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EDITORIAL

Anna Vollema, MA | *Managing Editor*
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The issue before you contains three articles that explore the implications of man's creation with a specific purpose, as the *imago Dei* of creation. Whether it be our basic neuroanatomy and how this reality affects moral formation, our creation as embodied creatures in relationship with neighbor and how this informs our decisions regarding technological advancements, or how our creation in the image of God should determine our decisions regarding genetic enhancement, each of these presuppose that the physical creation of humankind was purposeful, and it is therefore our prerogative to seek to live out that purpose in our physical lives. This is a fitting connection in relation to Bryan Just's summarization of CBHD's 2021 annual conference *Bioethics and the Body*, in which scholars from across the United States gathered online to explore how we "view, interact with, manipulate, and analyze our physical bodies."

Starting from an understanding of basic neuroscience, Tamim Khaliqi pens an analysis of moral formation, exploring ways in which the body is designed for religious life. While some Christians fear reductionistic conclusions from the scientific explanation of human consciousness, Khaliqi suggests that a scientifically informed theological and philosophical explanation of the human person is necessary for an understanding of how "things are supposed to be" based on God's creation of mankind in his image. Thus, he sets out to examine some of the biological processes that are involved in moral

formation. Starting with an explanation of how God created a thalamocortical meshwork of specialty areas in the brain, Khaliqi suggests that these pathways establish subconscious avenues of thought and behavior until a definitive choice is necessary outside of such automation. This is where the neuroplasticity of the brain steps in such that remodeling of the brain can occur through a shift in external stimuli, including the acquisition of knowledge. Through continued practice, such neural shifts can become automated processes.

With this established, Khaliqi explicates a model for transferring facts to moral formation with a determinative process. Emotions, he states, create perceptual categories dispersed across neural groups. Learning happens through rehearsal as neural synapses between such groups become automated, and both vice and virtue develop as the pursuit of a particular end becomes habit. Once such learning occurs, knowledge is retained first as the mere organization of concepts (low-grade knowledge) and can eventually develop into the synthesis of such concepts for the use of evaluating new situations (high-grade knowledge). Continual use of high-grade knowledge leads to the ability to initiate complex, big picture application of such information (understanding), which leads finally to wisdom. Wisdom is the development of a biblical worldview which seeks to grasp the whole of reality—both the created world and one's place within it.

Using this developmental framework,

Khaliqi utilizes Exemplar Moral Theory (EMT), a subdivision of virtue ethics, to propose a process to moral formation. In EMT, once a person attains a high-level understanding of the character of an admirable exemplar, admiration becomes the emotion by which the habitual process of emulation leads to wisdom. Thus, virtuous emotions, motives and actions stem from an inborn grasp of the manner in which one should be in relation to the world—wisdom.

Adding reflection on technology to our considerations of the nature of self and others, Savannah Anne Carman writes on the effects of an industrialized society, exploring the topic through the lens of Ivan Illich and his theory regarding conviviality. Conviviality, or the capacity for relationship between self and others, for Illich is actualized through personal freedom expressed within willful interdependence. Thus, Illich calls for a return to the task of provision, whether it be through psychologically or physically oriented engagement, as a responsibility of mankind; a manifestation of neighborliness through natural human capacities. Based on the work of Illich, Carman argues for the pursuit of a postindustrial balance that must be ascertained based on the answer provided to three key questions:

1. What is man made for?
2. What is man capable of?
3. How should men relate to one another?

To the first question, Carman asserts that mankind is made for an embodied relationship with God, neighbor, and nature. Thus, we must temper our pursuit of technological

advancement so as to protect from turning man into a mere means to the end of the next innovation, relearning dependence on one another rather than on machines or “experts” as “energy slaves.” Regarding the capabilities of man, the author suggests that we must reframe our understanding of power, seeing it as a means to the end of a theologically anchored anthropology of virtuous relationships. As it pertains to the final question, Carman opines that mere tools are not the problem, but rather man becoming part of the machine. Thus, those tools and systems that encourage interdependence are to be favored in a convivial society. As a final word of exhortation, she commends the reader to reflect upon the consequences of industrialism and avoid the pitfalls of desensitization and apathy.

Progressing to even more embodied technological advancements, Isabel Woodruff evaluates genetic enhancement through the lens of both scholarly perspectives and the creation-fall-redemption narrative. Highlighting the distinction between somatic gene therapy and genetic enhancement, Woodruff notes that while somatic gene therapy seeks to use genetic engineering to cure genetic diseases, genetic enhancement seeks to abnormally alter DNA with a transhumanist agenda, an act that could cause modifications for future generations. Thus, the author first evaluates genetic enhancement through the scholarly perspectives of Julian Savulescu, John Harris, and Brent Waters.

Savulescu, she states, advocates for genetic enhancement under the assumption that mankind possesses a moral obligation to promote such traits as fairness, empathy, and the betterment of physical and cognitive capacities for the coming generations.

Such improvements must be permanent and transferable for Savulescu, not merely providing a temporary enhancement for the immediate generation. He further states that genetic enhancement provides increased autonomy for the individual if cognitive enhancement activates critical capacities necessary for autonomous decision-making. However, Woodruff challenges each of these assumptions in turn, first by stating that quality of life cannot be determined by universal standards and second by arguing that embryonic genetic enhancement defaces autonomy by choosing a certain kind of future for a person before an individual choice can be made.

Turning to John Harris, another genetic enhancement advocate, Woodruff states that his underlying assumption is that everyone enjoys the benefits of enhancement on an everyday basis (e.g., through natural brain development or medical treatment) and therefore no one would truly deny the goodness of enhancement itself. He sees it as odd that humanity would fear genetic enhancements. He further equates the risks involved in genetic enhancement to those incorporated in such everyday activities as eating fatty foods or receiving vaccinations and asserts that what is natural should not always be valued over what is unnatural. Woodruff contests Harris' claims by raising key points that he neglects, including equity in genetic enhancement distribution; the potential ramifications of genetic enhancement as greater than such things as eating fatty foods; and the necessity for moral evaluation in both what is natural and unnatural rather than creating a mere bifurcation between the two.

The final scholar under consideration in the article, Brent Waters, explores genetic

enhancement through a Christian evaluative lens based in the incarnation and resurrection. Since God became man in the flesh, the human body is of great importance, and since Jesus rose from the dead as human, the Father vindicates the Son's humanity. This vindication of the human body extends to all elements of creation, establishing a created order that becomes determinative of certain moral structures, including creaturely finitude. Such creation-based moral structures are what afford sublimity to human existence, and yet are what proponents of genetic enhancement seek to eliminate. Therefore, Waters asserts that genetic enhancement is an area in which the Christian must refuse to participate.

Woodruff ends her analysis with a brief exploration of how the creation-fall-redemption narrative can inform our decisions regarding genetic engineering. She argues that humanity cannot be defined in reductionistic terms due to our creation in the image of God. Furthermore, the reality of the fall reveals that we will never reach that state of perfection genetic enhancement advocates seek to obtain; that is, until that point of final redemption at the end and beginning of all things, a redemption that only God can usher in.

As we continue our pursuit of extending the reach of *Dignitas* through our now open access format, we hope the research presented here will continue to spark important discussion and research regarding the implications of our creation as the *imago Dei*. If you would like to contribute to that discussion, or any others related to the field of Christian bioethics, we welcome potential contributions.

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03

Can Virtue Be Taught? Neuroscience and Moral Formation

Tamim Khaliqi, MD, MDiv | Guest Contributor

Introduction

Phineas Gage was a twenty-five-year-old railroad worker known for his hard work and affable personality. He was especially adept at the dangerous job of placing the charges necessary to blast away the granite rock of the Vermont mountains where his crew was working in the summer of 1848. However, a moment's distraction resulted in a tragic accident when a mispacked explosion drove a seven-inch iron spike through Gage's jaw, his left eye, the front part of his brain, and out the top of his head. Despite a devastating open head wound and an ensuing infection, Gage miraculously survived with only the loss of eyesight in his left eye. But, the Phineas Gage who emerged from his convalescence was not the same affable young man admired by his supervisors and peers. Before his injury, friends described Gage as well balanced, energetic, a smart businessman, and one who was persistent in executing his plans. Following the injury, his physician described him as if the "equilibrium or

balance, so to speak, between his intellectual faculty and animal propensities had been destroyed." For thirteen years, Gage lived an irresolute life, unable to keep a job, traveling from place to place, and continually getting involved in fights and brawls. He died at the age of thirty-eight, apparently from intractable seizures.¹

For most of history, intangible human qualities such as intellect, language, emotions, and importantly moral bearing were thought to be functions of a non-material soul. However, if our "self"—who we truly are—is wholly a spiritual manifestation, what explains the complete change of personality that occurred in Phineas Gage? How do we make sense of the substantial alterations in character and moral compass that affect unfortunate people who have suffered a stroke or the development of a neurologic disease? What explanation is there for these types of observations if the brain is not in some way responsible for generating our consciousness, our sense of self, and even

our ability to distinguish right from wrong?

For the Christian who takes the Bible's authority seriously, any theory of moral formation must be consistent with Scripture. However, a persistent faith-reason divide makes many believers suspicious of possible scientific explanations for phenomena usually classified as spiritual. Seeking to rectify this divide, Dallas Willard has asserted that our body is the primary resource for religious life, suggesting that we are designed to be spiritual, and that is how our brains work. The way we are is precisely the way it is supposed to be.²

The purpose of this article is to explore the nature of "the way it is supposed to be." Recent discoveries in neuroscience give us insight into how God has created human brains to incorporate knowledge and undergo moral formation. First, I will describe some of the exciting developments in neuroscience that give insight into how our brains generate consciousness and cognitive behavior. The second half of the paper will utilize Exemplar Moral Theory (EMT) to advance a model of moral formation.³ In the end, we will see that, in opposition

Tamim Khaliqi, "Can Virtue Be Taught? Neuroscience and Moral Formation," *Dignitas* 28, no. 3-4 (2021): 3-7. © 2021 The Center for Bioethics & Human Dignity

to a detached immaterial understanding of personality and moral formation, scientific evidence suggests that God has created the human brain to embody these realities.

Neuroscience and Understanding

What is the mind? Is it equivalent to the brain? Is it consciousness? Can a person's mental processes be reduced to merely chemical or physical events? What is the difference between an animal and a human being's consciousness? Is there something beyond the physical brain—a soul? Philosophers have pondered these questions for centuries. Descartes postulated that the mind and body were different substances (substance dualism). At the other extreme, hard reductionists state that the human mind is nothing more than a series of complex chemical and mechanical processes—there is no soul.

Over the past several decades, neuroscientists have made great strides in explaining the nature of human consciousness. However, because of a push to reductionism, Christians are often hesitant to incorporate scientific knowledge in answering the question “What is man?” Nonetheless, theologian Marc Cortez points out in *Theological Anthropology*,

We should develop our understanding of the human person in dialogue with contemporary science. . . . there is widespread agreement that our understanding of human ontology should be informed to some degree by modern science; no theory can simply ignore these findings and operate in a theological or philosophical vacuum. [The] adequacy or inadequacy [of a theory of anthropology] will be established at least partly on the basis of how convincingly it can articulate a way of dealing with this [scientific] information.⁴

Human beings are part of God's creation. As such, we have continuity with other animals and life forms. But we are also discontinuous with other life forms in that God has chosen to create us in such a way that he can establish a relationship with humankind.⁵ Made in God's image, humans think at a higher level, make decisions, use language, and relate meaningfully to others and God. As this paper will seek to demonstrate, high-level mental capability may indeed arise, not from an immaterial soul, but from the created biological processes endowed within humans by God at creation.

Neural Anatomy and Physiology

This paper asserts that God created the human brain to function as it does with higher-level consciousness, spiritual, and moral functions. If this is true, a basic understanding of neuroanatomy is foundational in understanding consciousness and moral formation. The human brain, weighing about three pounds, is, without a doubt, a complicated and fantastic creation.⁶ The outer, cerebral cortex layer is highly developed in humans (more so than other mammals) and contains about one-third of the total 100 billion nerve cells (neurons) that compose the brain. Just below the cortex is the thalamus, which serves as the relay center for the brain. Each neuron can form multiple connections (synapses) with other neurons throughout the brain, and there are an estimated one million billion such cortical and corticothalamic connections.⁷ According to Gerald Edelman in *A Universe of Consciousness*, “If we counted one synapse per second, we would not finish counting for 32 million years. If we considered

the number of possible neural circuits, we would be dealing with hyperastronomical numbers: 10 followed by a least a million zeros. (There are ten followed by 79 zeros, give or take a few, of particles in the known universe.)”⁸

Scattered throughout the brain are hundreds of specialized areas, each containing tens of thousands of neuronal groups. While these neuronal groups are functionally specific, they interconnect in a vast three-dimensional meshwork of synapses allowing them to work together. The neurons are so tightly connected that “any perturbation in one part of the meshwork may be felt rapidly everywhere else. Altogether, the organization of the thalamocortical meshwork seems remarkably suited to integrating a large number of specialists into a unified response.”⁹ The input of sensory perceptions and experiences occurring over an individual's life form these connections (synapses) between neurons and neural groups such that “no two brains are identical, not even those of identical twins. . . . in each brain, the consequences of both a developmental history and an experiential history are uniquely marked.”¹⁰ With repeated use, these pathways simplify and bypass conscious control except in situations that require a definitive choice or a change in plan.¹¹

The term neuroplasticity describes the constant, moment-by-moment remodeling occurring in neural pathways in response to environmental stimuli. Neuroplasticity stands in contrast to the older idea that the physical structure of the brain is fixed at a fairly early age. Consequently, it provides a biological basis for “knowing.”¹² In other words, the acquisition of knowledge continually changes brain structure. Further, accumulating knowledge and practice strengthens the neural pathways so that they become highly efficient and often activated without conscious thought. Neuroplasticity suggests that the brain is continually changing physically in response to experience.¹³ Considering moral formation, such pathways may help explain the permanent nature of virtuous (and vicious) character. The more one chooses to act or think in an upright manner, the more one naturally and eventually subconsciously behaves in that manner.¹⁴ Neuroplasticity can also explain the process as one consciously seeks to change their behavior by “rewiring” pathways laid



down by habitual practice. Paul encourages his readers to not be conformed to this world, but to be transformed. How are they to accomplish this? By renewing their mind.

A Model for the Integration of Knowledge to Understanding

Now that we have briefly surveyed some of the essential neuroscientific concepts, we can incorporate them into a biblical model for knowledge acquisition, wisdom, and moral formation. This model is based on Linda Zagzebski's work in virtue ethics and epistemology, as well as concepts regarding ritual put forward by Dru Johnson and James K.A. Smith.¹⁵ Further, many of the scientific ideas discussed in the first part of this paper provide a neuronal basis for the transformation of facts to understanding and moral formation.

Facts and Learning

In this model, "facts" are incoming data, perception is the process by which that data enters the neural system (e.g. sight, hearing, etc.), and emotions modulate these perceptions. Emotions are intimately connected to our bodies—from intricate facial expressions to that feeling in the pit of the stomach when things are not going well. Neuroscientist Antonio Damasio asserts in *Self Comes to Mind* that feelings are our perceptions of the bodily changes wrought by emotions.¹⁶ Emotions are critical for the maintenance of life. Consequently, an infant reliably acquires them early in their development. While emotions tend to be universal, they are also highly influenced by previous experience.¹⁷ Thus, neuroplastic changes in an individual brain secondary to life experiences introduce significant variation in the expression of emotions. Further, emotions will often operate in the background, at the subconscious level, and trigger an action or a feeling without one being aware of the causative emotion. Thus, a long-forgotten traumatic incident early in childhood can have lasting effects on an adult's moral decisions and behavior.¹⁸ The brain carves these perceptions into perceptual categories, stores it in widely dispersed neural groups, and creates neural synapses that integrate the information between neural groups.

