, self-awareness leads to self-reflexivity, described well in the following quote. Self-reflexivity is

> the process of reflecting on one’s own story from multiple diverging standpoints in ways that try to take into account one’s own experience of privilege and disadvantage within intersecting social systems like sexism, racism, heterosexism, and religious forms of oppression.”

These systemic power patterns affect what we experience in the world and teach us what we can expect. Sadly, not everyone is treated equally, and we are not all valued as worthy. An intersectional ethic prioritizes and brings together justice concerns, emphasizing the moral relevance of systemic privileges and barriers, as expressed in this description:

> The further [one is] from the norm, the greater the marginalization. This marginalization, however, is not simply additive, but rather social categories of gender, race, class, and other forms of difference interact with and shape one another within interconnected systems of oppression. These systems of oppression—sexism, racism, colonialism, classism, ableism, nativism, and ageism—work within social institutions such as education, work, religion, and the family ... to structure our experiences and relationships in such a way that we participate in reproducing dominance and subordination without even realizing it.”

In this textbook we aim to stimulate thinking about how these systemic power imbalances may affect the evaluation of radical human enhancements and biohacking processes. Hopefully, many questions will begin to arise. For example, how might one’s views about the elderly be impacted by promotion of anti-aging technologies? What difference does it make if AI algorithms are

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2 Carrie Doehring, *The Practice of Pastoral Care – A Postmodern Approach* (Louisville, KY: Westminster/John Knox Press, revised and expanded edition, 2015), 191.

3 Kim, Grace Ji-Sun; and Susan M. Shaw, “Intersectional Theology: A Prophetic Call for Change,” *Huffington Post* (March 31, 2017). [http://www.huffingtonpost.com/entry/intersectional-theology-a-prophetic-call-forchange_us_58dd823de4b0fa4c09598794](http://www.huffingtonpost.com/entry/intersectional-theology-a-prophetic-call-forchange_us_58dd823de4b0fa4c09598794). The term intersectionality was coined in 1989 by Columbia and UCLA professor Kimberlé Crenshaw.
programmed mainly by white appearing\textsuperscript{4} men? Our hope is that you will consider how systems of oppression may be morally relevant to the intersection of religion and radical human enhancement.

**Theories of Ethics**

To recap, good ethics requires passion and reason, community consultation, self-awareness, and self-reflexivity. Now, we place the ethical project in the context of some leading theories of ethics. Drawing on values, principles, potential consequences, and virtue, these theories provide systematic bases from which to better understand moral and ethical issues and to help us with ethical decision-making. While the two words are sometimes used interchangeably, morals are about our personal character and beliefs about right and wrong, and ethics addresses the accepted rules, actions, and behaviors in a community or group.

Of the numerous ethical theories, we consider three commonly agreed upon core theories: deontological, teleological, and virtue ethics. Two of these theories—deontological and teleological—are decisionist, i.e., focused on how we make decisions in response to ethical questions. Decisionist models ask, “What shall I do?” Virtue ethics theories have a different focus in that they emphasize who we are as individuals and what values we hold. Virtue ethics has us ask, “What character should I possess as a person?” Our character, according to virtue ethics, drives conscientious behavior. We now look more closely at the three theories. In this textbook we pay most attention to virtue ethics and often ask if these technologies will make us better people and the world a better place.

**Deontological**

“Principlist ethics” is a term sometimes used for deontological ethics. This approach is a normative ethical theory that says that moral behavior should be based mainly on principles. Examples of principles are beneficence (duty to do good), non-maleficence (duty to do no harm), respect for autonomy (includes respect for individual choice and dignity), justice, veracity (truth-telling), fidelity, and self-care. Principles are derived from those virtues and values that we see as being most important. Principles are codes of behavior. Prima facie principles are those principles that are understood as most obvious and universally applicable.

Deontological theories hold principles as the most important guides for decision-making. Most ethicists understand principles as binding but not absolute, meaning that the principles must almost always be followed, except when they come into conflict with each other. For example, in cases where we cannot absolutely follow two prima facie principles, we might try to follow

\textsuperscript{4}To say “white” carries with it the faulty assumption that all people who appear white are of one normative racial background.
both to a degree. To illustrate, if someone’s leg is gangrenous and the only treatment to save their life is the amputation of their leg, then the harm of cutting their leg off would likely be judged less severe than the harm of allowing them to die. Following the principle of totality, the duty to do good by saving a life outweighs the harm done by removing a leg.

The religions uphold principles that provide a moral compass or a way to live and behave, based on values of the religion. A key principle in Christianity, for example, is the instruction to love one’s neighbor as oneself. This duty to do unto others as we would have others do unto us is known as the “golden rule.” Religions are concerned with principles, such as the golden rule, the potential consequences of our behaviors, and with being a good or virtuous person.

