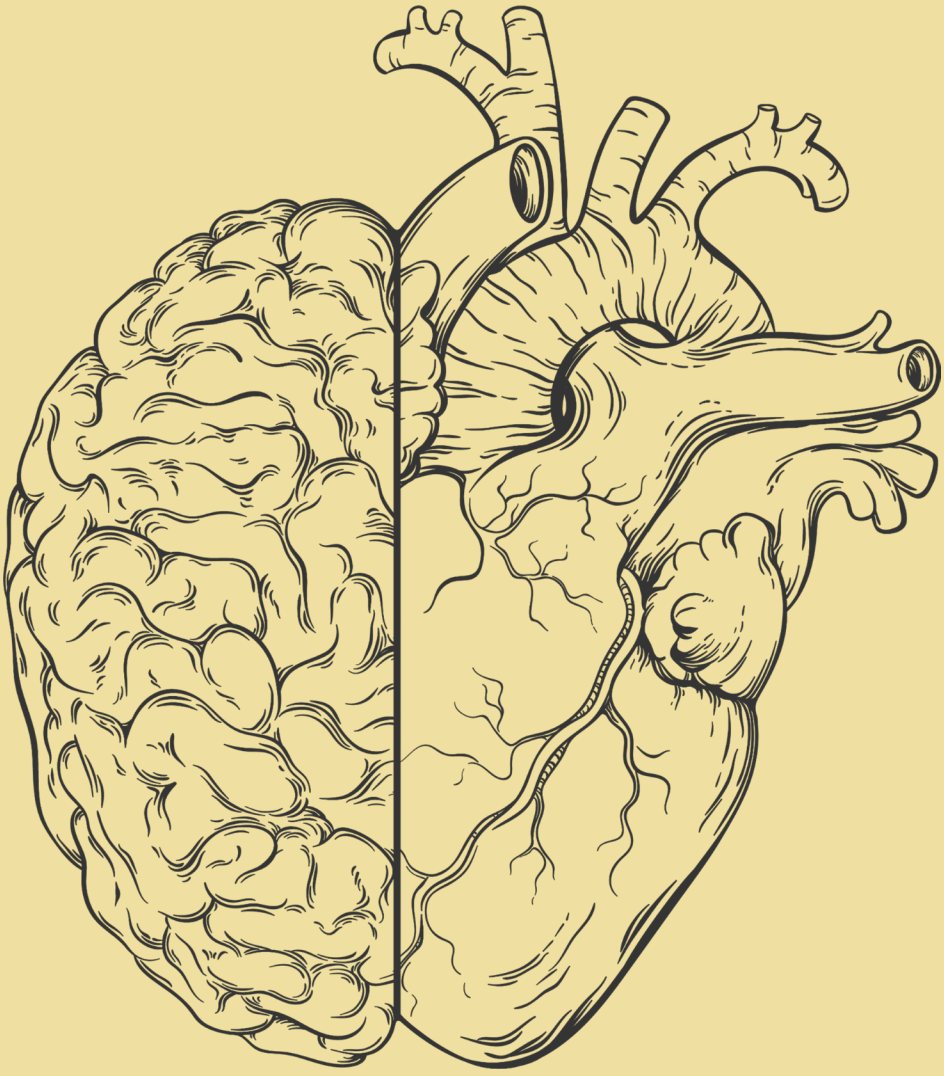
Ethics & Medicine

An International Journal of Bioethics



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ERRATUM: In the Fall 2020 issue of *Ethics and Medicine*, the article "Climate Change Related Health Hazards and the Academic Responsibility of Evangelical Bioethics" by Cristina Richie was published without numerical notations for the endnotes in the primary body of the article. This was an error in layout and not the fault of the author. The Editorial Staff of *Ethics & Medicine* regret this error and have made a corrected version of this article available via Open Access on our journal website.

Please consult https://www.ethicsandmedicine.com/climate-change-related-health-hazards-and-the-academic-responsibility-of-evangelical-bioethicists/ for the complete article and references."