Learning occurs as the pathways between neural groups become "hard-wired" through repetition. Rehearsing information "thickens" these neural pathways and

tightly associates the information. As these pathways become stable, they also become automatic and subconscious. Conscious control becomes essential only when a definitive choice or change in plan is necessary.¹⁹ Consistent with neuroplasticity, the more a person pursues an action—be it beneficial or destructive, virtue or vice—the more set that pattern becomes. When people seek what they want or desire, "it becomes habitual, which means that the body shapes itself in the direction of the pursuit, reinforcing itself in an increasingly impenetrable cycle of addiction."²⁰

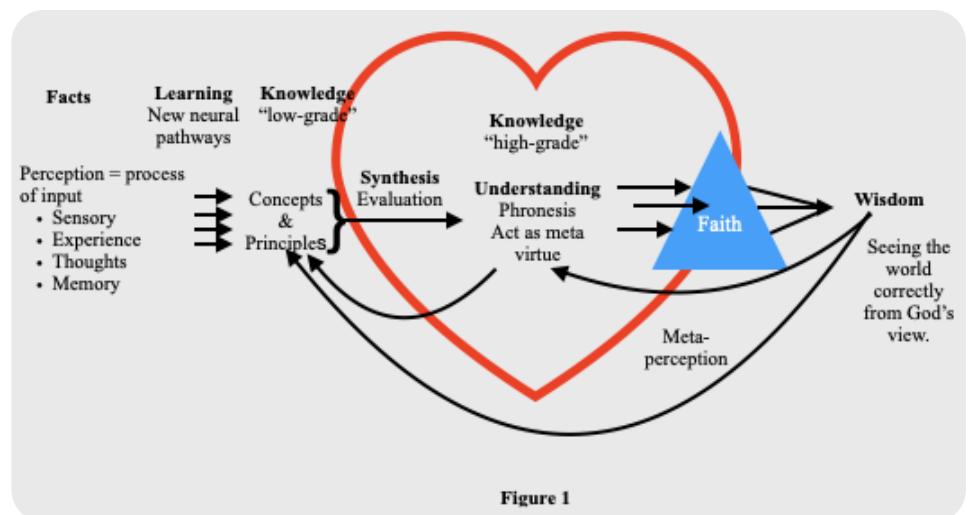
Knowledge, Understanding, and Wisdom

In *The Dynamic Heart in Daily Life*, biblical counselor Jeremy Pierre provides a functional definition of knowledge as "the ability to see a situation more clearly."²¹ By the model, multiple data points lead to low-grade knowledge. Low-grade knowledge includes the organization of facts into general concepts and principles. From the perspective of human personality and behavior, low-grade knowledge would be all the explicit and implicit experiences a person has encoded over their life. Low-grade knowledge becomes high-grade knowledge as synthetic and evaluative processes occur. A person who has developed high-grade knowledge in a field can use learned facts, concepts, and principles to evaluate new or unique situations. Recurrent use of high-grade knowledge can lead to an intuitive understanding. Understanding is the ability to see the bigger picture, to make judgments, and to act in a manner that appears automatic or intuitive. When a skill is involved, understanding appears as expertise. There is a constant feedback loop as the agent uses understanding to evaluate and synthesize new incoming

data. For example, a skilled doctor who has understanding can evaluate a complex and confusing medical situation and intuitively know the most probable diagnosis and treatment plan. A concert pianist with thousands of hours of practice under her belt can perform the Rachmaninoff Third Piano Concerto flawlessly, not thinking about finger movement but about interpreting the music.



The final level of integration is wisdom—a matter of grasping the whole of reality. In many ways, wisdom can equate with worldview. As such, wisdom carries biblical significance. Cornelius Plantinga, Jr. describes biblical wisdom as "the knowledge of God's world and the knack of fitting oneself into it."²² Given that God designed the human brain to function as it does, biblical wisdom demands people to center their knowledge about the world and themselves on what God says about it. Faith allows the believer to appropriate this God-encompassing worldview. In the model, faith acts as a prism that focuses various lines of understanding



into a single, comprehensive way of seeing the world as God sees it.

Although it does not use scientific language, the Bible describes human behavior using similar concepts. Scripture uses the term “heart” to describe the center of conscious thought. The Bible also depicts the heart’s functions as occurring largely beyond the level of intentional behavior.²³ In addition, the Bible indicates that knowing God’s Word is the best way to ensure godly behavior. As biblical truth is perceived, acknowledged as true, and incorporated into one’s conscious thinking, it then becomes hidden deep in the heart where it subconsciously affects a Christian’s understanding and behavior in response to their world and situations.²⁴ Therefore, what one experiences, puts in their heart, and meditates upon not only affects the way they think but also has a dramatic effect on the way their brain processes new incoming information.²⁵ This reprogramming may be spiritually positive (Ps 119:9–11), or it can have dire spiritual consequences (Rom 1:21–32).

Exemplar Moral Theory

Historically associated with Aristotle and Thomas Aquinas, virtue ethics focuses on the person making the moral decision, the agent, and how they develop good (or bad) character. Virtue ethics looks at people asking, “What is the underlying trait that motivates this behavior?” However, it tends to skirt the question “How did they become virtuous?” Exemplar Moral Theory, a branch of virtue ethics, addresses moral formation.²⁶

The foundation of EMT is the concept of an exemplar—a person who, on close observation, is admirable in all or at least most of their acquired traits.²⁷ One may identify exemplars through intimate personal experience, narrative, and even empirical studies (such as research into the lives of holocaust rescuers). The essential factor is that one acquires a deep (high-level) understanding of the exemplar’s character rather than a superficial (low-level) knowledge of personality.²⁸

Alfred North Whitehead insightfully noted, “Moral education is impossible without the habitual vision of greatness.”²⁹ Exemplars provide a vision of greatness that others seek to emulate, and admiration is the emotion that drives EMT. Behavior

that is admired by others typically is other-centered, coming from a deep part of the exemplar’s psyche—it comes from the heart. The problem is that one can have misplaced admiration. Thus, exemplary action needs to be evaluated by an objective standard. God’s revelation in Scripture and ultimately in Jesus Christ, the incarnate Son of God, serves as the authoritative source of exemplary behavior.

An exemplar’s actions set a standard for virtue. Thus, one sees admirable behavior in the exemplar, and by emulation, they imagine themselves to have that behavior. They then set out to enact, or simulate, this self-image.³⁰ When tied to admiration, simulation allows us to imagine, and eventually incorporate, the traits and virtues we admire in the exemplar.

Virtues become habit through imitative repetition and practice, thus laying down and solidifying neural pathways. Aristotle notes that “virtues arise in us . . . and are made perfect by habit.”³¹ Dru Johnson points out that both “the Hebrew Bible and Christian Scriptures presume a thoroughly ritualized life for the sake of knowing correctly.”³² As practice leads to habit, moral formation occurs whereby proper motives, emotional states, and actions are integrated into one’s character. From a physiologic perspective, through neuroplasticity, the habitual practice of virtuous (or godly) behavior increases the chances that such behavior will occur in the future. Eventually, it becomes an instinctive understanding of the way one should be in the world.

Model for Moral Formation

While this model seems to make intuitive sense and is certainly compatible with what we hypothesize is occurring in the brain, for the Christian, the vital question is whether this system is consistent with Scripture. Does the model present a scriptural picture of moral formation? Indeed, the Bible presents exemplary modeling as a mode of moral formation. In 1 Corinthians 4:15–17, Paul encourages the Corinthian believers to imitate his own emulation of Christ. In 2 Thessalonians 3:7–9 Paul states, “For you yourselves know how you ought to imitate us, because we were not idle when we were with you, nor did we eat anyone’s bread without paying for it, but with toil and labor we worked night and day, that we might not be a burden to any of you. It was not because we do not have that right, but to give you in ourselves an example to imitate” (ESV). The author of Hebrews exhorts his readers to be “imitators of those who through faith and patience inherit the promises” (6:12).

The Sermon on the Mount also presents an exemplar model for moral formation. Matthew presents Jesus as the perfect exemplar, setting the example for his disciples as they establish a community of character.³³ Matthew makes every effort to ensure that his readers understand that Jesus’ authority comes from above and that he is the supreme exemplar. The introduction to the Sermon concludes with a call for the believing community to be salt and light in the world (Matt 5:13–16). Consequently, from the start the Sermon puts the disciples on notice that

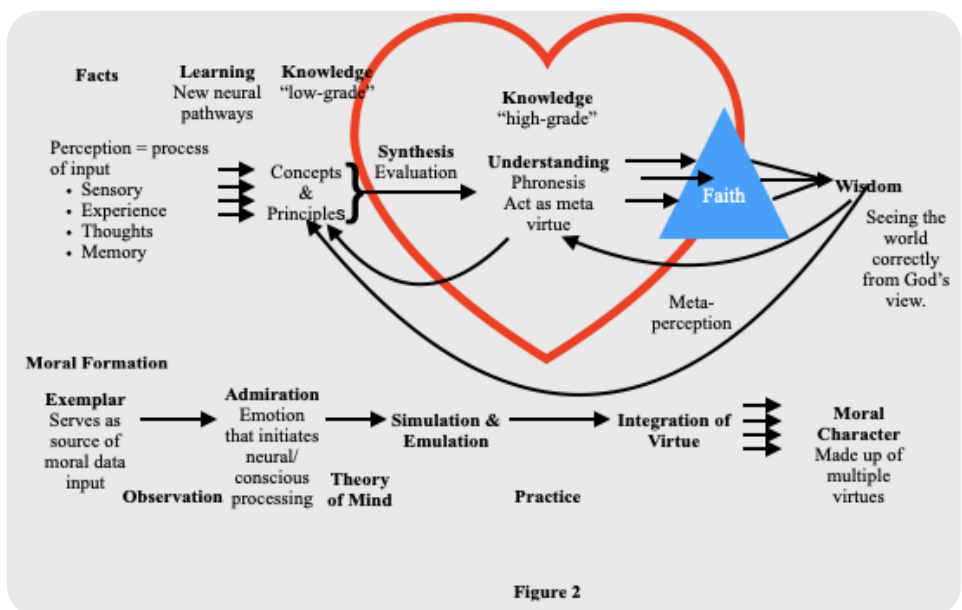


Figure 2

the world is observing them. By following Jesus as the supreme exemplar, they are now the exemplars for the Kingdom. In using the metaphors of salt and light, Jesus points out the admirable and desirable qualities of the disciples' way of living before the world. Matthew goes on to develop the theme of an expectation of greater righteousness in the main body of the Sermon (Matt 5:17–7:12). However, the pinnacle of this expectation occurs in 5:48, where the exemplar is God, the Father, who defines greater righteousness. Thus, even as Jesus is presented as the perfect exemplar, his disciples are to emulate him and become exemplars of greater righteousness.

Conclusion

In Plato's *Phaedrus*, Socrates ponders the question, "Can virtue be taught?" This paper

has sought to demonstrate that God not only created humans to perceive and comprehend the world in such a way as to generate a moral understanding of it but that he created our brains to carry out the process of acquiring virtue. I took a brief look at some of the neuroscientific discoveries over the last few decades that provide insight into how the brain produces consciousness and incorporates moral thinking. I then developed a model for the incorporation of knowledge based on the neuroscientific data. Building on that model, I proposed a similar ethical formation model using exemplary moral theory as a framework. Finally, I demonstrated that the idea of learning by emulation is biblical. In fact, the Sermon on the Mount presents Jesus as the supreme exemplar, the one upon whom his disciples should model their behavior, consequently serving as

models of moral conduct for other believers, and indeed the watching world.

We learn by watching, admiring, emulating, practicing, and integrating desired behavior into our character. The Bible promotes this pattern of moral formation, and neuroscience indicates that this is precisely how our brains work. Thus, we see that God, in his infinite wisdom, has created humans to perceive, comprehend and understand the world from a moral framework, and he has created our brains to carry out that task. Indeed, we are fearfully and wonderfully made.

1. Adapted from Antonio R. Damasio, *Descartes' Error: Emotion, Reason, and the Human Brain* (New York: Penguin, 2005), 3–19. Quotation from J. M. Harlow, "Passage of an Iron Rod Through the Head," *Publications of the Massachusetts Medical Society* 2 (1868): 327–47.
2. Dallas Willard, *The Spirit of the Disciplines: Understanding How God Changes Lives* (New York: HarperOne, 2009), iv.
3. EMT is a form of virtue ethics that depends on the concept of a moral exemplar—someone who is paradigmatically good, not only in action but also in motive. In contrast to traditional virtue ethics, EMT asks, "How did this person become virtuous?" and "How can we learn from their example?" Thus, EMT addresses moral formation.
4. Marc Cortez, *Theological Anthropology: A Guide for the Perplexed* (New York: T&T Clark International, 2010), 71.
5. In the Genesis account of creation, God uniquely communicates with humankind using language. He specifically gives them a job and a moral mandate. Also, in expanding on the creation of the woman, the author of Genesis seems to be emphasizing the relational nature of humanity. Psalm 8 also gives humanity a special place in God's creative order. The psalmist notes God's special care and relationship with humans (8:4). While humans may be created lower than the heavenly beings, the psalmist states that they are over the rest of creation. In fact, the whole arc of scripture proclaims the unique place humans hold in creation.
6. All anatomical and physiological information, while widely available, comes from Gerald M. Edelman and Giulio Tononi, *A Universe of Consciousness: How Matter Becomes Imagination* (New York: Basic Books, 2001), 28, 45, 47 unless otherwise noted.
7. Douglas Axe, *Undeniable: How Biology Confirms Our Intuition That Life Is Designed* (New York: HarperOne, 2017), 126.
8. Edelman and Tononi, *A Universe of Consciousness*, 28.
9. Edelman and Tononi, *A Universe of Consciousness*, 45.
10. Edelman and Tononi, *A Universe of Consciousness*, 47.
11. Edelman and Tononi, *A Universe of Consciousness*, 58.
12. Both Johnson and Pierre discuss the bodily basis for cognitive function. Dru Johnson, *Scripture's Knowing: A Companion to Biblical Epistemology* (Eugene, OR: Cascade Books, 2015), 14; Jeremy Pierre, *The Dynamic Heart in Daily Life: Connecting Christ to Human Experience* (Greensboro, NC: New Growth Press, 2016), 66.
13. Louis Busacca, Angela Sikorski, and Bill McHenry, "Infusing Neuroscience within Counselor Training: A Rationale for an Integrally-Informed Model," *Journal of Counselor Practice* 6, no. 1 (2015): 36, https://www.journalofcounselorpractice.com/uploads/6/8/9/4/68949193/busacca_et_al_vol6_iss1.pdf.
14. Linda Trinkaus Zagzebski, *Virtues of the Mind: An Inquiry into the Nature of Virtue and the Ethical Foundations of Knowledge* (New York: Cambridge University Press, 1996), 116.
15. Dru Johnson, *Knowledge by Ritual: A Biblical Prolegomenon to Sacramental Theology*, *Journal of Theological Interpretation Supplements* 13 (Winona Lake, IN: Eisenbrauns, 2016); Johnson, *Scripture's Knowing*; Dru Johnson and Craig G. Bartholomew, *Biblical Knowing: A Scriptural Epistemology of Error* (Eugene, OR: Cascade Books, 2013); James K. A. Smith, *Desiring the Kingdom: Worship, Worldview, and Cultural Formation* (Grand Rapids, MI: Baker, 2009); James K. A. Smith, *Imagining the Kingdom: How Worship Works*, *Cultural Liturgies* 2 (Grand Rapids, MI: Baker Academic, 2013).
16. Antonio Damasio, *Self Comes to Mind: Constructing the Conscious Brain* (New York: Pantheon Books, 2010), 110.
17. Edelman and Tononi, *A Universe of Consciousness*, 128.
18. Damasio, *Self Comes to Mind*, 125.
19. Edelman and Tononi, *A Universe of Consciousness*, 58. The act of learning a skill illustrates the automatic behavior characteristic of neuronal pathways. Anyone who has learned to drive a stick-shift transmission can attest to the thought processes that go into learning the proper way to engage the transmission without stalling. Initially, the student driver must consciously think through every action. Eventually, with practice, releasing the clutch and pressing the accelerator become so automatic that the driver can listen to the radio, carry on a conversation, and drive in traffic, yet never stall the vehicle. Only when one must make specific decisions does the process surface to the conscious level—for instance, when one finds themselves at a stoplight on a steep hill.
20. Pierre, *The Dynamic Heart in Daily Life*, 81.
21. Pierre, *The Dynamic Heart in Daily Life*, 45.
22. Cornelius Plantinga, Jr., "The Sinner and the Fool," *First Things* 46 (1994): 24–25, <https://www.firstthings.com/article/1994/10/the-sinner-and-the-fool>. Emphasis in the original.
23. Pierre, *The Dynamic Heart in Daily Life*, 34–35.
24. Pierre, *The Dynamic Heart in Daily Life*, 33.
25. Pierre, *The Dynamic Heart in Daily Life*, 39.
26. Linda Trinkaus Zagzebski, "Exemplarist Virtue Theory," *Metaphilosophy* 41, no. 1/2 (2010): 54.
27. Gregory R. Peterson et al., "The Rationality of Ultimate Concern: Moral Exemplars, Theological Ethics, and the Science of Moral Cognition," *Theology and Science* 8, no. 2 (2010): 145.
28. Linda Trinkaus Zagzebski, *Exemplarist Moral Theory* (New York: Oxford University Press, 2017), 68.
29. Alfred North Whitehead, "The Place of Classics in Education," in *The Aims of Education and Other Essays* (New York: Free Press, 1929), 69, quoted in Zagzebski, *Exemplarist Moral Theory*, 129.
30. Zagzebski, *Exemplarist Moral Theory*, 136.
31. Aristotle, *Nicomachean Ethics*, I. II.1.1103a19–25.
32. Johnson, *Scripture's Knowing*, 66.
33. Richard Hays, *The Moral Vision of the New Testament: Community, Cross, New Creation* (New York: HarperOne, 2013), 96.