To illustrate how deontological ethics can be applied to religion, one could hold the theological principle that human bodies are God’s temple and, as such, the body should not be changed in any way that cannot be clearly understood as protecting and preserving the embodied person. This theological position could also be related to the principle that we should respect autonomy, which includes each person’s dignity. So, this theological conviction (i.e., principle) that bodies are God’s temple could have implications for a variety of ethical decisions regarding human enhancement technology.

**Teleological**

Teleological theories emphasize the importance of possible and anticipated consequences in ethical decision-making. “Telos” is a Greek word meaning “end” or “goal.” Teleological or consequentialist theories are usually thought to include situationalism and utilitarianism.

Situationalism holds that all moral decisions are particular to the specific situation; there are no overriding norms. Each situation must be understood apart from preconceived conclusions or rules. However, even situationalists usually acknowledge the one overarching rule that love must be maximized.5

Utilitarian theories are also teleological. These theories look to maximize the greatest good for the greatest number. Utilitarians see actions as morally right or wrong depending on the effects of those actions. Utilitarians agree that the overall aim in evaluating actions should be to create the best results possible, but they differ about how to do that. Some utilitarians, who are called act utilitarians, focus on the effects of individual actions and take a case-by-case approach that evaluates the effects of specific actions in specific cases. Other utilitarians, called rule utilitarians, focus on general rules as generally causing certain effects. For example, rule utilitarians might justify limited funding of superlongevity medicines on the basis that these medicines would generally minimize age-related suffering and reduce the health care costs incurred by aging, but would likely prioritize access to basic needs sustaining the majority

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5See Joseph Fletcher, *Situation Ethics: The New Morality* (Louisville, KY: Westminster John Knox Press, 1966/1997).
of people if a choice needed to be made between basic needs and superlongevity interventions. An act utilitarian would assess the use of resources to extend life on a case-by-case basis, depending on the likely effects of extending someone’s life. For instance, an act utilitarian might judge that a person who is making dramatic contributions to science and politics should receive expensive life-extending technologies, because their ongoing work will benefit a great number of people.\footnote{James Rachels, \textit{Elements of Moral Philosophy}, 4th ed. (Boston: McGraw-Hill, 2003), 96-121.} As with other consequentialists, both act and rule utilitarians are most concerned with the effects of choices and actions.

Hedonism is an example of another teleological theory. Hedonism is interested in maximizing pleasure. In short, whatever results in the most pleasure for any person or group is warranted, without regard for other potential consequences.

Critics of utilitarianism, such as liberation theologians, argue that good outcomes for the greatest number can neglect people at the margins who are socially less powerful and often invisible. Also, the assumption that the many are more important than the few conflicts with religious principles that uphold the incomparable value of each life.

Although limited, a utilitarian approach could be helpful, for example, in deciding who got a respirator or dedicated nursing care during the 2020–21 worldwide COVID-19 health crisis, in hospitals that had too limited a supply of equipment or healthcare professionals. When there is only one respirator and two lives are at stake, who gets the respirator? If a decision is not made, and there are no alternatives, such as jury rigging a stop-gap machine or borrowing from another hospital, both people may die. A utilitarian ethics approach may have us consider such factors as who would likely live longer if they survive the virus. On the other hand, as a critique, if numerous similar decisions are made on the basis of who might live longer, the world may lose most of its elders and the experience and possible wisdom elders bring. Or, people with disabilities may die disproportionately, reflecting and amplifying a devaluing of people with disabilities. At the same time, a utilitarian approach can help us to identify relevant factors in rationing situations where difficult choices need to be made. For example, a utilitarian approach would consider the relative likelihood of survival of patients who need a scarce respirator, prioritizing those most likely to survive.

Most of the time, ethicists consider both principles and possible consequences, but some ethicists emphasize principles and others emphasize consequences. In other words, a hybrid approach is common. A virtue ethics approach, discussed below, may also influence how ethical issues are evaluated.

\textit{Virtue Ethics}

Virtue ethics asks not what should I do (based on principles or consequences) but what sort of person should I be. Highlighting character, the key question is, “What would the most virtuous person we can think of do in a similar
situation?” For Christians, this person might be Jesus. For Buddhists, the virtuous person could be the Buddha. Some people think beyond the iconic “founders” of religions to great saints or other figures, such as Mother Theresa, Mahatma Gandhi, Nelson Mandela, or even Oprah Winfrey and Michelle Obama. Others think of someone more personal, though not necessarily famous, who has made a big impact on their life. Virtues are qualities we deem to be morally good or desirable in people and might include prudence, self-control, generosity, and kindness.

Our values inform the virtues we think of as desirable. As discussed earlier, values are about personal and subjective beliefs, attitudes, and ideals that influence our everyday living. Values are internal for each person and are likely to change over time, more than principles, which tend to be constant and universal. Things most important to us often become embedded in our character as virtues and inform how we behave in various situations (at least we hope so!).

An ethic of care is an example of a virtue ethics theory promoted by many feminists. What would be the most caring way to be in a given situation, is the ethic of care question. For example, if someone thinks they would be successful if they could think more quickly, perhaps it would be caring to provide them with cognitive enhancement that speeds up their thought processes. But maybe it would be more caring to assist this person in exploring why they think they would be more successful with cognitive enhancement. Maybe they have not weighed carefully the possible benefits and harms. A more caring response might be to consider possible implications for all affected by this decision. A feminist ethic of care considers these contextual and relational factors before deciding on a course of action.