EDITORIAL

A New Chapter for Ethics & Medicine Revisited

MICHAEL J. SLEASMAN, PHD

It is with great honor and sincere apologies from the editorial staff that I introduce the long-delayed Spring 2021 issue of *Ethics & Medicine*. This issue marks a new chapter in the nearly four-decade history of this journal. From its beginning in the 1980s and throughout the decades since, this journal has served as an important forum for the critical examination and discussion of bioethical issues at the intersection of science, medicine, and technology, guided by the Hippocratic practice of medicine and the wealth of the Judeo-Christian worldview. The journal quickly grew in the international scope of its engagement, as *E&M* developed partnerships over the first two decades with the Bioethics & Public Policy Centre, The Center for Bioethics & Human Dignity, and the Lindeboom Insituut, as well as established a transatlantic editorial board.

Launched in 1985, under the leadership of founding editor Nigel M. de S. Cameron, the journal was first published in the UK in the wake of the Warnock Report. Given that social milieu, the early years of the journal focused heavily on bioethical issues at the beginning of life, with special focus on the human embryo, but also included several articles examining issues at the end of life, themed issues on AIDS, and consistent concerns for eugenic practices in the context of disability. As the 80s came to a close, articles began to explore the broader issues of the principled practice of Hippocratic medicine—such as confidentiality and increased concerns regarding euthanasia—as well as the growing considerations of biomedical research (e.g., fetal brain transplantation), and the rising practice of reproductive technology interventions.

Subsequent decades saw an expansion of the coverage of the ever-burgeoning array of bioethical issues in the expanding arenas of biomedical research, biotechnology, emerging technologies, and human futures. Under the subsequent leadership of the journal's recently retired editor, C. Ben Mitchell, the journal accelerated in its expanding coverage of such topics alongside traditional bioethical considerations, as well as to the expansion of a global range of contributing authors. Under Mitchell's leadership standing columns in clinical ethics case studies and neuroethics were established which continue to the present.

Thirty-seven years of publication brings us to the present, marking *E&M* as one of the oldest continually published journals in bioethics. As was noted in our last issue, 2021 marks a new chapter in the life of *E&M*, as the journal transitions from the publication of an independent press (formerly Bioethics Press) to a university publication of Trinity International University and its Bioethics Department. Aside from a new hosting entity under which the journal processes subscriptions and logistics are managed, this transition along with the start of my

Michael J. Sleasman, "A New Chapter for Ethics & Medicine Revisited," *Ethics & Medicine* 37, no. 1 (2021): 5–7

tenure as editor should be otherwise unnoticeable to our readership. We thank you for your patience throughout the publication delays as we have worked through this transition. Amidst the internal changes in the staffing and structure of the journal's operations, the editorial staff and editorial board remain committed to the broad engagement of bioethical issues from within the Judeo-Christian Hippocratic perspective that has marked the scholarship published in the pages of *E&M* over these nearly four decades.

As part of this transition, I am pleased to announce the expansion of our online presence, seeking to enhance the accessibility and 'searchability' of our articles, including the launch of open access for our older archives free to all and the availability of online prepublication articles for those who are online subscribers. We encourage you to check the website regularly (https://ethicsandmedicine.com) in the coming months as we continue to roll out new features and expand the availability of individual articles.

We welcome your feedback and suggestions as we continue to expand our online presence. Additionally, we welcome your article submissions, book reviews, and case study discussions. We have recently updated our submission guidelines, so we encourage you to check our website to guide you as you prepare your manuscripts.

Finally, it is my privilege to introduce this present issue, which, as an eclectic mix of articles on a wide range of topics, showcases the broad coverage of bioethical issues reflected in this journal. In the Grey Matters Column, William P. Cheshire, Jr. reflects on the "Ethics of the Extreme," where he examines extremism through the lenses of neuroscience and moral reasoning. For the clinical case study in the Clinical Ethics Dilemma Column, "Daring to Discontinue Life-Sustaining Treatment," Ferdinand D. Yates, Jr. revisits a case presentation by Robert D. Orr that explores the ethical permissibility of a patient requesting the removal of his ventilator so that he will die.