08

Ivan Illich on the Convivial & Industrial Society

Savannah Anne Carman, BA | Guest Contributor

Introduction

Since the introduction of industrialism in the early 20th century, life has taken on an unprecedented shape. In the wake of the changes, cultural critics have attempted to articulate the pros and cons of the changes. The 20th century historian of technology Jacques Ellul provides a historical account of technological development as a way of tracing the differences between current and previous technologies. His approach focuses on development in energy sources, by which he means “a rearrangement of the world” wherein “the change is not in the use of a natural force but in the application of technique to all spheres of life.”¹ Ivan Illich, also of the 20th century, picked up on Ellul’s work and offered a response in his own book *Tools for Conviviality*. Illich echoes Ellul’s concern about the “application of technique” and tied it into the implications of industrialism for our social fabric and habits. Instead of deferring to the technical trends and developments, Illich proposes a return to a convivial society wherein “individual freedom [is] realized in personal interdependence

and, as such, [is] an intrinsic ethical value.”² Practically speaking, Illich believes that man possesses a “native capacity for healing, consoling, moving, learning, building their houses, and burying their dead.”³ Instead of industrialism that outsources these needs and abilities to the machine or expert, Illich calls for a return to man’s natural capacities to meet these needs realized in the duty of neighborliness. The problem with machines is that they have become the primary source of provision in our society, and the provider which man merely operates.

In this paper I will explore, drawing on Illich’s notion of conviviality, some of contemporary society’s assumptions about industrialism, particularly how industrialism’s anthropology outsources human responsibilities and threatens flourishing communities. I argue that we can advance Illich’s optimism that “mankind still can avoid passing through the industrial age, by choosing right now a postindustrial balance in [our] mode of production.”⁴ What Illich means by this is a path of discrimination rightly understood. Discrimination that

holds to theologically sound anthropology as something to protect from contemporary trends—be that Marxism that infringes on work independent from the state, sweatshops that abuse work, or socialism that discourages work altogether and enables alienation from neighbor. This paper will compare and contrast three questions that convivial and industrial society must answer: what is man made for; what is man capable of; and, given the answers to these questions, how should men relate to each other? In the end, I hope that we will familiarize ourselves with the similarities and differences between industrialism and conviviality, recognize the stakes of industrialist anthropology, and increase our interest in conviviality.

Introduction to *Tools for Conviviality*

Ivan Illich was a native of Vienna who lived from 1926–2002. He became ordained as a Roman Catholic priest, primarily serving in South America where he founded the *Centro Intercultural de Documentacion*. During his lifetime, he witnessed the spike in technological development and offered critiques about four major spheres: education, transportation, medicine, and science. Illich proposes a new framework for thinking about

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tools that challenges the modern ways of thinking, thinking that alienates science from anthropology and anthropology from ethics. He formalized his responses in the book *Tools for Conviviality*, published in 1973. Note that Illich is not a Luddite. On the contrary, he believes that “tools are intrinsic to social relationships.”⁵ But tools are a more general category under which industrialism falls, and it is the use of tools as expressed in industrialism that concerns Illich. His measured, nuanced analysis makes him of particular interest and important to conversations about ethics of technology.

In *Tools for Conviviality* Illich proposes a “criteria by which the manipulation of people for the sake of their tools can be immediately recognized.”⁶ He presents a criterion that favors homeostasis and rejects the idea that all tools and their effects are beneficial. As Illich sees it, “it will be necessary to recognize natural scales and limits” of tools lest we become their slaves in the clamor for success, power, or possession.⁷ Given Illich’s skepticism of industrialism’s effect, he proposes conviviality. He uses conviviality “as a technical term to designate a modern society of responsibly limited tools”⁸ that affords “autonomous and creative intercourse among persons, and the intercourse of persons with their environment.”⁹ The convivial society is one that takes man’s relationship with himself, his neighbor, and nature as prime importance. But it is not enough to keep this prime importance on the intellectual level. There is a practical component that demands action. After all, man could assent to the idea but fail to live by it and accept industrial tools that thwart this end. Thus, Illich promotes the independence of man from the machine or system in favor of man’s immediacy to direct power over the machine and man’s interdependence with his fellow man.

Illich defines industrial tools as those that “deny this possibility” of responsible limits, “to those who use them and allow their designers to determine the meaning and expectations of others.”¹⁰ There is a problem when man is unable, if not also limited, from directly meeting his own basic needs—be that fixing a truck so as to garden, understanding his body and need for a sick day, or facing barriers to entry in the job market due to occupational licensing. The answer to the question “who decides the meaning

and oversight of this tool?” tests whether the tool is convivial or not, and most tools of industrialism are overseen by a small number of individuals. Another way to understand Illich’s definition of industrialism is by analyzing its mediating effect. Simply consider the degrees of separation between man and his work, man and the subject of his care, and man and nature. In a convivial society, “the degree [to which man] masters his tools, he can invest the world with his meaning; to the degree that he is mastered by his tools, the shape of the tool determines his own self-image.”¹¹ In other words, the mastery over, or submission to, a tool bares significance in man’s engagement with the world. Furthermore, this dynamic bares direct effects on a man’s sense of self, which in turn influences his sense of purpose. If the pregnancy of a man’s neighbor is exclusively overseen by an expert and the man is excluded from engaging with his neighbor’s laboring and birthing per medical protocol, then there’s a stripping of responsibility that deteriorates society.



History of Technology According to Illich

Illich traces the timeline of technological development relative to energy, starting with mankind’s brute strength and progressing towards hydropower, steam, coal, crude oil, and most recently electricity. While most of these energies provided the same effect, the scope of their potential is no less limited. Steam and coal moved boats and cars move and mills grind, but not much more. Now

with the emergence of electric power there is a new precedent, namely tools of operation and automation.

Illich identifies two major developments, what he calls watersheds, that help us understand the new precedent of industrialism. The first watershed occurred around 1913 and was good. It marked the breakthrough of the “desirable effects of new scientific discoveries [as] easily measured and verified.”¹² But then came the second watershed, around 1955, when “the marginal utility of further professionalization declined, at least in so far as it can be expressed in terms of the physical wellbeing of the largest number of people.”¹³ There were breakthroughs, like medical advancements that decreased mortality rates, but these improvements came at costs. Unfortunately, the costs have largely been of a qualitative nature, affecting how we relate to each other and the means to our livelihood, how we work. Instead of depending on social ties to aid in our birth and death, these basic needs have been outsourced to the strangers of a hospital and suffered the new standards of cesarean sections and cremation, all in the name of efficiency.

A society suffering from the effects of the second watershed as a watershed is not in and of itself a bad thing. Rather, the reaches of our desire for progression overshadowed our vision of genuine human flourishing. Illich described this obsession as a “growth mania,” an obsession with growth for growth’s sake and more for the sake of more, regardless of the thing being grown or the means of achieving the end.¹⁴ And this growth mania is a natural consequence of a radical monopoly.¹⁵ By this he means “the dominance of one brand . . . that exercises an exclusive control . . . and excludes non-industrial activities from competition.”¹⁶ The danger of such growth is that it becomes “addictive” precisely because “addicts of any kind are willing to pay increasing amounts for declining satisfaction,” which is exactly what we see in society today.¹⁷ These monopolies exercise “dominance of one type of product rather than the dominance of one brand” and so “exercise an exclusive control over the satisfaction of a pressing need, and excludes nonindustrial activities from competition.”¹⁸ This is not to be confused or reduced to the economic landscape of consumerism. Instead, Illich is describing

a more ubiquitous social effect wherein “the threshold at which these projects absorb, conceptually and physically, the client into the tool . . . the threshold where technology is decisively transformed into Moloch, the system.”¹⁹ Ellul adds that “the change is not in the use of a natural force but in the application of technique to all spheres of life.”²⁰ In other words, instead of living with nature, man is devising an artificial world wherein the natural order submits to artifice and algorithms—instead of healthy eating and exercising, man survives on medicine; instead of dinner conversations and dancing, man “socializes” on virtual platforms; instead of preparing food and dining with one’s neighbor, man orders food at the click of a button and eats alone. The alibi might be convenience, but Illich would find this to be a sorry response given the social stakes.

While infinite growth is conceptually possible, it is practically crippling. By eating, a man grows, but if he increases his consumption beyond a certain point, he gorges himself, and this is lethal. The fallacy with the theory of exponential growth assumes limitlessness. This is problematic because it is a lie—limitlessness denies man’s finite nature. Instead of this, Illich advocates for a lifestyle that is proportional to man and nature’s personal capacity and needs.²¹ This demands cooperation with nature and reviving our imagination of the good life—a life that engages and nurtures our physical sensibilities. Such a life is one that recognizes and submits to embodiment as a primary mode of living in the world.

What Is Man Made for?

This leads to the first question: what is man made for? Conviviality’s anthropology complements the theology of neighborliness. A convivial society creates and adopts tools based on their aid in furthering the interdependence of and responsibility for human relationships. While Illich is not averse to expertise, he is cautious given the possibility of undermining and outsourcing social responsibilities not only to machines, but also to “experts.” As such, Illich tasks man to “rediscover the value of joyful sobriety and liberating austerity” so as to “relearn to depend on each other rather than on energy slaves.”²² This calls for enabling individuals to care for each other as it relates to their education, health, and economic endeavors. When tools tip over from being an aid

to being the conductor that man works for, man compromises on this fundamental social responsibility by submitting to the industrial philosophy of dependence on the machine instead of man.



The industrial age challenges the traditional philosophy of the human *telos*, that man is made for communion with God, by marginalizing the importance of relationship, particularly embodied relationships. Illich draws from Herbert Marcuse, who described industrialism’s twisted *telos* as a “pacified existence . . . the repressed final cause behind the scientific enterprise.”²³ Marcuse warns that “if this final cause were to materialize and become effective, the Logos of technics would open a universe of qualitatively different relations between man and man, and man and nature.”²⁴ The difference would be a sterile existence wherein man’s body and its sensitivity to the world, especially one’s neighbor, is inconsequential to the good life. In this world, man is made for whatever will further technological innovation, at whatever costs. Man becomes a means and the end is the next innovation.

What Is Man Capable of?

The second question is what is man capable of? A convivial society is delineated by natural boundaries. While Illich promotes man’s “empowerment” in his capacity to control tools, the natural order tempers man’s power. In other words, power in the convivial

society is only a means to an end, an end that Illich identifies as virtuous relationships. This calls for submission to finitude. This does not mean that humans should not use tools that aid in work beyond man’s natural capacity—be that transporting tons of raw materials, injecting anesthesia for a surgery, employing specialized surgical tools, etc. But, it does mean rejecting the temptation to transcend our bodies or become the machine or anything that rejects or undermines a theologically grounded anthropology. Outsourcing or mediating our senses is inhumane and antithetical to relationships. This way of life is therefore contrary to the convivial society Illich is promoting.

In contrast, an industrial society is discontent with natural limits; it demands exponential growth. This is the “growth mania” that Illich warns about and defined as a radical monopoly. We are asked to sacrifice ourselves to the machine, to incorporate ourselves so as to become part of the machine’s apparatus to the detriment of our own bodies. Without respect for natural limits, man is vulnerable to the ravenous appetite of growth for growth’s sake. In medicine, this is evidenced in cases like birth control and contraception. Synthetic solutions have become the norm, especially as it relates to women’s fertility. Not only do healthcare providers receive monetary benefits from endorsing birth control or contraception, these recommendations are also accepted as necessary to a normal and healthy lifestyle, as opposed to unnatural or intrusive. The fact that synthetic manipulation is normal should give us pause. Illich’s concern is about more than the financial deviance of Big Pharma. The problem is more insidious than that. Monetary incentives aside, Illich describes the heart of the problem as the concentration “on breeding a human stock that was fit only for domesticated life within an increasingly more costly, man-made, scientifically controlled environment.”²⁵ This microcosm of industrialism effectively leaves the human “breed [raised] at almost any cost [as] a generation even more [dependent] on medicine.”²⁶ In other words, our sense of and respect for natural order is now dictated by the expanding scope of technological innovation and experimentation.

How Should Men Relate to Each Other?

Finally, there is the question about how men should relate to each other given his *telos*.

Conviviality favors tools and systems that encourage man's need for relationships. Thus, conviviality is wary of the scope and degree of mediation that tools and systems build out. The concern is that man "finds the senses useless precisely because of the very instruments designed for their extension." As a result, "one is prevented from touching and embracing reality."²⁷ Illich opts instead for returning man's engagement with the world and his neighbor by returning the responsibility to birth, live, and die together. Illich believes this is possible because "what people most need to learn, they cannot be taught or educated to do. . . . they must learn to do so by living active and responsible lives."²⁸ The problem is not using tools; the problems arise when man starts to become part of the machine and neglects his social responsibilities.

Industrialism promotes a narrative that disregards relationships by deforming our imaginations and setting a precedent that

trumps the wisdom of tradition. As Illich describes, "our imaginations have been industrially deformed to conceive only what can be molded into an engineered system of social habits that fit the logic of large-scale production."²⁹ As a consequence, "the organization of the entire economy toward the 'better' life has become the major enemy of the *good* life . . . thus, one will have the potential of turning public imagination inside out."³⁰ The merit of a possibility is measured according to degrees to which something is "better" relative to the scientific possibilities, not necessarily what is good. As Illich describes it, "the 'better' replaces the 'good' as the fundamental normative concept."³¹ Such a metric abandons virtue for experimental exploration.

Conclusion

Moving forward, Illich believes that conviviality is possible, but only if people "relearn to depend on each other rather than on energy slaves."³² In the contemporary

industrial society, man suffocates on smog and his body atrophies from technological "improvements" in the pursuit of potential power and progress. If the situation is so dire, one might think that there would be resistance. On the contrary, the fact is that "envy blinds people and makes them compete for addiction."³³ If we are not careful, we will find ourselves dulled into a stupor and lead to live a life of apathy and complacency, both of which are irresponsible and vicious to ourselves and others. Illich's philosophy is important because it challenges our assumptions by asking about the consequences of industrialism on human flourishing, whether it helps or hurts. He recommends that we "submit to the concept of a multidimensional balance of human life which can serve as a framework for evaluating man's relation to his tools."³⁴ This calls for a change of mind but more importantly a readiness of hand, to offer a hand to one's neighbor and in our work.