A significant challenge faced by virtue ethics theorists is the need to recognize that a response one person judges virtuous may not be the best or most virtuous response for others. Community, including faith communities, and accountability are necessary to all ethics theories, perhaps especially to virtue ethics. The question of what makes us better people is complex. As we get more and more technological options for changing ourselves, we need to ask what makes us truly better, very deliberately and in community.

Weaving the Theories Together

Many good resources are available for exploring these and other ethics theories in detail. For our purpose in assessing radical human enhancements, it is important to know that while principles, consequences, and virtue are all important in good ethical reasoning, none alone is usually sufficient. Our study, thus far, hopefully will prompt additional questions and attention to various

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7For example, J. Parks and V. Wike, “Theories and Values in Bioethics,” in *Bioethics in a Changing World*, eds. J. Parks and V. Wike (Upper Saddle River, NJ: Prentice Hall, Pearson Education, 2010).
moral principles as we address various human enhancements. For example, we will advocate for the principle of co-design, that is, engaging diverse input into the development of technology, so that many perspectives and needs are addressed. In this textbook we are interested in how the commitments and beliefs of religions might affect how ethical issues associated with enhancement technology are evaluated.

Importantly, these different approaches to ethical reasoning are not strictly aligned with either theologically liberal or conservative positions. Those who adopt more liberal theologies, giving attention to social justice, could very well be most concerned with the potential consequences of ethical decisions. But, the more liberal theologian might also choose a strong principlist approach, emphasizing the duties of justice, co-design, doing good, avoiding harm, and/or respecting autonomy. Finally, they may take an approach more in keeping with a virtue ethic, emphasizing the importance of good character on a collective level.

Similarly, most people of a conservative theological persuasion would likely emphasize principles over consequences, with the principles understood as rules stemming from guidance in their sacred scriptures or revered traditions. However, some conservatives may be virtue ethicists (although they may not use that term), attempting to emulate the Buddha or Jesus. Extreme conservatives, i.e., fundamentalists, are likely to be strongly informed by a literal interpretation of scripture as a source of authority.

We encourage you to remember these theories as you read about ethical issues in each chapter. Consider how we are paying attention to potential consequences, principles, and questions of character.

**Three Ways of Defining the Issue**

How an issue is defined shapes the moral discourse that follows. The ethical issues surrounding radical human enhancement that intersect with religion tend to be defined in three main ways, as an issue primarily about (1) what it means to make us better individually, (2) morphological freedom of choice, i.e., freedom to make choices about modifying our own bodies, and (3) justice, including social marginalization, resource allocation, and access to relevant technologies.

**The Therapy—Enhancement Continuum: What It Means to Make Us Better**

A common approach to the ethics of radical human enhancement is to frame the issue in terms of where the enhancing technology might fall along a continuum with therapy at one end and enhancement at the other end. Therapeutic interventions are those interventions that bring us to or keep us at normal functioning; enhancement takes us beyond whatever we currently think of as normal human functioning. A simplistic view is that therapy is acceptable, and enhancement is unacceptable. But, of course, once we begin asking good
questions, things get complicated, because some therapies may be unacceptable for various reasons (e.g., risky side effects or because they are contrary to a religious conviction) and some enhancements may be acceptable (e.g., for our purposes in the textbook, because they are consistent with religious belief). Also, it is not always clear if a particular intervention is a therapy or an enhancement. In fact, it may be both, depending on how one views it.

If an intervention is seen as therapeutic, it is, all other things being equal (an important qualification), ethically permissible, and possibly even ethically mandatory. For example, a pacemaker needed to regulate someone’s heart rate is a therapeutic technology in that it helps keep the person alive. However, a pacemaker is arguably also an enhancing medical intervention in that it prolongs life and improves quality of life.

Earlier in this chapter, we discussed the COVID-19 ventilator, which in one sense is a human enhancement technology in that a machine is providing someone with life extension. Both pacemakers and ventilators, however, have come to be seen as normal and acceptable over time. No one usually questions the ethics of using pacemakers and ventilators, but more radical interventions are questioned, as we shall see. These two examples illustrate the therapy end of the continuum and introduce us to the in-between zone of the continuum in which some technologies are both therapeutic and enhancing.

Some technologies that fall in the in-between zone on the therapy—enhancement continuum may be seen as ethically permissible but not ethically mandatory. For example, consider laser therapy that improves vision to slightly better than 20-20. Other enhancement interventions are further toward the enhancement side of the continuum and are seen as more questionable in terms of their value and ability to make people better overall. An example is the use of the pharmaceutical modafinil (e.g., Provigil) to improve cognitive functioning in someone who does not have a medical condition impairing their cognition. Another example of an intervention that is far along the continuum as an enhancement is the covert use of anabolic steroids by competitive athletes. Anabolic steroids pose many health risks, are not medically justified, and are used to make one “better” (enhanced) by increasing muscle strength and bulk.