Former assistant editor Jacob Shatzer explores progressive approaches to technology in the 1970s for lessons about ways to respond to emerging bioethical and technological issues today in his article, "Promise or Peril? Progressive Evangelical, Technology, and Social Justice in the 1970s." The editorial staff is grateful for Jacob's editorial service to the journal over the years and wish him well as he moves on to other endeavors.

Also looking to past examples for future bioethical guidance, Stephen Goundrey-Smith's takes a similar tact in his article, "Ethical Evaluation of New Biomedical Technologies Using Past Case Studies in Pharmaceutical Medicine." In his article, Goundrey-Smith examines the ethical discussion of the oral contraceptive pill and selective serotonin reuptake inhibitor (SSRI) antidepressants for lessons regarding the move from therapy to enhancement, offering a four-point ethical framework.

Rounding out the article contributions, Cristina Richie offers a theological context for engaging transhumanism through her article, "A Theology of Human Limitation and Medicine." The article develops a theology of human limitation through a broader examination of a theology of sin, death, illness, and medicine, before turning back to the implications for engaging with transhumanism.

I am also grateful to our new book review editor Dennis Sullivan and for his leadership in procuring the present reviews included in this issue. Over the coming months, we will be working to catch up on the backlog of publication and hope to roll out at least one themed issue in the next year. We thank you for your continued support of *Ethics & Medicine*, and look forward to joining with you for the next chapter of this journal.

GREY MATTERS

Ethics of the Extreme

WILLIAM P. CHESHIRE, JR., MD, MA

> "As a neuropsychiatrist, I wonder if the collective national amygdala is on fire, and the national prefrontal cortex is being corroded by the pervasive and ugly negativity that engulfs us all, with social media that incites its users night and day, adding gasoline to the fire." (Henry Nasrallah)[1]

Abstract

Extremism, which is variously regarded as the adversary of peaceful moderation or the vanguard of righteous dissent, often is immediately recognizable, but sometimes it may be ambiguous, insidious, or undefined. Growing apprehensions about mainstream extremism reflect a linguistic contraindication that may be a symptom of cultural disorientation. Insights from neuroscience suggest that some forms of extremism may arise from an imbalance of brain pathways involved in moral reasoning, such that those signaling sacred valuations and rule processing attain dominance over those representing empathy and deliberative reasoning. If the brain be compared to an orchestra, extremism would be analogous to the unpitched percussion section taking over, the bass drum and clash cymbals intruding into orchestral harmony and drowning out the string and brass sections with harsh, metronomic, auditory hyperintensity. And yet there is a proper role for these instruments. The ideal balance, whether of neural signals or orchestral voices, requires discernment of value beyond factual information. A number of ethical approaches supply moral clarity to assist with making ethical distinctions when convictions reach into the extreme, and while helpful, these leave unanswered deeper questions of ultimate meaning.

Introduction

In his speech at the 2021 National Prayer Breakfast, President Joe Biden announced, "we must confront and defeat political extremism."[2] Any reasonable person would surely agree and hasten to condemn acts of hatred and violence committed against one's neighbors. The language is reminiscent of the 2002 State of the Union address by former President George W. Bush, who pointed to an "axis of evil" threatening America, except that this time the named threat is within our borders. In each case assent seems at face value straightforward. Who could disagree with opposing evil or extremism?

On further scrutiny, whereas there are clear instances of dangerous extremism, there are also ambiguous examples where the meaning blurs. Paradoxically, in its applications the word "extremism" can be extremely vague. Essential to any serious attempt to confront and defeat extremism must be a clear and objective definition. In order to assess whether an idea or action qualifies as extremism, it is first necessary to distinguish it from acceptable beliefs and tolerable behaviors. Rioting must be distinguished from peaceful protest, hateful speech from rational argument, arson from lighting a candle in the darkness. A valid definition of extremism would

William P. Cheshire, Jr., "Ethics of the Extreme," *Ethics & Medicine* 37, no. 1 (2021): 8–14

not be just an instrument of political power useful in that moment, but an idea anchored in universally accepted principles and which holds up to scrutiny across a range of contexts.