1. Jacque Ellul, *The Technological Society* (Vintage Books: New York, 1964), 42.

2. Ivan Illich, *Tools for Conviviality*, (Marion Boyars: London, 1973), 11.

3. Ivan Illich, *Tools for Conviviality* (Marion Boyars: London, 1973), 54.

4. Illich, *Tools for Conviviality*, ix.

5. Illich, *Tools for Conviviality*, 21.

6. Illich, *Tools for Conviviality*, 14.

7. Illich, *Tools for Conviviality*, xii.

8. Illich, *Tools for Conviviality*, xii.

9. Illich, *Tools for Conviviality*, 11.

10. Illich, *Tools for Conviviality*, 21.

11. Illich, *Tools for Conviviality*, 21.

12. Illich, *Tools for Conviviality*, 6.

13. Illich, *Tools for Conviviality*, 6–7.

14. Illich, *Tools for Conviviality*, 8.

15. Illich, *Tools for Conviviality*, 8.

16. Illich, *Tools for Conviviality*, 52.

17. Illich, *Tools for Conviviality*, 82.

18. Illich, *Tools for Conviviality*, 52.

19. Ivan Illich, "To Honor Jacques Ellul," November 13, 1993, 3: https://www.davidtinapple.com/illich/1993_honor_ellul.PDF.

20. Ellul, *The Technological Society*, 42.

21. Illich, *Tools for Conviviality*, 83.

22. Illich, *Tools for Conviviality*, 14.

23. Herbert Marcuse, *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*, 2nd ed. (Boston, MA: Beacon Press, 1964), 235.

24. Marcuse, *One-Dimensional Man*, 235.

25. Illich, *Tools for Conviviality*, 4.

26. Illich, *Tools for Conviviality*, 4.

27. Illich, "To Honor Jacques Ellul."

28. Illich, *Tools for Conviviality*, 66.

29. Illich, *Tools for Conviviality*, 14–15.

30. Illich, *Tools for Conviviality*, 103.

31. Illich, *Tools for Conviviality*, 75.

32. Illich, *Tools for Conviviality*, 14.

33. Illich, *Tools for Conviviality*, 79.

34. Illich, *Tools for Conviviality*, x.

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12

Genetic Enhancement in Light of Christian Theology

Isabel Woodruff, MA | Guest Contributor

Introduction

In 1977, Isaac Asimov stated that “the advance of genetic engineering makes it quite conceivable that we will begin to design our own evolutionary progress.”¹ His prediction remains prescient today. With rapid advancements in science, society has begun to delve into technologies that could redefine what it means to be human. Developments in artificial intelligence and nanotechnology offer the possibility of altering humanity as we know it and of going “full cyborg.”² New progress in CRISPR/Cas9 has allowed scientists such as He Jiankui of Shenzhen, China to genetically enhance embryos with HIV resistance during IVF. These technologies create vast possibilities for the future, some beneficial and others extremely harmful. Many of these technologies have allowed the genetic manipulation of human DNA, such as through genetic engineering, and have consequently sparked serious ethical debates.

Broadly speaking, genetic engineering involves the intentional alteration or manipulation of genetic material within an organism through the use of DNA technology. Genetic engineering has produced beneficial gains in many areas of medicine and scientific research, such as pharmaceuticals and agriculture.³ Disease-resistant plants and the mass production of insulin are just two of these important benefits. Within the realm of genetic engineering lies human genetic enhancement (GE): the use of technology and science to genetically improve human functioning, capabilities, and performances beyond the normal workings of the human body.⁴ While genetic engineering has been advantageous to society, GE brings about many ethical concerns as its sole purpose is permanent human transformation beyond the norm.

It is important to note that within human genetic engineering, varying types of alterations affect different cell lines in the body. Somatic gene therapy, for example, seeks to

alter genes within somatic cells to correct genetic defects and restore normal bodily functions, thus preventing or curing genetic diseases such as cystic fibrosis and certain cancers.⁵ Somatic cells include any cell of an organism other than the reproductive cells. As a result, these somatic gene therapies affect only the patient being treated and do not pass any genetic changes to future generations. GE, on the other hand, aims to modify genes within the germline and enhance the capabilities of an individual beyond what is normal or humanly possible.⁶ Germline alterations occur within the DNA of gametes or reproductive cells and could potentially be passed from generation to generation with unknown side effects. Given this distinction, how should society approach GE and the intent of permanent human germline alteration?

In response to the growing field of genetic technologies, Nigel Cameron suggests that we must view these rapidly advancing technologies such as GE with the mindset of “a tradition of healing” when considering their morality.⁷ GE wanders far beyond the realm of healing, delving into transhumanist goals

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of recreating a utopian, everlasting human race. This article aims to evaluate the ethics of GE through an evaluation of three scholarly writers' perspectives on the topic: Julian Savulescu, John Harris, and Brent Waters. The subsequent section will outline a Christian analysis of GE in light of the Creation, Fall, and Redemption of man. In summary, this article will argue that GE is not appropriate for permanent human alteration as man's identity is not found in his individual traits and characteristics alone, but rather is found in Christ.

Julian Savulescu

Julian Savulescu, Director and Professor at the Oxford Uehiro Centre for Practical Ethics, avidly advocates for GE. He goes so far as to claim that society possesses a moral imperative to improve future generations through GE by bettering individual traits and capacities of humanity.⁸ These traits and capacities include fairness, responsibility, empathy, and physical and cognitive abilities. Savulescu argues that improving these traits and capacities subsequently improves one's quality of life and personal autonomy.⁹ However, the goal here is not to temporarily modify humanity, but to permanently alter human life. In the same vein, Resnik and Vorhaus state that "the *sine qua non* of genetic modification is permanent genetic alteration: the intentional production of human offspring with artificially induced genetic changes."¹⁰ Savulescu believes that this improvement can be achieved through rapidly evolving technologies that will decrease imperfections, disease, and illness and increase intelligence, thereby increasing one's quality of life.¹¹ Unfortunately, according to Savulescu, little progress has been made due to society's fear of embracing these new technologies.¹²

Savulescu goes on to explain that some of these genetic technologies are not sufficient for permanent human alteration and therefore do not increase quality of life. He argues that current tools such as prenatal genetic testing (PGT) and genetic selection are insufficient for enhancement as they only identify single gene mutations, such as cystic fibrosis or muscular dystrophy, and often produce a subsequent abortion of the host.¹³ Since there is no actual healing of the embryo, the most common polygenetic diseases and traits, such as schizophrenia or intelligence, are unable to be enhanced by

PGT or genetic screening. Savulescu's solution to this so-called issue is to label genetic selection and PGT as outdated practices and substitute these technologies with GE.¹⁴ He goes on to proclaim that humans are imperfect, morally inept specimens harboring myriads of social, psychological, and genetic issues. By harnessing GE, the possibility of resolving these complex issues becomes more tangible, subsequently improving one's quality of life.

In response to Savulescu's praise of GE, one must ask, who defines the ultimate quality of life? History provides a plethora of examples of individuals, families, and even entire nations attempting to enhance the quality of life of its members, leading some to embrace eugenic practices such as selective breeding or forced sterilization. Each of these entities has varying notions of what improvement and enrichment truly means, as do



all humans. Because each human is vastly different from the other, with differing beliefs, goals, and mindsets, no meaning of one's quality of life is universal. Enhancing humanity's quality of life therefore becomes open-ended and unpredictable, ushering in more ethical and moral issues to address.

Savulescu also fails to consider the safety of GE. Despite the limited knowledge of GE's consequences, Savulescu adamantly claims that permanent genetic alteration will only result in positive outcomes for the human

race. This bold claim disregards the myriad of still unknown side effects of GE. For example, He Jiankui may have had a therapeutic intent when enhancing embryos with HIV resistance, but there is no guarantee that these embryos will not suffer future side effects of this genetic alteration. If future negative side effects do arise from GE, then one's quality of life may actually degrade as a result. It is severe speculation to assume that GE will only bring about enhanced quality of life with no ramifications or harm done to the individual.

In his article "Autonomy and Enhancement," Savulescu presents his second argument for GE, that of personal autonomy, a quality he believes is essential to the human race.¹⁵ He notes that underlying every variation of autonomy there are certain common features that assist individuals in making autonomous decisions such as cognitive functioning.¹⁶ As technology progresses, these cognitive functions could be greatly improved by GE, strengthening one's ability to make choices that accompany a self-governing, autonomous person. The first step in this process is to recognize logical competency, critical analysis, and comprehension as the building blocks of autonomous decision-making.¹⁷ Logical competency and critical analysis involve one's ability to reason, evaluate options, and weigh consequences, while comprehension refers to one's capacity to process, understand, and integrate basic intellectual concepts.¹⁸ These features promote thought processes that encourage autonomy. Not only that, but increased cognitive enhancements help breach many barriers to personal autonomy, such as psychological manipulation, paternalistic approaches by physicians, and discriminatory attitudes.¹⁹ To summarize Savulescu's thought, by increasing competency, critical analysis, and comprehension through GE, personal morals and belief systems are more strongly established, which further increases and cements individual autonomy.

Savulescu emphasizes that this improvement in cognitive functioning and thus one's future autonomy must take place on the embryonic level. Savulescu's principle of procreative beneficence states that parents have a moral obligation to select the child, out of all their possible children, who will be likely to lead the best life.²⁰ In this case, parents would select embryos found to have

genes correlated with greater intelligence, therefore providing that embryo an opportunity to be a fully functioning, autonomous member of society. He bolsters this argument with recent studies that claim to have made significant progress in identifying genes correlated with greater intelligence. Through increased intelligence, the child's ability to communicatively engage with the world is improved in ways that will foster his personal identity.²¹ By using skills of comprehension and analysis, children are able to gain information on the surrounding world and make informed, autonomous decisions.

Savulescu's embrace of personal autonomy is in direct conflict with his desire to genetically alter and enhance human embryos. In fact, genetically altering a human embryo expressly violates that individual's future autonomy. Although genetic manipulation may one day increase a child's cognitive ability or interpersonal skills, this genetic manipulation of an embryo destroys the child's opportunity to choose a truly "open future." This preemptive decision-making guarantees that when the child is an adult, certain options will already be closed to him, thus violating the possibility of full, autonomous decision-making by the child.²² To Savulescu this genetic alteration is just as acceptable as common parenting decisions, such as what the child will eat for dinner or what to wear to school. Yet his argument fails to acknowledge the permanent consequences that GE has on the child and belittles the impact of GE down to that of a common parenting decision. In addition, the question still remains as to who defines what the "best life" entails. Savulescu's procreative beneficence is ultimately an open-ended and subjective method of determining the worth of human life.

Not only does GE violate a child's future autonomy, GE also treats children as merely a means to an end, not as an end in themselves.²³ This treatment occurs when children are unable to provide input on the purpose of the imposed form of GE which subsequently inhibits the formation of the child's personal identity.²⁴ Because the child's natural identity is contrived solely by the parents while the child is still embryonic, the child's autonomy is stripped away. According to Rae and Cox in their book *Bioethics*, "autonomy literally means 'self-law' . . . and refers to the freedom that a

person has to order his or her life according to his or her own desires and values. It involves independence, self-reliance, and . . . the right to be left alone to pursue life as



one sees fit."²⁵ When looking at this definition, Savulescu could dare not claim that in his proffered scenarios, the child was truly given "the right to be left alone to pursue life as one sees fit," which is an essential aspect of full, personal autonomy.²⁶

John Harris

John Harris, British bioethicist and director of the Institute for Science and Innovation at the University of Manchester, also advocates for the use of GE. Harris is well known for his permissive and liberal approach to new biotechnology. In his book *Enhancing Evolution: The Ethical Case for Making Better People*, Harris introduces his personal definition of human enhancement and comments that "an enhancement is by definition an improvement on what went before."²⁷ Harris acknowledges that GE will not definitively provide benefit in every case but argues that even the notion of possible improvement through GE makes it good, morally permissible, and even obligatory. In fact, Harris finds it difficult to believe that others may question a complete acceptance of GE. He states, "whatever people say, no one, I believe, actually thinks that there is anything in principle wrong with the enhancement of human beings."²⁸

Harris begins his support of GE by claiming

that most individuals have already been enhanced in one way or another. For example, with the constant intake of information throughout the day, the brain is constantly changing. New connections form in the brain and lead to physical changes within its structure, almost certainly enhancing one's cognitive functioning. Even without direct exposure, individuals benefit from enhancing technologies every day such as through medical immunizations. If one has been immunized, he or she has been enhanced to reduce illness in the population. If one has not been immunized, he or she has benefited from herd immunity created by the enhancement of others.²⁹ Harris's point here is that enhancement is already common throughout society and nothing to be feared. He states, "enhancements are so obviously good for us that it is odd that the idea of enhancement has caused, and still occasions, so much suspicion, [and] fear."³⁰

By equating the natural development of the brain to the changes from intentional genetic alteration, Harris attempts to convey that GE is not the complex enigma that some assume it to be, but is rather a simple tool that should be utilized by everyone. However, Harris fails to address the issue of distributive justice when advocating for the widespread use of GE.³¹ In order for GE to become as common as the modern-day immunization, Harris must be able to ensure that access to GE is evenly dispersed among society in a way that is fair and just to all. Many genetic technologies are expensive and consequently not readily available to everyone. Only the wealthy would be able to afford such expensive technologies to the exclusion of others. This would further divide the classes of society by benefitting only the elite and harming the lower class.

Harris also supports GE by attempting to diminish the potential risks and consequences of its use. He states that opponents of GE insist "on rigorous risk assessment and on only proceeding, if in all the circumstances of the case, the risks are acceptable."³² However, according to Harris, poor outcomes are not restricted to new medical technologies such as GE but are a common feature of all human decision-making.³³ Risk is a potential with any decision, "whether it be sex, drugs, or rock-n-roll, eating fatty foods, road transport, or vaccination and gene therapy."³⁴ Inasmuch as the risks of GE

are unforeseeable they cannot be guarded against, just as with any other possible but unforeseeable consequence. Here, Harris is stating that individuals make “risky” decisions without qualms every day. Therefore, the risks associated with GE should not be prohibitive of its use.

Harris yet again attempts to discredit the angst regarding unforeseen consequences of GE by comparing the decision to eat fatty foods with that of permanent genetic alteration. While both actions may have poor outcomes, the ramification of GE are far greater than that of a simple food choice. It is imprudent to diminish the complexities of GE to such a simple statement. As previously discussed, germline GE affects not just the person who is making the decision but also the progeny of that person for generations. Any issues from germline genetic alterations could be passed down to those children. By comparing a decision that is potentially harmful to one person with a decision that is potentially harmful to many, Harris disregards key information that is essential to a full ethical analysis of GE.

Harris also addresses the opposing view that GE is unnatural, claiming that the “unnatural” is equal, or sometimes even better than the natural.³⁵ Millions of individuals die prematurely from illness and disease, natural aspects of life.³⁶ According to Harris, natural substances or natural therapies are only better than unnatural ones if the evidence supports such a conclusion. Accordingly, the option of GE should not be dismissed merely because it is deemed unnatural. He argues that individuals who fear the risks of GE fail to consider examples such as natural reproduction. Two-thirds of human embryos fail to develop successfully, and approximately 8 million children (6 percent of births worldwide) are born with a serious defect in their genetic composition.³⁷ Only if the natural can be proven to be safer, less ethically ambiguous, and more beneficial than the unnatural can it be considered a better option. However, in Harris’s opinion, this cannot be proven, and therefore the natural does not trump the unnatural.³⁸

Here, Harris fails to focus on the true issue at hand: the extent to which natural and unnatural methods should be used. There are beneficial treatments in both the natural and unnatural realms. Yet, the focus should not be on natural vs. the unnatural but

rather on what is morally acceptable within each realm. For example, administering a pill to a patient to control hypertension is vastly different than permanently altering his or her DNA through GE. Both fall within the realm of unnatural technologies, yet separate examinations of the diverse ethical implications of each treatment reveal that they cannot and should not be evaluated on the same scale.