While this distinction between therapy and enhancement is helpful, we are seeing that it can be very complicated. The definition of normal human functioning is debated and so are questions about what is just below or just above normal. Perhaps eyeglasses are therapy; perhaps they are enhancement. Is 20-20 vision normal and, if so, for whom? Major League Baseball (MLB) players average better than 20-20 vision. Their normal, then, is different from the general population. So, is it therapy or enhancement for MLB players to have laser eye surgery that brings their vision up to the average for MLB players? For the general population, since vision normally begins deteriorating by age 50, are eyeglasses and laser surgery, both of which bring 20/20 vision, enhancement or therapy?

Examples abound. A nursing home resident uses a wheelchair to locomote about the grounds. A wheelchair could be designed to move her twice as fast as she could walk normally. That would be enhancement, as opposed to therapy.
Perhaps it is morally unacceptable to take her beyond what would be normal. Or, maybe increasing her mobility would allow expression of her humanness more fully. We are reminded of an interesting book title, *Rebuilt: How Becoming Part Computer Made Me More Human.*

Most ethicists agree a grey zone exists between interventions that are clearly therapeutic and those that are clearly enhancing. Interventions falling in this in-between space have been variously called restorative, preventive, or non-therapy. In the future, when AI-fueled technologies and other radical therapies become normalized, it will be important to continue asking the question of where on the continuum should we locate a once-radical, now normal intervention.

Most enhancements addressed in this textbook are radical, clearly taking bodies and minds beyond what is generally—and currently—considered normal. Transhumanists, however, usually push back from the long perspective of evolution, arguing it is normal for humans to use technology to extend physical, cognitive, and emotional capacities. Humans have been improving themselves since cavepeople figured how to use a twig to manipulate food into their mouths. Much more recently, our grandparents used adding machines to more quickly and accurately manipulate numbers. Surely, adding machines enhanced cognitive capacity. Today, almost everyone uses computers to extend cognitive capacities in memory, information processing, and communication. These are normal evolutionary advances, says the transhumanist. Perhaps it is actually abnormal to halt the process of improving ourselves.

Religion clarifies, and perhaps complicates, the therapy—enhancement continuum. Medical therapies traditionally are applied to bring one’s health to a normal range. Religion, generally, may go further in the sense of promoting a more holistic well-being by supporting healing and the lessening of unnecessary suffering. Buddhists believe suffering is reduced by releasing one’s attachment to the self and letting go of craving. While suffering, in Hinduism, is understood broadly in terms of the unfolding of the law of karma, the religion also teaches compassion and the value of relieving unnecessary suffering. Daoism advocates practices that nurture health and long life. Christians look to stories of Jesus’ healings. In Judaism, the preservation of life (Hebrew, *Pikuach nefesh*) is the highest mitzvah.

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8 Michael Chorost, *Rebuilt: How Becoming Part Computer Made Me More Human* (New York: Houghton Mifflin, 2005).
9 See, for example, Rob Beamish, *Steroids: A New Look at Performance-Enhancing Drugs* (Santa Barbara, CA: Praeger, 2011), 63.
10 Preventative interventions are those designed to retain a “normal” state. See Ronald Green, *Babies By Design: The Ethics of Genetic Choice* (New Haven, CT: Yale University Press, 2007), 60.
11 Andy Miah, “Towards the Transhuman Athlete: Therapy, Non-Therapy and Enhancement,” *Sport in Society* 13, no. 2 (2010): 221–33.
The concept of normal is related to the question of what it means to be human, and religion speaks to this question. As the typical dividing point between acceptable therapies and unacceptable enhancements, the concept of normal is seen in particular ways when a religious lens is applied. In an unjust world, the meaning of normal and whose normal is accepted (and promoted) is contentious. Religions can help us to consider ontological questions (e.g., questions about being and existence), including what it is that we value about being human and what it is that we might change or improve. It may be that some radical enhancements that clearly fall in the enhancement end of the continuum are desirable or at least congruent with the values and principles of some religions. A secular understanding of normal is not necessarily the dividing point, from a religious perspective, between interventions that are considered acceptable therapies and interventions that are considered unacceptable enhancements.

One of your authors sees the dividing point between an acceptable and unacceptable enhancement, from a Christian perspective, as being at the point that enhancement technologies cause us to cease being divine image-bearers... [since Christian doctrine says that humans are created in the imago Dei, i.e., image of God.] An intersectional and relational interpretation of the imago Dei suggests that this dividing point comes when we cease to value the interdependence of life, and refuse our creaturely responsibilities to use our creative abilities ... to enhance relationships and particularly the well-being of the marginalized.12

Beyond Christianity, other religions also understand the just care of all life as very important and congruent with their beliefs. The interdependence of life and the safeguarding of life are criteria that contribute to an understanding of the dividing point between morally acceptable and unacceptable technological interventions for the religions.

History shows that new medical interventions, initially seen as shocking or even repugnant, often become accepted, desired, and viewed as normal. Assumptions about normal often say more about the context of one’s interpretation than about what is really normal for diverse people. If the acceptable-unacceptable division on the therapy—enhancement continuum is equated with whatever is acceptable and congruent with a religion’s values and theology, then a meaningful project is to determine how emerging enhancement technologies fit—or disrupt—religious claims. Disruption is sometimes needed to foster new engagement between theology and technology. Overall, the dividing point between acceptable and unacceptable technology, for the religions, is not the fraught concept of normal. The dividing point between acceptable and unacceptable technology is the point at which the use or design of a technology no longer holds religious integrity; the dividing point is that point at which an intervention violates religious beliefs.

12 Tracy J. Trothen, “Moral Bioenhancement Through An Intersectional Theo-Ethical Lens: Refocusing on Divine Image-Bearing and Interdependence,” Religions 8, no. 5 (2017): 7. https://doi.org/10.3390/rel8050084.
Choice

A second way of defining the issue is to see radical human enhancement as primarily about freedom of individual choice and, more generally, human agency. Agency is the capacity to make choices and to act on them. Most transhumanists believe that enhancements should be accessible to all, but not forced on anyone. In our own words, here is what we hear ardent transhumanists saying: “If you don’t want to use these technologies, that is certainly your choice, but do not prohibit me from freely taking advantage of means that might give me health and happiness for 500 years.”

Choice is not that simple, however. The extent of one’s agency depends on social attitudes and structures, such as race, gender, religion, sexuality, age, and socio-economic class. Agency must be bound together with justice. For example, a person who cannot financially afford genetic modification technologies has a greatly reduced capacity to choose one of these enhancements.

Extreme Individualism

An extreme individualistic ideology insists we should get to make our own choices concerning our bodies regardless of any other factors. People have the right to choose an enhancement, no matter how radical. Medically assisted death is a choice, under certain conditions, in 28 countries.¹³ The legal freedom to make so many big choices, as individuals, reflects context. In North America, choice and extreme individualism are highly valued. However, making these choices is not as simple as it may seem. Asian culture, which produced the karmic religions, is more balanced on this point, giving more emphasis to community.

Individualism is deeply ingrained in normative Western culture. We do not like feeling dependent on others. We want to believe we can rely on ourselves, alone. Yet, just about everything we do and attain, engages others in some way. Consider one’s daily meals and the many people having a role in supplying that food. A simple loaf of bread on the table depends upon farmers, truck drivers, store owners, store employees, and many others. So, seemingly simple choices involve others, and good ethics asks how those choices impact others.

Relational Autonomy: The Interconnection of Life

Religions have much to say about the interconnection of all life. What we choose and what we do affects many other people and the environment. Few things underscored the reality of interdependence more than the 2020–21 COVID-19 pandemic. Partly because of our global interconnectedness, the

¹³ E.g., Belgium, Canada, Colombia, India, Israel, Japan, Mexico, Luxembourg, the Netherlands, Switzerland, Turkey, and parts of the United States. See “Euthanasia & Physician-Assisted Suicide (PAS) around the World,” Britannica ProCon (2/26/20). https://euthanasia.procon.org/euthanasia-physician-assisted-suicide-pas-around-the-world/
virus spread relentlessly. Also, because we are so interconnected, most people recognized the necessity of physical distancing. The world had to grapple with hard questions about the allocation and sometimes rationing of personal protective equipment (PPE). Should one country limit access of other countries to PPE, and what if one country had a greater need for PPE based on the number of COVID-19 cases and their stockpile of PPE? Countries made decisions about re-opening economies while weighing many issues, such as economic hardship, the mental health impact of physical distancing, and the possible subsequent waves of COVID-19, on the world. Similarly, climate change is a pronounced expression of the interconnection of life. What we do to the environment affects everyone globally and could have disastrous ramifications. On the other hand, as the pandemic also showed us, we can make a collective positive impact on water-life and air quality quite quickly by strongly limiting emissions.

The impact of radical enhancements discussed in later chapters go far beyond the individual being enhanced. For example, a moral bioenhancement that makes one more altruistic leads to being kinder and more self-giving to others. And, not taking the moral bioenhancement will also have implications for others. A runner chooses a physical enhancement, increasing endurance, and that runner becomes more competitive in distance running. Competitors may want to improve their odds against the enhanced runner, so they take the enhancement. And, because the enhanced runner has more endurance, they may spend less time with family.

Respect for autonomy is widely recognized as a key bioethical principle. How autonomy is defined, though, has become increasingly debated. Respect for autonomy includes respect for a person’s dignity, which is usually understood to include the ability to make choices about oneself. In normative North American culture, an extreme individualism has reduced a popular understanding of autonomy to individual rights and choice. But a relational autonomy understands rights and choice as relational concepts that only have meaning in the context of each individual’s life narrative. This life narrative necessarily includes all the effects our choices may have on other people and other life. Asian cultures, to pick one type, are in some ways better positioned than Western ones to make choices and develop behaviors that respect relational autonomy. We will explore the implications of a relational autonomy throughout the chapters of this textbook.