Brent Waters

Brent Waters stands in stark opposition to the previously mentioned approaches to GE. Waters begins with a strong Christian foundation when discussing GE. In his article “Christian Ethics and Human Germ Line Genetic Modification,” Waters analyzes two theological themes that he believes to be essential in developing a clear theological interpretive lens for assessing the ethics of GE: the Incarnation and the Resurrection.³⁹

Waters argues that the act of Christ’s Incarnation—God becoming flesh and dwelling among humans—affirms that the human body is of high importance. Jesus overcame eternal death by rising bodily from the grave, which, according to Waters, emphasizes that Christ’s sacrifice on the cross should not be viewed as merely a means to rid one’s mortal body from the immortal soul but rather as a reassertion of the human body’s goodness and unity with the soul.⁴⁰ Waters also notes that the Incarnation does not necessarily eliminate all human suffering and mortality.⁴¹ The hypostatic union of Christ’s divine Person with an uncorrupted human body proves that although Christ was still deity, he was also fully man in order to reinforce the significance of mankind. An example of this reinforcement was Jesus’ healing ministry of the sick and debilitated on earth. The goal of Jesus’ healing ministry was not to perfect the temporal body, but rather to restore the sick and subsequently draw them towards the truth of the Gospel. In his article “The Future of the Human Species,” Waters states that when it comes down to it “the life and lives of God’s creatures, however vulnerable, fragile, and imperfect they might be, are nonetheless good precisely because they have been created and blessed by God.”⁴²

Next, Waters discusses the Resurrection, a theme that offers the hope humans so desperately need. Waters states that “the

resurrection should be understood as the centerpiece of the singular but tripartite culmination of the Incarnation.”⁴³ Jesus’ resurrection from the dead displays God’s vindication of Jesus’ ministry and life as fully human yet fully deity. The book of 1 Timothy states “beyond all question, the mystery from which true godliness springs is great: He appeared in the flesh, was vindicated by the Spirit, was seen by angels, was preached among the nations, was believed on in the world, was taken up in glory” (1 Tim 3:16, NIV). Waters believes that this vindication extends to all forms of God’s creation and produces a “created order” of things.⁴⁴ This created order shows that human lives should be focused on certain moral structures and relationships inherent to creation. These moral structures and relationships such as marriage or children provide life with a richness that supersedes the “bare minimum of natural necessity.”⁴⁵ According to Waters, in the end, it is these moral structures and creaturely finitude that are affirmed through the Incarnation and resurrection of Jesus Christ and that proponents of GE wish to eliminate.

If Christ was not raised, and if his story ended on the cross, human suffering would be an unanswerable and unsolvable quandary, offering no hope for man’s body or soul. The Resurrection offers a correct perspective for GE, and even more broadly, for medicine in general, when addressing human disease and suffering. Advancements in technology are gifts and should be utilized to improve human quality of life and alleviate suffering. However, when perfection or immortality are made to be one’s ultimate goal in life through technologies such as GE, the creature is served and worshiped rather than the Creator (Rom 1:25).

Throughout his works, Waters also addresses the proper way in which Christians must view the freedom of humanity to employ these technologies.⁴⁶ As Christians, yet still sinful creatures, we must acknowledge that our choices will always be limited and never perfected. We subsequently acknowledge that our efforts to perfect humanity through technologies such as GE will never reach the bodily perfection that will one day be attained through Christ. Waters argues that in fact, Christian freedom is not just a gift that allows humans to make decisions apart from others, but it is “a freedom that binds

us to others as dictated by the given finite and embodied necessities that all human creatures share.”⁴⁷ By continually choosing ethically ambiguous technologies that permanently modify the human being, humanity is willfully breaking the bond between the ill and the healthy. Therefore, according to Waters, to truly live out the freedom given by Christ, a Christian must refuse to participate in technologies such as GE.

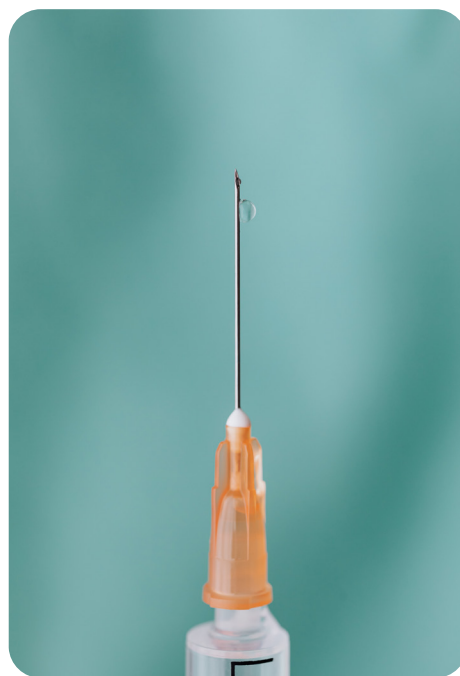
Christian Assessment

Genetic engineering and associated technologies have proven advantageous in diminishing the effects of sin brought into the world.⁴⁸ The ability to craft the intricate technologies of genetic engineering is only possible through the knowledge and wisdom given to man by God. While many Christians argue that these technologies are inherently immoral, others believe it is man’s responsibility to employ these technologies in order to decrease disease and illness. What exactly is needed to establish a balanced, Christian ethic of GE? In his chapter “Agape and Ethics,” Edmund Pellegrino states that “ethics as a reasoned discipline becomes insufficient to express the whole of the moral life without the Gospel [that] enables individuals to ‘make moral choices.’”⁴⁹ By establishing man’s God-given purpose on earth, the biblical narratives of Creation, Fall, and Redemption allow individuals to make strong, ethical choices regarding genetic engineering and more specifically GE. In his book *Foundations of Christian Bioethics*, Tristram Engelhardt highlights the need for these narratives when he states, “the Church . . . gives an account of the relation of man and woman which reaches from Eden and the Fall through redemption to the kingdom of heaven . . . a narrative into which all can find ultimate meaning.”⁵⁰

The Creation narrative begins in Genesis and states that “in the beginning, God created the heavens and the earth” (Gen 1:1, ESV). During this masterful creation process, God created light and darkness, evening and morning, land and water, heaven and earth, and all living creatures, all of which he deemed good. Although God marveled at his creation thus far, the pinnacle of creation was God’s formation of humanity in the *imago Dei*, or after his own image (Gen 1:27). This likeness endowed humans with a unique purpose: to cultivate and keep the earth. Christopher J. Wright claims “the

Bible states two fundamental things about us . . . (1) God made us in His image . . . and (2) God intended us to exercise dominion within creation.”⁵¹

God’s designated purpose for humanity is twofold. First, mankind was given the responsibility to have dominion over the earth (Gen 1:26–27). This rule does not imply a tyrannical abuse of God’s creation but implies a dominion of physical care that stems from a love and respect of all living creatures. Secondly, mankind was given the task to honor and glorify God in all aspects of life and to enjoy Him forever.⁵² This enjoyment implies a constant communion and relationship with God that glorifies Him. Paul’s first letter to the Corinthians states, “so, whether you eat or drink, or whatever



you do, do all to the glory of God” (1 Cor 10:31, ESV) The book of Colossians also magnifies the gift of salvation through Jesus’ death on the cross and man’s subsequent need to glorify God “in your body” for that wonderful gift (1 Cor 6:20, ESV).

In consideration of GE and the *imago Dei*, it is clear that humanity is not merely *tabula rasa*, waiting to be defined by its genome. Those who fully embrace GE, such as Savulescu and Harris, assume an evolutionary perspective of humanity known as reductionism. Reductionism explains complex life-science processes and phenomena in terms of the laws of physics and chemistry.⁵³ Application of reductionism attempts

to describe entire systems in terms of their individual, constituent parts and their interactions. From this viewpoint, human identity is merely a product of biology and can essentially be reinvented through human efforts. Through GE, humans can be analyzed in light of their component parts and subsequently pieced back together with modifications to produce a new and enhanced being. By reducing the human being to mere chemical compounds and stands of DNA, reductionism strips humanity of any inherent value. From the Creation narrative, it is clear that man’s inherent identity is not linked to his genetic or physiological characteristics but rather is found wholly in Christ (Gen 2:7). In his book *Dignity and Destiny*, Kilner argues “that image [of God] is the standard of what humanity should be, toward which people are being transformed.”⁵⁴ Unfortunately, GE directs mankind towards a transformation of supposed perfection, not towards a more fulfilled reflection of God’s image.

The intentions and goals of GE are not synchronous with the God-given purpose of man. The use of germline GE makes this readily apparent. According to Campbell and Walker, most GE, especially that of the germline, is for the purpose of human enhancement such as the optimization of attributes or capabilities. While others may argue that enhancement could advance the individual’s ability to fulfill the creation mandate, it must not be forgotten that God designed mankind with a predestined purpose and with the ability to carry out that purpose for his glory. Some may argue that GE could enable humans to better glorify God by heightening man’s capability. Although man’s capabilities might be heightened, it is an unfair assumption to claim that God created man as less than able to accomplish his intended purpose. Not only that, but mankind is directly assisted by God in accomplishing this purpose. The book of Philippians confirms that “it is God who works in you to will and to act in order to fulfill his good purpose” (Phil 2:13, NIV).

The Fall displays Adam and Eve’s blatant sin of disobedience within the Garden. Adam and Eve’s choice to sin set a new precedent: a life of immense suffering and pain as a consequence of their disobedience. Denise Alexander notes that “the doctrine of the Fall reminds us how far the world is from

what God intended. The entry of sin into the world has ensured that human earth-keeping will never be fully as God intended, at least not in this present evil age.”⁵⁵ Three blatant effects of the Fall are contained within Scripture. First, Adam and Eve were separated from direct communion with God (Gen 3:8–10). In the same way, so is man in his sin and depravity separated from God. This separation inhibits man’s ability to have God-like wisdom and to emulate his character in decision-making. The second effect of the Fall was death. The book of Romans declares that “the wages of sin is death” (Rom 6:23a, ESV). When Adam and Eve chose to create a gap between God and man through sin, severe consequences entered into the relationship such as disease, famine, murder, abuse, pain, and death. Michael Bird asserts that “sin (or evil) is obviously bad for humanity. It is dreadful for our well-being . . . sin deceives, entices, and enslaves. Sin is positively fatal for our relationship with God. Indeed, sin is our ‘enemy.’”⁵⁶ Through the entrance of sin, the perfection of man within the garden was forever marred, leaving humanity constantly striving after that lost perfection. Practically speaking, even with the most advanced GE technology, scientists may be able to mitigate common diseases, illnesses, or famine, but eradication of sin’s consequences is impossible.

The Fall reminds us that there is no human solution to the effects of sin within this

world. Savulescu and Harris hold on to the false hope that with the sanction of new technologies, humanity will eventually reach a form of perfection. However, is it not logical to assume that once relevant issues have been resolved, new issues will subsequently arise? Has science not assisted us in eradicating the paralyzing effects of polio, yet individuals today still face other daunting neurological diseases such as multiple sclerosis (MS) and amyotrophic lateral sclerosis (ALS)? This does not mean that all hope should be lost. Humans are still called to be stewards of God’s creation, knowing that there is only one source for the total eradication of disease and illness in this world: the Gospel of Jesus Christ. The second book of Timothy reiterates this fact and reads “Christ Jesus, who has destroyed death and has brought life and immortality to light through the Gospel” (2 Tim 1:10, NIV). As humanity attempts to heal and comfort the sick, suffering, and dying, Christians must be careful to fulfill the God-given Creation Mandate while avoiding the futile attempt to eliminate sin entirely. In response to the seemingly hopeless irreversibility of man’s sin, Wright proclaims “if there is good news for such dire realities, [it] is that the Bible gives us a gospel that addresses every dimension of the problem that sin has created. God’s mission is the final destruction of all that is evil from his whole creation.”⁵⁷ The gospel gives the entire world a solution

to the consequences of sin: the resurrection of Jesus Christ.

The narrative of Redemption is humanity’s greatest hope. The theme of God’s saving redemption is abundant throughout the Bible. In the Greek text, *redeemed* is “*lytrōsis*” and has a literal meaning of “a ransoming, deliverance,” or “a rescue.” The promise of redemption offers a paramount application towards GE. The promise of redemption makes clear that God is the only form of deliverance from the hardships and struggles of this life. Those who advocate for GE rely on the wisdom of man to better the human condition. In this way, man is the ultimate savior of himself. However, the only true source of man’s redemption is found within the covenantal relationship between the three distinct yet unified Persons of the Trinity. Jesus’ death on the cross was an offer of redemption for the most heinous of sinners. Applying Jesus’ redemption of mankind to the topic at hand, no matter the technology in question, whether simple restorative medicine or complex processes involved in GE, one should consistently remember that the human body is not to be the focus of earthly life. The marvelous truth of man as God’s image-bearer must remain at the forefront of both man’s spiritual and scientific mind, looking forward to that blessed hope when the body will finally be perfected in the New Jerusalem.

1. Isaac Asimov, *The Beginning and The End* (New York: Pocket Books, 1978), 182.
2. Zoltan Istvan, “Becoming Transhuman: The Complicated Future of Robot and Advanced Sapient Rights,” *Cato Unbound: A Journal of Debate*, April 16, 2018, <https://www.cato-unbound.org/2018/04/13/zoltan-istvan/becoming-transhuman-complicated-future-robot-advanced-sapient-rights>.
3. National Research Council (US) Committee on Identifying and Assessing Unintended Effects of Genetically Engineered Foods on Human Health, “Methods and Mechanisms for Genetic Manipulation of Plants, Animals, and Microorganisms,” in *Safety of Genetically Engineered Foods: Approaches to Assessing Unintended Health Effects*, Institute of Medicine and National Research Council (Washington, D.C.: The National Academies Press, 2004), 1.
4. Christopher Bechtel and Calum MacKellar, *The Ethics of the New Eugenics* (New York: Berghahn Books, 2014).
5. Center for Health Ethics, “Gene Therapy and Genetic Engineering,” University of Missouri School of Medicine, accessed January 11, 2022, <https://medicine.missouri.edu/centers-institutes-labs/health-ethics/faq/gene-therapy>.
6. Center for Health Ethics, “Gene Therapy and Genetic Engineering.”
7. Nigel M. de S. Cameron, *The New Medicine: Life and Death after Hippocrates* (London: The Bioethics Press, 2001), 129.
8. Julian Savulescu and William Isdale, “Speaking With: Julian Savulescu on the Ethics of Genetic Modification in Humans,” *The Conversation*, July 16, 2017, <https://bioethics.georgetown.edu/2017/07/speaking-with-julian-savulescu-on-the-ethics-of-genetic-modification-in-humans/>.
9. Julian Savulescu, Anders Sandberg, and Guy Kahane, “Well-Being and Enhancement,” in *Enhancing Human Capacities*, ed. Julian Savulescu, Ruud ter Meulen, and Guy Kahane (Malden, MA: Wiley-Blackwell, 2011), 3–18.
10. David B Resnik and Daniel B Vorhaus, “Genetic Modification and Genetic Determinism,” *Philosophy, Ethics, and Humanities in Medicine* 1, no. 1 (2006): 1–11, <https://doi.org/10.1186/1747-5341-1-9>.
11. Savulescu, Sandberg, and Kahane, “Well-Being and Enhancement.”
12. Savulescu, Sandberg, and Kahane, “Well-Being and Enhancement.”
13. Julian Savulescu et al., “The Moral Imperative to Continue Gene Editing Research on Human Embryos,” *Protein & Cell* 6, no. 7 (2015): 476, <https://dx.doi.org/10.1007%2Fs13238-015-0184-y>.
14. Savulescu et al., “The Moral Imperative to Continue Gene Editing Research on Human Embryos.”
15. G. Owen Schaefer, Julian Savulescu, and Guy Kahane, “Autonomy and Enhancement,” *Neuroethics* 7, no. 2 (2013): 123–36, <https://doi.org/10.1007/s12152-013-9189-5>.
16. Schaefer, Savulescu, and Kahane, “Autonomy and Enhancement,” 128–30.
17. Schaefer, Savulescu, and Kahane, “Autonomy and Enhancement,” 123.
18. Schaefer, Savulescu, and Kahane, “Autonomy and Enhancement,” 126.
19. Schaefer, Savulescu, and Kahane, “Autonomy and Enhancement,” 127.
20. Julian Savulescu, “Procreative Beneficence: Why We Should Select the Best Children,” *Bioethics* 15, no. 5–6 (2001): 413–26, <https://doi.org/10.1111/1467-8519.00251>.
21. Schaefer, Savulescu, and Kahane, “Autonomy and Enhancement,” 133.
22. Dena S. Davis, “Genetic Dilemmas and the Child’s Right to an Open Future,” *The Hastings Center Report* 27, no. 2 (1997): 561, <https://doi.org/10.2307/3527620>.
23. Jürgen Habermas, *The Future of Human Nature* (Cambridge, UK: Polity, 2016), 54.
24. Habermas, *The Future of Human Nature*.
25. Scott B. Rae and Paul Cox, *Bioethics: A Christian Approach in a Pluralistic Age* (Grand Rapids, MI: Eerdmans, 1999), 199.
26. Rae and Cox, *Bioethics*, 199.
27. John Harris, *Enhancing Evolution: The Ethical Case for Making Better People* (Princeton, NJ: Princeton University Press, 2010), 9.
28. Harris, *Enhancing Evolution*, 8.