What Do We Really Want?
It may seem evident that we make choices, and we do. However, as discussed earlier, values and desires are influenced by complex social processes. We get input from so many sources about what we should want and how to go about getting what we want. It can be difficult to uncover what it is that we truly desire and to resist seeking what we are told to want. Consider the exercise, earlier in the chapter, where you identified your top five values. Does the latest
and greatest iPhone help you live into your top values, giving you deep satisfaction?

We know that much of our daily life is lived with our brain on “autopilot,” out of what researchers call the “default mode network.” With this “fast brain” we make decisions quickly, propelled by any number of influences, such as social media and advertising. Making choices consistent with our values can require effort and time for critical reflection.14

As we introduce radical enhancements in later chapters, resist an unconscious, quick, “autopilot” response and consider how thoughtfully identified values help you assess the true value of each enhancement. Religion, of course, informs values, explicitly for faith adherents and perhaps unconsciously for others.

**Justice**

A third way of defining the issue is to see radical human enhancement as primarily about justice. The moral relevance of social systemic advantages and disadvantages, resource access, and resource allocation are all issues of justice, a key principle in religion.

**The Religions**

Karmic religions emphasize the importance of good deeds and compassion; good karma comes back to benefit those who practice and live with kindness and compassion. The Abrahamic religions also understand the work of justice as important. In Judaism, the commandment to love one’s neighbor as oneself15 and the aspirational concept of *Tikkun olam* (to repair the world) are guiding principles. In Christianity, the commandments, “You shall love the Lord your God with all your heart, and with all your soul, and with all your mind,”16 and “You shall love your neighbor as yourself,”17 are key passages and are often associated with a preferential option for the poor.

This preferential option means that those on the social margins, including those marginalized on the basis of their religion, are seen as most important to the world’s collective work of understanding injustice and working towards alleviating oppression. The preferential option for the poor is a principle embraced in Christian liberation theologies. A concern is that radical

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14 See e.g., Steve Ayan, “The Brain’s Autopilot Mechanism Steers Consciousness,” *Scientific American* (12/19/18). https://www.scientificamerican.com/article/the-brains-autopilot-mechanism-steers-consciousness/; and Jessica Hamzelou, “Your Autopilot Mode is Real—Now We Know How the Brain Does It,” *New Scientist* (10/23/17). https://www.newscientist.com/article/2151137-your-autopilot-mode-is-real-now-we-know-how-the-brain-does-it/#xzzz6YpqnV6DL.
15 Leviticus 19:8.
16 Matthew 22:37.
17 Matthew 22:39.
enhancement technologies will amplify existing injustices unless we first, or at least simultaneously, address the unhealthy values promoting systemic power imbalances. To work towards the safeguarding of marginalized people as we create more enhancing technologies, we need increased engagement of religion in the public square.18

**Distributive and Procedural Justice**

Distributive justice is about the socially just distribution of resources. The resources distributed may be tangible (e.g., food, pay, or technology) or intangible (e.g., encouragement, valuing people by engaging with them in conversation).

Procedural justice is defined as the fairness of the processes that lead to outcomes. Co-design is a procedural justice principle. Questions such as how much time is allocated to whom and who makes decisions are important to procedural justice. When individuals have a voice in the process or if the process involves characteristics such as consistency and fairness, then procedural justice is enhanced. In the healthcare context, procedural justice questions include who receives care, how long must they wait for care, what quality of care do they receive, and what are the roles of the patient, the patient’s family, or multidisciplinary healthcare professionals.

Here is an example of the distributive and procedural justice concerns with regard to access to radical enhancement technologies. Polyurethane super swimsuits changed elite swimming competitions by making swimmers more buoyant and more easily propelled through water. Athletes wearing body-length super swimsuits broke 43 records at the 2009 Fédération internationale de natation (FINA) international swimming competition, and then the suits were banned due to their pronounced effect on swimming performance. Since then, other high-technology drag-reducing swimwear has been developed that is permitted in competitions. But these swimsuits cost a lot of money (200 to 600 US dollars) for people with limited resources, and the suits wear out quickly. Most suits last about two swim meets or 40 swims before the material degrades. This is a clear case of financial means impacting access to enhancement technology. On top of this are procedural limitations in that not every athlete had a voice in deciding whether these swimsuits should have been made an option for competitors in the first place. Should the swimsuits have even been developed?

Turning to the medical field for an example, the gene therapy Luxturna treats a certain type of congenital blindness. Obtaining this treatment requires about 850,000 US dollars. Even though curing blindness is considered therapeutic,

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18 H. Brody and A. Macdonald, “Religion and Bioethics: Toward an Expanded Understanding,” *Theoretical Medicine and Bioethics* 34 (2013): 133-145; and Peter Kahn, “Bioethics, Religion, and Public Policy: Intersections, interactions, and Solutions,” *Journal of Religion and Health* 55, no. 5 (2016): 1546–1560.
rather than enhancing, therapeutic status does not automatically insure access, and not all therapies have therapeutic healthcare status in all countries.