29. Harris, *Enhancing Evolution*, 8.
30. Harris, *Enhancing Evolution*, 132.
31. Keith A. Bauer, "Transhumanism and Its Critics: Five Arguments against a Posthuman Future," in *Ethical Impact of Technological Advancements and Applications in Society*, ed. Rocci Luppigini (IGI Global, 2012), 237.
32. Bauer, "Transhumanism and Its Critics," 237.
33. Bauer, "Transhumanism and Its Critics," 237.
34. Bauer, "Transhumanism and Its Critics," 34.
35. John Harris, "Pro and Con: Should Gene Editing Be Performed on Human Embryos?" *National Geographic*, October 19, 2017, <https://www.nationalgeographic.com/magazine/article/human-gene-editing-pro-con-opinions>.
36. Harris, "Pro and Con."
37. Harris, "Pro and Con."
38. Harris, "Pro and Con."
39. Brent Waters, "Christian Ethics and Human Germ Line Genetic Modification," *Christian Bioethics* 18, no. 2 (2012): <https://doi.org/10.1093/cb/cbs014>.
40. Brent Waters, "Man Reconstructed: Humanity Beyond Biology," *Concordia Theological Quarterly* 77, no. 3 (2013).
41. Waters, "Man Reconstructed."
42. Brent Waters, "The Future of the Human Species," *Ethics & Medicine* 25, no. 3 (2009): 171–2.
43. Waters, "Christian Ethics and Human Germ Line Genetic Modification," 174.
44. Waters, "The Future of the Human Species", 172.
45. Waters, "The Future of the Human Species", 172.
46. Brent Waters, "Freedom in Responsibility: A Response," *Christian Bioethics* 11, no. 2 (2005): 171, <https://doi.org/10.1080/13803600500203863>.
47. Waters, "Freedom in Responsibility," 171.
48. Scott Rae and Joy Riley, "Prenatal Genetic Testing," in *Outside the Womb* (Chicago, IL: Moody Publishers, 2011).
49. Edmund D. Pellegrino, *The Philosophy of Medicine Reborn* (Notre Dame, IN: University of Notre Dame Press, 2008), 352–53.
50. H. Tristram Engelhardt, *Foundations of Christian Bioethics* (Exton, PA: Swets and Zeitlinger, 2000), 6.
51. Christopher J. Wright, "People Who Care for Creation," in *The Mission of God's People: A Biblical Theology of the Church's Mission* (Grand Rapids, MI: Zondervan, 2010), 50.
52. *The Westminster Shorter Catechism* (Philadelphia, PA: Presbyterian Publication Committee, 1854), 1.
53. *Merriam-Webster.com Dictionary*, s.v. "Reductionism," accessed August 7, 2018, <https://www.merriam-webster.com/dictionary/reductionism>.
54. John F. Kilner, *Dignity and Destiny Humanity in the Image of God* (Grand Rapids, MI: Eerdmans, 2015), 62.
55. Denis R. Alexander, "Genetic Engineering: Exploring Its Role in God's World," *Cambridge Papers* 6, no. 2 (1997): 2, <https://www.jubilee-centre.org/cambridge-papers/genetic-engineering-exploring-its-role-in-gods-world-by-denis-r-alexander>.
56. Michael F. Bird, "Sons and Daughters of the King," in *Evangelical Theology: A Biblical and Systematic Introduction* (Grand Rapids, MI: Zondervan, 2013), 671.
57. Christopher J. Wright, *The Mission of God's People: A Biblical Theology of the Church's Mission* (Grand Rapids, MI: Zondervan, 2010), 41.

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2021 Conference Recap

Bryan Just, MA | Event and Executive Services Manager

After a year of lockdowns and Covid restrictions, it was hoped that CBHD could host its 2021 conference in person. However, due to continued uncertainty regarding pandemic issues and Illinois' reopening schedule, the Center's leadership made the difficult decision to once again host its annual conference online. An additional year taught everyone a lot about how to make the most of a virtual event, and we at the Center are grateful to all those—speakers and participants—who worked with us to make this conference a success.

The theme of our 28th annual conference, Bioethics & the Body, made the online shift feel particularly ironic. How does one talk about the importance of the body, embodiment, and physical presence over a virtual platform? While this unusual situation was acknowledged by Matthew Eppinette in his opening address, in some ways it also helped to underscore the conference's importance: being physically separated highlighted just how much we need human interaction.¹

The opening plenary of the evening was given by Eric Targe, a pastor to those with disabilities, on the topic of "Christ's "Disabled" Body: How the Risen & Perforated Jesus Speaks Life to Those with Disabilities." ² In his three-part talk, he set out to (1) acknowledge the church's failures to those with disabilities; (2) demonstrate how the risen and perforated Jesus exposes those failures, and (3) examine the way set forward by Christ to engage those with disabilities in and beyond the church.

He began with a history of disability and the "cult of normalcy" that has led to stigma against those with disabilities, including ways that this obsession with being "normal" has infiltrated the church and led to the marginalization of many within the disabled community. Sadly, too many churches forgo ministering to those in their midst with a disability, but instead push them away with the excuse of not being "equipped" to help. According to Targe, "We in the church are 'disabling' the body of Christ by dismembering the church through our exclusion of

those with disabilities." Instead, we should recognize that each member of the church is a part of the body of Christ; there are no extraneous members, even if they have a disability.

To counter this exclusion, Targe points to Jesus: "The body of the risen and perforated Jesus should challenge our concepts of wholeness and healing and our values of consumerism and radical autonomy." In his resurrection, Jesus continued to bear the marks of his crucifixion—the holes in his hands, feet, and side—and these did not diminish him in any way. Again, according to Targe, "The Jesus who suffered and died and was alive again was whole, even if he had holes. The markings of his suffering were not discarded as meaningless when he was resurrected."

This recognition—that "Jesus ascended holy, holey, wholly" and that "his sainthood, his beauty, his holiness is in no way tarnished by his having holes"—should challenge how we view discipleship. Most churches put a strong emphasis on the intellectual in discipleship; while this is appropriate, it tends to exclude those with disabilities. But, when we view discipleship through the lens

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of disability, we are reminded that we are called to love the Lord with our all our heart and all our soul, not just all our mind. This means opening ourselves and our churches to those whose path of discipleship might be very different from our own, and letting them teach us even as we minister to them.

Targe's address was followed by Beth Felker Jones on the topic of "Spiritual Bodies: How Christian Theology Helps Us Understand the Relationship between the Body and the Spiritual Life."³ She contends that "God's good intentions for us as human beings always include our embodiment. There is no spiritual life and no relationship with God without the body."

Felker Jones begins by affirming the goodness of our being created as physical beings: "God made the body, God loves the body, God has good creative and redemptive intentions for the body," and contends that this is the clear teaching of Scripture that has been held throughout church history. Yes, we are fallen and affected by sin, but that does not negate the goodness and importance of the body.

On opposite poles from this orthodox belief are the errors of Gnosticism and materialism. Gnostics, ancient and contemporary, see the physical as less than the spiritual, if not outright evil. On the other pole is materialism, which denies the spiritual and reduces all to the physical. Felker Jones rejects both hierarchical dualism and reductive materialism and affirms that we are creatures both physical and spiritual, equally united, who are to "relish creation's goodness." The body is neither an obstacle

to spiritual life nor all that exists of us. Both body and soul are important for our spiritual life. "A Christian recognition that both body and soul matter will insist that we are embodied moral creatures and that what we do in the body has meaning in its relationship to God and in our human relationships with one another."

Felker Jones then overviews the doctrines of the incarnation and the resurrection to demonstrate that Jesus came a full human being, experiencing all that it means to be embodied. "Jesus, in becoming one of us, confirms that truth of the doctrine of creation: that we are God's good work, that God considers us worth saving." Jesus did not just inhabit a human body until his death; he was raised with it as well. The Bible teaches that, in the same way, we will be given resurrected bodies—transformed and redeemed, yes, but still in continuity with the bodies we now possess. Nowhere in Scripture does it say our resurrection hope is to abandon the body and live a spiritual existence. Rather, "the difference between present and future is not a difference between materiality and immateriality; the difference is between bodies ruled by sin and death and bodies freed from the power of sin and death through the Holy Spirit."

Her presentation ends with several implications of this belief for our discipleship, our spiritual lives, and our vocation. If we are to glorify God with our bodies, this must encompass every part of our physicality. We cannot separate spirituality from the body: "Christian spirituality is not about rejecting bodies; it is about the Holy Spirit who is God, the Lord, the giver of life." Our hope

is in Christ and his resurrection. This resurrection hope gives us "reason and power" to live out our Christian life and be steadfast in our faith.

The conference's second day began with a presentation by Kimbell Kornu entitled "Dissecting the Patient Body: Tracing the Origins of How Medicine Reduces Patients into Objects."⁴ He begins with a question: "Why does modern medicine reduce patients into objects to be dissected rather than persons to be treated?" He believes the answer comes from the "logic of dissection," the origins of which go back to Hippocrates. Hippocrates describes an antagonistic relationship between humans and nature, such that physicians must "coerce" nature to reveal the secrets of illness afflicting the patient. Francis Bacon uses similar language of "violence, constraint, and torture" to describe his experimental method. In the west, dissection became the ultimate means by which we could coerce the body to surrender its secrets, and Kornu traces this through the history of medicine.

He then argues that modern medical training places great emphasis on the anatomy lab and dissection. When this is done,

the cadaver becomes a model for anatomy. The anonymous cadaver as object now can be named with anatomical jargon . . . The cadaver can be manipulated and cut, even destroyed. But in this modern context, knowledge of the body, gained through, at times, violent procedures . . . confers technical power over the body, thereby shaping physicians as the new high priests over life and death. This is the unspoken, surreptitious formation of the anatomy lab.

28TH ANNUAL CONFERENCE

Bioethics
& the Body

JUNE 24–26, 2021

THE CENTER FOR
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PROMOTING INTEGRAL BIOETHICS



He goes on to argue that “through the formative practices and rituals of anatomical dissection in the modern medical school, physicians-in-training are formed to construct the human body as a medical object, and trained in their own bodies to see with the logic of dissection.”

Unfortunately, this reductionist way of viewing the human body is carried over in clinical practice, as physicians reduce their patients to mere bodies to be manipulated. To combat this “metaphysically violent gaze of medicine,” Christian physicians must turn to the incarnation and its affirmation of “the central wonder of embodied life.” Kornu closes with a meditation on the simple power of touch to connect us to this embodiment and counteract the reductionism and dehumanization of the medical gaze: “In attempting to comfort my patient through touch, I am also touched. The simple incarnational ritual of touching hands can mediate the divine and human, providing a glimpse of grace and glory.”

Friday’s afternoon session was a panel discussion dealing with maternal, fetal, and embryonic bodies.⁵ The discussion began with Matthew Eppinette introducing the topic and some of the background behind the title “Whose Body? Which Diagnosis?” and discussing how the issues of how we view the body relate to commercial surrogacy. Donna Harrison then spoke about prenatal genetic testing. She covered issues of false negatives and positives, and the difference between screening and diagnostic tests. She then considered several reasons for performing prenatal tests and who they might be helping—the unborn child, the mother, insurance companies or other third parties, or even society in general. Unfortunately, many doctors use the test results to dehumanize children with illness and pressure parents into aborting the child or forgoing treatment.

Harrison’s talk was followed by Peter Smith, who spoke of the troubling fact that many physicians have not kept up with the science around Down syndrome. While the common perception is that children with Down’s syndrome specifically are doomed to short, unfulfilling lives while putting enormous strain on their families, Smith argues that this is simply no longer the case. The majority of children with Down syndrome experience long and fulfilling lives and in most cases integrate well with their families.

Why are so many doctors uninformed on these issues? Smith posits a few reasons. For one, intellectual disabilities seem to be in a category that doctors are, in general, very uncomfortable with, as opposed to strictly physical disabilities. He also looks at issues of funding shows that compared to other conditions such as autism or cystic fibrosis, Down syndrome research receives significantly less support. Finally, intellectual disability is not deeply covered in many medical programs; Smith recounts that often he will only see students for a half day of instruction in their entire medical training. Ultimately, he desires to see a shift where doctors, prospective parents, and society at large recognize the great gains made in Down syndrome research and value those with the condition as much as any other.

The final day of the conference opened with Jeffrey Bishop’s presentation “Building Better Brains? Anthropology, Ethics, and the Posthuman Future.”⁶ Some have argued that, because society is advancing technologically at a greater rate than we are enhancing morally, we have a moral imperative to bioenhance ourselves to increase our morality. Rather than do a “typical” moral assessment of biotechnological enhancement, Bishop tries “to get to the heart of the relationship of technology to anthropology, or rather the way that our anthropologies shape our technologies, and our technologies shape our anthropologies in a circular game.” To do this, he shows that those who support moral bioenhancement rely on overly simplistic Enlightenment anthropologies, and that Christians must develop a more sophisticated understanding.

Bishop argues that western thinking regarding machines and technology has largely concluded that they do not act, but can only be acted upon by humans. In other words, we shape machines, but not the other way around. However, using several different examples, Bishop shows that “there is a reciprocal relationship between the technological things that we create: humans create the machines, the machines create the imaginations and desires of the humans, who in turn create more devices.” Human moral thinking, then, does not exist in a vacuum, but is influenced by the technologies we develop and use.

Since we tend to think of the human brain as a kind of machine, we apply the same thinking to it as we do to all other

machines—given our post-Enlightenment ideals, all machines, the brain included, can, and should, be upgraded as much as possible. Thus, for those who see a moral imperative to bioenhance, their thinking about machines now dictates what humans should (or should strive to) be. As Bishop concludes, “we become what we already think we are, or perhaps better, we become what and how we think about ourselves with our tools and devices.” For those trying to build a more “moral” brain, they ultimately strive to create “a utility maximizing being, a self-created god of our own making.”

This presentation was followed by D. Christopher Ralston’s talk on “Disability, Identity, and Bioethics.”⁷ Ralston, speaking from his perspective as someone born with chronic physical disabilities, reviews the expressivist argument against abortion following a prenatal diagnosis of disability, and the way that this is not just morally problematic, but deeply offensive to those living with a disability. He presents four models for understanding the relationship between disability and identity—moral, medical, social, and interactionist—and argues for the interactionist model: “People with disabilities do not experience disability in isolation from others . . . disability is, in a very real sense, a matter of the individual plus society.”

Ralston defines identity as “that which makes one who one is; i.e., those traits and characteristics that define or constitute an individual person at least in part.” Arguing from a Christian position, he grounds human dignity, value, in worth in the immutable *imago Dei* and not “physical, mental, or other structures or capacities that we actualize or exercise at any point in time.” Human identity is found in our createdness. With this understanding, he argues that “disability can never exhaust who a person is. Disability enters into and partially constitutes a person’s identity but can never fully constitute it.”

Ralston next explores the implications for this understanding of identity on bioethics, specifically whether it would be moral to genetically modify embryos such that they would be born without a disability. While not dealing with the ethics specifically, he warns against the blanket assumption that those with a disability would want a “cure” for their condition: “if disability is partly, though not entirely, constitutive of one’s identity, then it is entirely rational to view

the attempt to eliminate certain disabling traits . . . as being an attack on one's self." Thus, he anticipates that many with disabilities would resist any genetic interventions, whether on themselves or future children, and reminds us that "what is needed more than 'healing' or 'relief' or 'freedom' from the supposed burden of disability is friendship, relationship, and community."

Ralston ends with some personal reflections on living with a physical disability and the ways in which that has both become a part of him and yet is only a part of who he is. Ultimately, he seeks to allow his disability to deepen his relationship with God as he depends on the Lord for his strength and is reminded about who God is and how he has been created by him.

For the final plenary of the conference, O. Carter Snead presented a talk based on his recent book *What It Means to Be Human: The Case for the Body in Public Bioethics*.⁸ He begins with two main claims. The first is methodological, and is that "the richest and most potent method of analyzing matters of public bioethics is an inductive anthropological inquiry: What is the vision of human identity and flourishing that anchors and animates the law and policy?" His second claim is substantive: "A dominant anthropology in the vital conflicts of American public bioethics closely resembles what has been termed expressive individualism. It is a vision that cannot and does not make sense of the lived reality of human embodiment (e.g., vulnerability, reciprocal dependence, and natural limits), and is thus not a fit foundation for public bioethics."

In fleshing out these claims, Snead asserts that the law's purpose is to protect and promote the flourishing of humans. For this to happen, there must be some kind of human anthropology upon which the law is based. In America, that anthropological foundation is expressive individualism, an enlightenment ideal of the person as an "isolated, unencumbered, 'atomized' individual self, shorn and abstracted from all constitutive attachments—from family, from tradition, from religion. . . . this self is defined by its will, or its capacity to choose." This is a dualistic account of human beings that separates mind and body, giving preference to the mind over the body. For the expressive individualist, nothing external to the mind can be normative, only the "unique and original 'inner voice' is definitive." There are no "unchosen" obligations or attachments; friends and even familial relationships are "instrumental and transactional." In this framework autonomy takes precedence over all other goods, and injustice is anything that constrains one's individual freedom to choose.

This vision of the person is, according to Snead, "forgetful of the body" and represents a romantic ideal rather than reality. We are all born in total dependence upon others, will exist in varying states of dependence throughout our life, and for most become more and more radically dependent on others as we age. We are more than disembodied wills; we are embodied creatures, an integration of body and mind. We are mutually dependent, vulnerable, and subject to natural limits. Thus, Snead identifies humanity's fundamental need as

participating in "networks of unconditional and uncalculated giving and receiving." We must strive to look for the goods of others, not just ourselves, and develop the virtues of "acknowledged dependence." On the giving side, these include just generosity (giving to others in proportion to their needs), hospitality (welcoming the stranger for their own sake), and misericordia (making the suffering of another your own and comforting them in their time of need). On the receiving side, these virtues include gratitude, humility, "openness to the unbidden," solidarity, dignity, truthfulness, and friendship. These virtues represent a more humane vision of human flourishing than expressive individualism and thus a more appropriate foundation for our laws and policies.

In addition to these plenary sessions, numerous paper sessions and workshops explored emerging and longstanding issues in bioethics. And, due to the online format, participants were able to later view all sessions on demand for the first time in conference history. We are so grateful for all those who transitioned online with us to make this conference a success!

CBHD's upcoming conference will be Integrity and Conscience: Bioethics and the Professions, held June 23–25, 2022. After two years of virtual conferences, we are looking forward to once again meeting in person! Speakers include Jeffrey Barrows, Bart Cusveller, Ana Iltis, Lauris Kaldjian, Ekaterina Lomperis, Allen Roberts, Kathy Schoonover-Shoffner, and Richard Zimmerman. We hope to see you there!

1. F. Matthew Eppinette, "Bioethics & the Body: Framing the Discussion" (opening address, The Center for Bioethics & Human Dignity's 2021 Annual Conference, *Bioethics & the Body*, Deerfield, IL, June 24, 2021).
2. Eric Targe, "Christ's 'Disabled' Body: How the Risen & Perforated Jesus Speaks Life to Those with Disabilities" (plenary address, *Bioethics & the Body*, June 24, 2021).
3. Beth Felker Jones, "Spiritual Bodies: How Christian Theology Helps Us Understand the Relationship between the Body and the Spiritual Life" (plenary address, *Bioethics & the Body*, June 24, 2021).
4. Kimbell Kornu, "Dissecting the Patient Body: Tracing the Origins of how Medicine Reduces Patients into Objects" (plenary address, *Bioethics & the Body*, June 25, 2021).
5. F. Matthew Eppinette, Donna J. Harrison, and Peter J. Smith, "Whose Body? Which Diagnosis? Maternal, Fetal, and Embryonic Bodies" (panel discussion, *Bioethics & the Body*, June 25, 2021).
6. Jeffrey Bishop, "Building Better Brains? Anthropology, Ethics, and the Posthuman Future" (plenary address, *Bioethics & the Body*, June 26, 2021).
7. D. Christopher Ralston, "Disability, Identity, and Bioethics" (plenary address, *Bioethics & the Body*, June 26, 2021).
8. O. Carter Snead, "Bioethics & the Body: Reframing the Discussion" (plenary address, *Bioethics & the Body*, June 26, 2021).

TOP BIOETHICS NEWS STORIES: JUNE 2021 - NOVEMBER 2021

Heather Zeiger, MS, MA | CBHD Research Analyst

“FDA Faces Critical Test with Alzheimer’s Drug Decision” by Bob Herman, *Axios*, June 4, 2021

The FDA will soon decide the fate of Biogen’s experimental Alzheimer’s drug. But there is one glaring issue—there is no conclusive evidence the drug effectively treats the crippling neurological disease. **Why it matters:** This will be one of the FDA’s most important decisions in years. The outcome will show whether the federal agency sides with the overwhelming scientific consensus that the drug isn’t proven to work, or with an industry and a patient population desperate for anything to be approved. (<https://tinyurl.com/bdemf575>)



“Newly Disclosed FDA Documents Reveal Agency’s Unprecedented Path to Approving Aduhelm” by Matthew Herper, Damian Garde, and Adam Feuerstein, *STAT News*, June 22, 2021

The document dump follows weeks of bracing criticism of the FDA, which departed from regulatory precedent to approve Biogen’s treatment. Instead of judging Aduhelm based on its effect on the progression of Alzheimer’s, for which the evidence is debatable, the agency approved the drug based on its ability to remove brain plaques called beta-amyloid, which are believed to contribute to the disease. (<https://tinyurl.com/346pymyz>)

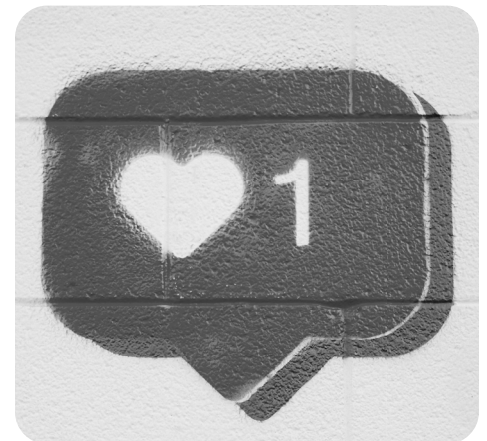
The U.S. FDA broke precedent and its own standards for approving Alzheimer’s drug candidates by going against the near-unanimous recommendations of an independent advisory committee and approving Biogen’s aducanumab (trade name: Aduhelm). Usually, drugs that are fast tracked for approval have not undergone Phase 3 clinical trials, but aducanumab has, and, importantly, it failed to show efficacy in one of two Phase 3 trials. The other trial showed that the drug decreased beta-amyloid plaque in the brain, but it did not show a notable difference in the progression of Alzheimer’s disease. The drug is priced at \$56,000 per year. The FDA panel may have approved the drug in hopes that it spurs more research into antibody therapies for Alzheimer’s, and some panel members may have had ties with Biogen.



“Facebook Knows Instagram Is Toxic for Teen Girls, Company Documents Show” by Georgia Wells, Jeff Horwitz, and Deepa Seetharaman, *The Wall Street Journal*, September 14, 2021

The Instagram documents form part of a trove of internal communications reviewed by the Journal, on areas including teen mental health, political discourse and human trafficking. They offer an unparalleled picture of how Facebook is acutely aware that the products and systems central to its business success routinely fail. The documents also show that Facebook has made minimal efforts to address these issues and plays them down in public. (<https://tinyurl.com/4wppskjt>)

Former Facebook employee Francis Haugen released thousands of pages of documents, first to *The Wall Street Journal*, and then to various other media outlets, showing that Facebook, Inc. (now Meta Inc.) knows Instagram contributes to poor mental health in teen girls. This is despite Zuckerberg’s testimony before Congress that the company did not find a clear correlation between teens and mental health. The company also knows, though it did not make public, that globally Facebook is used to incite violence and promote genocide. Facebook and Instagram have been a hub for human traffickers, and state actors have gamed the algorithms to manipulate public opinion through propaganda campaigns. This has spurred a bi-partisan Congressional investigation into the unethical business practices of Meta and other social media companies.



“Unprecedented Texas Abortion Ban Goes into Effect” by Oriana Gonzalez, *Axios*, September 1, 2021

A law that bans abortions after six weeks, including in cases of rape and incest, went into effect in Texas on Wednesday. **Why it matters:** The law, one of the most restrictive abortion bans in the U.S., prohibits the practice after a fetal heartbeat is detected—before many people know they are pregnant. It also incentivizes individuals to sue anyone suspected of helping a woman obtain an abortion—and awards at least \$10,000 to people who do so successfully. (<https://tinyurl.com/yjmhsu6m>)

A Texas law, S.B. 8, went into effect in September 2021 that bans most abortions after the detection of a heartbeat, or at about six weeks gestation. The Department of Justice asked the U.S. Supreme Court to temporarily block the law until oral arguments were heard by the Court. The Court ended up not blocking the law, but it did fast track the timeline to hear oral arguments. The Texas law is enforced via lawsuits brought by private citizens to anyone aiding and abetting an abortion. After hearing oral arguments, the Court left the Texas law in place but said abortion providers have a right to challenge the law in federal court. The Court also limited which state officials can be sued. The passage of this law was spearheaded by John Seago, Trinity alum (MA Bioethics '16) and legislative director of Texas Right to Life.¹



“Forensic Database Challenge over Ethics of DNA Holdings” by Quirin Schiermeier, *Nature*, June 15, 2021

The YHRD, which was first released online in 2000, is now widely used across the world to help solve sex crimes and settle paternity cases. Holding more than 300,000 anonymous Y-chromosome profiles, it shows how particular genetic markers are fingerprints of male lineages in more than 1,300 distinct global populations. It can point to the likely geographic origin of mystery males, as in the Kollum case, but is now more often relied on to calculate the weight of evidence against a male suspect whose Y-chromosome DNA profile matches traces found at a crime scene. (<https://tinyurl.com/2zvxyxswz>)

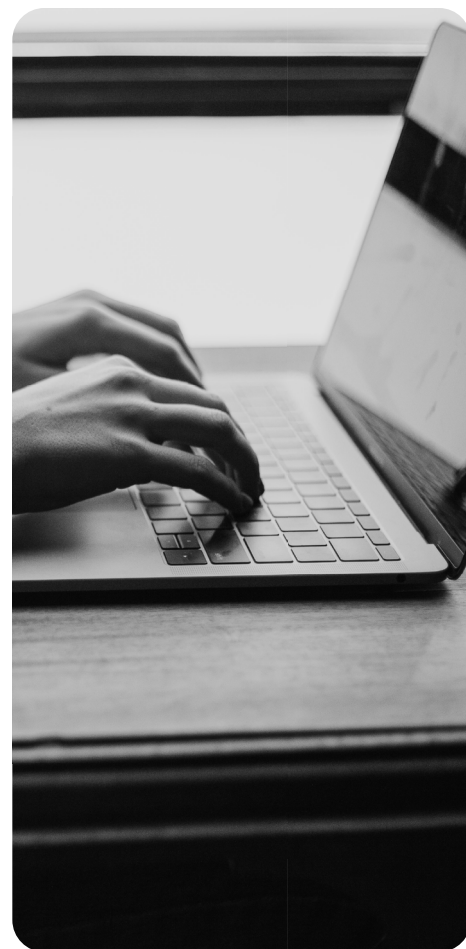
Several articles in 2021 pointed to the problems of genomic studies and DNA collection without proper consent, particularly when that data came from police crime scenes or suspects. Furthermore, large databases, such as the Y-Chromosome Haplotype Reference Database (YHRD), could potentially be used for ethnic profiling and surveillance. Several papers in top tier journals, such as *Nature*, have either retracted or flagged papers over concerns that the data used in the studies had ethical issues. *The Intercept* reported that 8 out of 24 board members at the journal *Molecular Genetics and Genomic Medicine* (Wiley) resigned after controversy over ethics concerns regarding genetics papers from China. Many of these papers have co-authors from the police or military.²



“China’s Gene Giant Harvests Data from Millions of Women” by Kirsty Needham and Clara Baldwin, *Reuters*, July 7, 2021

A Chinese gene company selling prenatal tests around the world developed them in collaboration with the country’s military and is using them to collect genetic data from millions of women for sweeping research on the traits of populations, a Reuters review of scientific papers and company statements found. (<https://tinyurl.com/2rm3bn54>)

Earlier in the year, *Reuters* reported that BGI Group’s prenatal screening test, one of the most popular in the world, collects women’s genetic and health information into a database that could be used for genetic technologies, surveillance, and profiling. Many women did not realize that their genetic data and their medical histories were being stored in a database and say that had they known, they would not have used the test. *The Wire China*, a subscription-only publication on China business, published a profile of BGI in March highlighting the company’s COVID-19 tests and its ties to the Chinese government and the People’s Liberation Army. BGI’s technology was instrumental in completing the Human Genome Project in 2001.³



“Drug Overdose Deaths, Fueled by Fentanyl, Hit Record High in U.S.” by Jon Kamp and Julie Wernau *Wall Street Journal*, November 17, 2021

The U.S. recorded its highest number of drug-overdose deaths in a 12-month period, surpassing 100,000 for the first time in the shadow of the coronavirus pandemic, according to the Centers for Disease Control and Prevention. There were an estimated 100,306 drug deaths in the 12 months running through April, the latest CDC data show. This marks a nearly 29% rise from the deaths recorded in the same period a year earlier, indicating the U.S. is heading for another full-year record after drug deaths soared during the Covid-19 pandemic. (<https://tinyurl.com/2b3sahbu>)