From the liberal side of the theological continuum, an argument is made that scarce resources should not go to enhancement research when so many are starving, homeless, and without education. Resources devoted to one research area are not available for other areas. As we have noted, who is privileged to make such decisions is critical. Currently, most leaders and proponents of transhumanism are white, socioeconomically privileged, Euro-American men. Marginalized groups are not well-represented among transhumanist proponents. And only recently have any ethics guidelines regarding research, development, and application of human enhancement technologies been drawn up. The European SIENNA project (www.sienna-project.eu), “Stakeholder-Informed Ethics for New technologies with high socio-economic and human rights impAct,” “which seeks to develop ethical protocols and codes for human genomics, human enhancement, and artificial intelligence & robotics,” have ethics guidelines in progress.

We have made the point that technology, in the hands of human beings with worldviews, is not value neutral. This is where the procedural justice notion of co-design can be valuable. Marginalized groups must have a voice at the beginning of the design of AI and other technology, or we risk catering to the preferences of those with power. Without diverse input into the funding, direction, and distribution of enhancement technologies, we risk perpetuating and amplifying unjust power structures.

Social Justice
Social justice is a concern for equity, particularly for the socially vulnerable and the socially marginalized. Social justice is about the protection and empowering of those with less power due to racialization, socio-economic disadvantage, ageism, disability, sexism, gender, sexual identity discrimination, and/or other injustices.

Taking the analysis of power to another level, some ethicists and religionists are concerned about ending up with two classes of people, the advantaged enhanced class and the disadvantaged unenhanced class. People with more power and money, at least initially, will almost assuredly have better access to a range of enhancement options. The concern about classes of people can be extended to countries. Globally, countries with big pharma and tech companies producing enhancement therapies and technologies will see their Gross National Product increase and acquire more political power.

Questions related to co-design, also called participatory design, are important procedural justice and social justice issues. Co-design is the move to involve all stakeholders in decision-making processes, including design, regarding the creation of technologies. Technologies that best meet the needs of people and are as usable as possible would be designed and created with the participation of representatives from socially marginalized communities. Without input, for instance, from those with different abilities and experiences
we run the risk of ableism, ageism, racialization, and many other forms of discriminatory tunnel-vision.¹⁹

Without good faith intentions and clear-eyed moral vision, widening gaps between the haves and have-not individuals and countries will persist and escalate. Your top five values, along with plenty of other commendable values, religious and otherwise, will get lost in the shuffle. Justice concerns can and should complicate our thinking.

**Precautionary and Proactionary**

“Precautionary” and “proactionary” are technical ethical terms that can be helpful as we move through the following chapters. A proactionary approach to enhancements advocates for the development of life-improving and even life-prolonging technologies, in spite of some risks. The term “proactionary” was apparently coined by Max More, an early transhumanist, as a way of countering the prevailing precautionary principle.²⁰ Transhumanists generally favor a proactionary stance.

A precautionary position involves moving new therapies and technologies along slowly, paying very careful attention to possible unknown and unintended harmful side effects and, above all, doing as little harm as possible. So, applied to radical human enhancement, a precautionary approach errs on the side of safety by not moving forward quickly on an enhancement if the dangers are unknown or suspected. A proactionary stance errs on the side of speedy production of likely beneficial interventions, in spite of some possible harms. The interpretation and weighing of potential harms and benefits is at the crux of choices involving precaution or proaction.²¹

Bioethicist John Harris is a vigorous advocate of the proactionary approach to some human enhancement therapies, as seen in this statement:

> Therapy delayed is therapy denied, and those who oppose the introduction of new therapies that promise to reduce suffering and extend life face a responsibility as grave as do those who would recklessly introduce technologies that might cause more harm than the good expected or hoped of them. The tension between caution and recklessness walks both sides of this street.”²²