The U.S. has had an ongoing problem with drug overdose deaths due to opioids, which only became worse during the pandemic. In 2021 over 100,000 people died from drug overdoses, led by bootlegged fentanyl. New York approved a controversial solution to the overdose problem by authorizing supervised injection sites where people can bring their own drugs and use sterile syringes. The sites have personnel equipped with anti-overdose medication.⁴ Another solution that other states have tried is to restrict prescriptions for opioids. However, as *STAT News* reported in July 2021, a study in the *NEJM* found that 90% of the health systems surveyed gave Black patients fewer and less potent pills than white patients, further perpetuating health inequalities for pain management.⁵



“A Pivotal Mosquito Experiment Could Not Have Gone Better” by Ed Yong, *The Atlantic*, June 10, 2021

Dengue fever is caused by a virus that infects an estimated 390 million people every year, and kills about 25,000; the World Health Organization has described it as one of the top 10 threats to global health. It spreads through the bites of mosquitoes, particularly the species *Aedes aegypti*. Utarini and her colleagues have spent the past decade turning these insects from highways of dengue into cul-de-sacs. They've loaded the mosquitoes with a bacterium called *Wolbachia*, which prevents them from being infected by dengue viruses. (<https://tinyurl.com/bdenct3z>)



“In a Major Decision, WHO Recommends Broad Rollout of World's First Malaria Vaccine” by Helen Branswell *STAT News*, October 6, 2021

The World Health Organization, acting on the advice of its scientific advisers, announced Wednesday that it would recommend a broad rollout of a much-needed malaria vaccine, saying pilot testing had shown that it was safe and could be effectively deployed in remote and rural settings. The decision, which was announced by WHO Director-General Tedros Adhanom Ghebreyesus, marks a landmark moment in the fight against malaria, for which no other vaccines exist. (<https://tinyurl.com/mr4xst59>)

Mosquito-borne illnesses kill about half a million people per year, with close to 400,000 deaths due to malaria and 40,000 deaths due to dengue fever. Malaria is caused by a parasite that infects the mosquito, which is then spread to humans through a mosquito bite. Dengue is a viral infection also transmitted through mosquitoes. The vaccine for malaria, Mosquirix, is geared toward children under five years old, whose immune systems are less able to fight off a malarial infection. The vaccine does have some drawbacks, namely that it requires several doses and has an efficacy of 30% against severe malaria. Additionally, the vaccine prevents clinical malaria, but it does not prevent transmission from mosquito to human. Research involving genetically engineered mosquitoes showed that it stops the localized spread of dengue fever. The species of mosquito that carries the disease, *Aedes aegypti*, was infected with a parasite that prohibits the engineered mosquito from carrying the dengue virus. However, some question the consequences of releasing genetically engineered mosquitos into the wild.



1. Emma Green, “What Texas Abortion Foes Want Next,” *The Atlantic*, September 2, 2021, <https://www.theatlantic.com/politics/archive/2021/09/texas-abortion-ban-supreme-court/619953/>; “Bioethics Alum John Seago Fights for Pro-Life Legislation”, Trinity International University, November 13, 2021, <https://www.tiu.edu/news/archive/bioethics-alum-john-seago-fights-for-pro-life-legislation/>.
2. Mara Hvistendahl, “Mass Resignation at Scientific Journal over Ethically Fraught China Genetics Papers,” *The Intercept*, August 4, 2021, <https://theintercept.com/2021/08/04/dna-profiling-forensic-genetics-journal-resignations-china/>.
3. Brent Crane, “Jolly Gene Giant,” *The Wire China*, March 21, 2021, <https://www.thewirechina.com/2021/03/21/jolly-gene-giant/>.
4. Jennifer Peltz, “NYC Ok's Safe Sites for Drug Use, Aiming to Curb Overdoses,” *Associated Press*, November 30, 2021, <https://apnews.com/article/health-new-york-new-york-city-1f61d20529965ded7fef3fcee5f39d1e>.
5. Claudia Lopez Lloreda, “In the Same Health System, Black Patients Are Prescribed Fewer Opioids than White Patients,” *STAT News*, July 21, 2021, <https://www.statnews.com/2021/07/21/black-patients-prescribed-fewer-opioids-white-patients/>.

CORONAVIRUS TIMELINE: JUNE 2021—NOVEMBER 2021

Heather Zeiger, MS, MA | CBHD Research Analyst

JUNE 2021

June 3: “Alarm in Africa: Virus Surges, Vaccines Grind to ‘Near Halt’” (*Associated Press*)

June 7: “CDC: 2-Dose Vaccines Reduce COVID-19 Infection Risk by 91%, Limit Virus Spread” (*UPI*)

June 8: “U.S. Report Found It Plausible Covid-19 Leaked from Wuhan Lab” (*The Wall Street Journal*)

June 9: “Covid-19 Delta Variant First Found in India Is Quickly Spreading Across Globe” (*Wall Street Journal*)

June 11: “CDC Plans ‘Emergency Meeting’ on Rare Heart Inflammation Following COVID-19 Vaccines” (*CBS News*)

June 14: “Texas Hospital System Can Require Employees to Get Covid-19 Vaccine Judge Rules” (*The Wall Street Journal*)

June 16: “Regeneron Antibody Saves Lives in Some Hospitalized Covid Patients, Study Finds” (*STAT News*)

June 18: “What Happens Now That Emergency Orders Are Lifting” (*Axios*)

June 22: “South America Is Now Covid-19 Hot Spot, with Eight Times the World’s Death Rate” (*The Wall Street Journal*)

June 25: “The Pandemic Led to the Biggest Drop in U.S. Life Expectancy Since WWII, Study Finds” (*NPR*)

JULY 2021

July 2: “Covid-19 Vaccine Passport System Gets First Test in Europe” (*The Wall Street Journal*)

July 9: “Gene Hunters Turn Up New Clues to Help Explain Why Covid-19 Hits Some People So Hard” (*STAT News*)

July 12: “CDC and Pfizer at Odds Over Need for COVID-19 Booster Shots” (*Medscape*)

July 12: “New CDC School Guidance Calls for In-Person Classes, with Caveats” (*Medscape*)

July 16: “COVID-19 Takes Toll on Catholic Clergy in Hard-Hit Countries” by Luis Andres Henao and Jessie Wardarski (*Associated Press*)

July 16: “Large Redemptivir Study Finds No COVID-19 Survival Benefit” (*Medscape*)

July 20: “Third Covid Wave Upends Fragile South Africa, a Warning for Developing World” (*The Wall Street Journal*)

July 26: “Moderna Expanding Kids Vaccine Study to Better Assess Safety” (*Associated Press*)

July 28: “CDC Calls for Masks in Schools, Hard-Hit Areas Even if Vaccinated” (*Medscape*)

July 30: “Covid-19 Outbreak During Olympics Leads Japan to Widen State of Emergency” (*The Wall Street Journal*)

AUGUST 2021

August 2: “US Hits 70% Vaccination Rate—A Month Late, Amid a Surge” (*Associated Press*)

August 6: “Masks Are Back, Maybe for the Long Term” (*The Atlantic*)

August 12: “Covid-19 Vaccine Scammers Target Authorities in Dozens of Countries Including Italy and Columbia” (*The Wall Street Journal*)

August 13: “FDA Authorizes Covid-19 Boosters for Certain Immunocompromised” (*The Wall Street Journal*)

August 16: “Rich Nations Dip into COVAX Supply While Poor Wait for Shots” (*Associated Press*)

August 17: “Forget Beating Covid-19. Europe Is Preparing to Live with It.” (*The Wall Street Journal*)

August 17: “U.S. to Advise Boosters for Most Americans 8 Months After Vaccination” (*The New York Times*)

August 23: “US Regulators Give Full Approval to Pfizer COVID-19 Vaccine” (*Associated Press*)

August 24: “As Delta Spread, Covid-19 Vaccine Effectiveness Against Infection Fell from 90% to 66% in One Key Study” (*STAT News*)

August 27: “Moderna Complete Submission for Full FDA Approval of Covid-19 Vaccine; Pfizer Seeks Approval for Booster Dose” (*CNN*)

SEPTEMBER 2021

September 2: “Africa Nations Set to Miss ‘Crucial’ COVID Vaccine Goal: WHO” (*Medical Xpress*)

September 3: “Crowded U.S. Jails Drove Millions of COVID-19 Cases, a New Study Says” (*NPR*)

September 7: “Hospitalizations for Children Sharply Increase as Delta Surge, C.D.C. Studies Find” (*The New York Times*)

September 10: “Covid-19 Virus Variants Mu and Lambda Unlikely to Supplant Delta” (*The Wall Street Journal*)

September 10: “FDA ‘Will Follow the Science’ to Approve COVID Vaccine for Kids Under 12” (*Axios*)

September 14: “FDA Vaccine Regulators Argue Against Covid-19 Vaccine Boosters in New International Review” (*STAT News*)

September 15: “As COVID-19 Vaccine Mandates Rise, Religious Exemptions Grow” (*Associated Press*)

September 23: “FDA Authorizes Pfizer’s Covid-19 Booster for People Over 65 or at High Risk” (*STAT News*)

September 24: “CDC Leader Adds People with Risky Job to COVID Booster List” (*Associated Press*)

September 28: “Pfizer Testing Oral Pill for Prevention of COVID” (*Axios*)

OCTOBER 2021

October 1: “Merck Pill Intended to Treat Covid-19 Succeeds in Key Study” (*The Wall Street Journal*)

October 4: “EU Regulator OKs Pfizer Vaccine Booster for 18 and Older” (*Associated Press*)

October 8: “Pfizer Asks FDA to Authorize COVID Vaccine for Kids Aged 5 to 11” (*Medscape*)

October 13: “NIH Study: Moderna, Pfizer Shots Are Most Effective Covid Boosters” (*Politico*)

October 14: “New York Must Allow Religious Exemptions to COVID-19 Vaccine Mandate, Judge Rules” (*Reuters*)

October 20: “In Secret Vaccine Contracts with Governments,

Pfizer Took Hard Line in Push for Profit, Report Says” (*The Washington Post*)

October 20: “FDA OKs Mixing COVID Vaccines, Backs Moderna, J&J Boosters” (*Associated Press*)

October 26: “Pfizer-BioNTech Covid-19 Vaccine for Young Kids Backed by FDA Advisors” (*The Wall Street Journal*)

October 27: “Merck Agrees to Let Other Drug Makers Make Its COVID Pill” (*Associated Press*)

October 28: “Antidepressant Fluvoxamine Significantly Reduces Covid-19 Hospitalization” (*The Wall Street Journal*)

NOVEMBER 2021

November 1: “Moderna Confirms FDA Delayed Covid-19 Vaccine in Adolescents to Review Myocarditis Risk” (*The Wall Street Journal*)

November 2: “Covid-19’s Global Death Toll Tops 5 Million in Under 2 Years” (*Associated Press*)

November 4: “US Mandates Vaccines or Tests for Big Companies by Jan. 4” (*Associated Press*)

November 4: “Molnupiravir: First Pill to Treat Covid Gets Approval in UK” (*BBC*)

November 9: “U.S. Opens Borders to Vaccinated Europeans, Others, After More Than 18 Months” (*The Wall Street Journal*)

November 18: “Pfizer, US Ink \$5.29B Deal for Possible COVID-19 Treatment” (*Associated Press*)

November 19: “OSHA Suspends Implementation of Vaccine Mandate” by (*Medscape*)

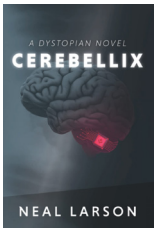
November 22: “FDA Clears Pfizer, Moderna Covid Booster Shots for All Adults” (*Politico*)

November 26: “WHO Identifies New Covid-19 ‘Variant of Concern’ Omicron as Strain Triggers Global Fears” (*The Wall Street Journal*)

November 30: “FDA Panel Backs First-of-a-Kind COVID-19 Pill from Merck” (*Associated Press*)

BIOENGAGEMENT

BIOFICTION



Neal Larson, *Cerebellix: A Dystopian Novel* (Self-Published, 2021).
Transhumanism, Technology and Humanity, Nature of the Human Person



Mike Chen, *A Beginning at the End* (MIRA, 2021).
Dystopian, Pandemics and Society, Pandemics and Social Relationships

PRIMETIME BIOETHICS



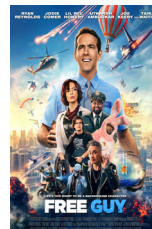
Dopesick (2021, Hulu).
Opioid Addiction, Pharmaceutical Ethics.



Ad Vitam (2018, Netflix)
Regenerative Technology, Radical Life Extension.

Readers are cautioned that these resources represent a wide spectrum of genres and content, and may not be appropriate for all audiences. For more comprehensive databases of the various cultural media, please visit our website at cbhd.org/resources/reviews. If you have a suggestion for us to include in the future, send us a note at research@cbhd.org.

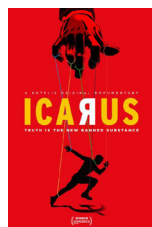
BIOETHICS AT THE BOX OFFICE



Free Guy (20th Century Studies/Disney, 2021, PG-13 for Strong fantasy violence throughout, language and crude/suggestive references, 2021).
Metaverse, Artificial Intelligence, Internet & Society.



The Immortal Life of Henrietta Lacks (HBO Max, TV-MA, 2017)
Race and Bioethics, Research Ethics, Medical Advancements



Icarus (Netflix, TV-MA, 2017)
Documentary, Drugs and Performance Enhancement, True-Crime



The God Committee (Netflix, Not Rated, 2021)
Organ Transplantation, Medical Ethics, Medical Drama.

UPDATES & ACTIVITIES

CBHD Annual Conference

- Our 28th Annual Conference, *Bioethics & the Body*, took place online June 24-26. While we had hoped to be able to meet in person, the COVID-19 pandemic prevented that for a second year. We are hoping and planning to meet in person in 2022. In conjunction with the 28th Annual Conference, we were able to offer four courses for academic credit along with a preconference workshop entitled "Ethical Questions on Human Fetal Tissue Research." This workshop anticipates a substantial report CBHD will be publishing in 2022 on fetal tissue research and Christian Bioethics.
- In November, we began evaluating paper proposals for our 29th Annual Conference, *Integrity & Conscience: Bioethics & the Professions*.

Staff News

- In June, Annelise Olson Troll, CBHD Communications & Marketing Manager, gave birth to a healthy baby she and her husband Ian named Clara.
- CBHD Executive Director Matthew Eppinette, MBA, PhD, spoke in Trinity International University's Graduate and Divinity School chapel series entitled "The Future for the Gospel: The Church and Technology," addressing "Christian Faithfulness and Transhumanism."
- Dr. Eppinette delivered a workshop at the annual meeting of the Christian Legal Society in San Antonio, Texas on "Artificial Intelligence, Robots, Cyborgs, Transhumanism, and the Law."

COVID Vaccine Ethics

- In August, we posted a substantial update to our Coronavirus Vaccine Ethics article posted prominently at cbhd.org. We are grateful to have heard from many, many people that the article has been helpful for their thinking and in praxis within church, work and other contexts.

Bioethics at Trinity

- Michael Sleasman, PhD, Director of Bioethics Degree Programs at Trinity International University, opened a Graduate and Divinity School chapel series entitled "The Future for the Gospel: The Church and Technology" with an address on "Thinking Theologically About Technology."

Pastoral Care & Support

- In October, CBHD hosted a group of District Superintendents from the Evangelical Free Church of America (EFCA) for a discussion of ways in which bioethics affects the work of pastors and churches and ways in which CBHD might better serve those pastors and churches.



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The Center for Bioethics & Human Dignity (CBHD) is a Christian bioethics research center at Trinity International University that explores the nexus of biomedicine, biotechnology, and our common humanity.

Dignitas is the quarterly publication of the Center and is a vehicle for the scholarly discussion of bioethical issues from a Judeo-Christian Hippocratic worldview, updates in the fields of bioethics, medicine, and technology, and information regarding the Center's ongoing activities. ●●●



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