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¹⁹ Brashear, R. P. (director), “Fixed: The Science/Fiction of Human Enhancement,” New Day Films (2013).
²⁰ For a history of the term, see Steve Fuller and Veronika Lipinska, The Proactionary Imperative: A Foundation for Transhumanism (New York: Palgrave Macmillan, 2014), 12-43. See 29-30 for More’s role. For Fuller’s proactionary view, see, e.g., Steve Fuller, Nietzschean Meditations: Untimely Thoughts at the Dawn of the Transhuman Era, Posthuman Studies 1, ed. Stefan Lorenz Sorgner (Basel: Schwabe Verlag, 2019), 76-80.
²¹ An example of a blended approach, attempting to achieve a delicate balance, is Daniel McFee, “The Risks of Transhumanism: Religious Engagements with the Precautionary and Proactionary Principles,” in Religion and Transhumanism: The Unknown Future of Human Enhancement, eds. Calvin Mercer and Tracy J. Trothen (Westport, CT: Praeger, 2015), 217-28.
²² John Harris, “How To Welcome New Technologies: Some Comments on the Article by Inmaculada de Melo-Martin,” Cambridge Quarterly of Healthcare Ethics 26 (2017): 166–172. https://doi.org/10.1017/S0963180116000736.
The duty of beneficence (to do good) can be tougher to follow than the duty of nonmaleficence (to do no harm). If regulatory bodies too quickly approve a therapy, the “therapy” may do more harm than good. But, as Harris points out, if a promising therapy is held back, some people may die unnecessarily if the therapy would have worked. The effort to produce vaccines for the 2020 COVID-19 pandemic is an excellent example of the clash between precautionary and proactionary approaches. Some people are prepared to receive a vaccine that has not gone through all phases that are customarily part of a trial, because they would rather risk an uncertain vaccine than getting the coronavirus. Others take a more precautionary approach and want to wait for a potential vaccine to go through the usual testing rigor before they consent to receive the vaccine.

Religion can weigh in on the side of proaction or precaution. An example of a well-developed proactionary approach as an intellectual foundation for transhumanism, and one that considers the religious dimension of proaction, is titled *The Proactionary Imperative: A Foundation for Transhumanism*. Ted Peters is an important and widely respected voice in the Christian theological and ethical assessment of radical enhancement. Peters is not opposed to radical human enhancement, but he insists on moving carefully and cautiously because of significant capacity to sin and to use enhancement procedures for self-serving purposes.

**THE POWER OF WORDS**

Throughout this chapter on ethics and, indeed, throughout the remaining chapters, it is important to use language carefully and with a critical eye. Words are potent in shaping moral discourse. For example, consider the word “progress.” The word itself implies positive change. But new technology is not necessarily *de facto* good and does not necessarily result in progress. In a similar vein, when we say “enhancement technologies” or “anti-aging technologies/medicines,” we cast an assessment on the topic just by those word choices.

Another good example is the term chosen to refer to those technologies that extend human life indefinitely. “Prolongevity” and “extreme longevity” are both used in the conversation. The first term connotes a more positive assessment of the technologies than the second. The term “radical life extension” could carry a positive or negative connotation, depending on one’s thinking about whether things “radical” are desirable or not. Enhancements make us “better.” What is meant by “better,” and who gets to decide? Self-awareness

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23 Steve Fuller and Veronika Lipińska, *The Proactionary Imperative: A Foundation for Transhumanism* (New York: Palgrave Macmillan, 2014).

24 Michael Burdett presents an excellent analysis of the meaning of progress and how this value laden term is used. See “The Religion of Technology: Transhumanism and the Myth of Progress,” in *Religion and Transhumanism: The Unknown Future of Human Enhancement*, eds. Calvin Mercer and Tracy J. Trothen (Westport, CT: Praeger, 2015), 131–148.
and self-reflexivity are important if we are to uncover power dynamics behind words and be intentional regarding the values that inform ethical reasoning.

How you think about and define the ethical principles described in this chapter help determine whether or not you are generally supportive of radical human enhancement and what particular enhancements you might encourage. “Supportive,” of course, can mean different things. When particular enhancements become available, perhaps you will personally choose to avail yourself, or your children, of them. Perhaps you think government funding and legal regulations should be designed to promote enhancement research and development. No major politician on the world stage is yet talking about radical human enhancement, but perhaps you will support politicians partly on the basis of whether they are for or against these enhancements.

Believing the government should support research on any particular enhancement is related to whether or not one thinks that enhancement is inevitable. Over the past decade or two, as relevant technologies have become more powerful, the general consensus among scientific experts has gradually shifted from whether or not new enhancements will be developed to when they will be and by whom. One view is that if the developed countries prohibit some extreme enhancements, the technology will be created anyway, either by rogue countries or terrorist groups. This “off-shore” possibility can be an argument for responsible countries to proceed with research and development, in order to get there first and maintain control over it.

As we move through the radical human enhancement possibilities in the coming chapters, we will see that society and individuals are going to confront hard choices in the coming years. The three frames of therapy—enhancement continuum, choice, and justice, along with the three ethics theories discussed in this chapter, can provide guidance in reflecting on the various radical possibilities.

**Questions for Discussion**

1. How does your personal story inform your values and how you think about radical human enhancement?
2. Which of the three ethical theories discussed (deontological, teleological, virtue) best describes your ethical decision-making process?
3. Are contact lenses therapy or enhancement? What about a hearing aid? What about your computer? To be an enhancement, does the technology have to be inside us, or attached to us?
4. What do you consider the most important way of framing the radical enhancement issue (i.e., the therapy—enhancement continuum, choice, or justice)? Discuss why.
5. Should you be able to choose whether to get a tattoo? What about expensive eye surgery? Or a germline modification to improve your strength?
6. Regarding possible medical treatments, are you more proactionary or precautionary?
7. Do you think radical human enhancement will ever become the number one social and political issue? Why or why not? If yes, then when?