Defining Extremism

The rhetoric that denounces extremism rarely attempts to define it. The *Oxford English Dictionary* defines extremism as a "disposition to go to extremes," where 'extreme' can be that which is "outermost," "farthest from the center," "utmost," or "uttermost." It can also mean existing "in an exceedingly high degree," "exceeding the limits of moderation," or "going to great lengths."[3]

One sense of the extreme, then, is that which is different or an outlier from the normal distribution. Someone might be extremely tall, extremely beautiful, or extremely long-lived. These examples of extremity are not threats but ought to be cherished as examples of the rich diversity of human nature.

A second sense of the extreme has to do with differences in functional capacity. The fastest runner, the most agile dancer, and the most intelligent teacher—along with those who are merely average—are further examples of welcome diversity.

A third sense of the extreme has to do with differences in effort or achievement. Someone might be extremely well read, extremely educated, or extremely strong. The musical virtuoso, the chess champion, and the Olympic gold medalist are all outliers. They have perfected their talents to the extreme and deserve our admiration. Extreme performance in sports, science, and the arts, within ethical constraints of safety and fairness, is rightly celebrated.

Other examples evoke concern. The extreme collector who never throws away a newspaper but clutters his bedroom from floor to ceiling with decades of yellowed crumbling newsprint, or the obsessive-compulsive executive who consistently arrives late to work because she ritualistically washes her hands repeatedly, are also outliers. Their habits, though mostly harmless, compete with other pursuits and may be for them a source of anxiety.

A fourth sense of the extreme illustrates the fluidity of language over time. A brief search of the internet finds that the adjective 'extreme' (sometimes shortened to 'xtreme') applies to cable service data transmission speeds, television channel subscriptions, intense athletic fitness training, unusual vacation destinations, tattoos, whitening toothpastes, hairstyling gels, deodorants, and exotic pets. In American culture, where more of just about anything is often assumed to be better, labeling a product as 'extreme' has proven to be a successful marketing ploy. Extremism in this context is an enticing buzzword.

These alternately bad and good meanings of extreme, when juxtaposed, exemplify Chesterston's observation that "a word has no loyalty; it can be betrayed into any service or twisted into any treason."[4] Absent a clear and consistent definition, nowhere more than in politics, the vocabulary of extremism too easily becomes a tool by which to disparage those with whom one disagrees. Even if the moral aspect is unspecified, labeling one's adversaries as extremists has rhetorical currency in projecting an image of being reasonable and on the side of restraint and moderation against a dangerously transgressing enemy.

The Moral Evaluation

The accusation of extremism goes beyond having an extreme trait or going to an extreme length. Put differently, the idea of extremism surpasses the factual realm of state or degree. To choose whether to apply the label of extremism requires a moral evaluation beyond what the dictionary supplies. There are a number of ways to do this.

One approach regards extremism as a departure from the virtue of moderation. For Aristotle, virtue was to be found in striving for the mean between two extremes. For example, midway between the vices of cowardice and recklessness is the virtue of courage. Whereas this approach offers balance, it provides little guidance as to exactly where along the continuum the center is to be found. Further, charting a mean suggests a static relationship between moral opposites, whereas in real life these relationships may be dynamic and dependent on uncertain or changing circumstances. Excessive moderation, too, can become a threat when compelling moral obligations are present. How compelling those obligations are and to whom they apply are also value judgments. A grieving family would not be reassured by a surgeon's remark that he exercised careful moderation in attempting to save the life of their loved one on the operating table.

A consequentialist ethical perspective examines anticipated outcomes resulting from extreme acts and weighs potential benefits versus potential harms. Driving extremely fast may get an acutely sick passenger to the emergency room faster, but at the risk en route of crash and injury. There comes a point on the speedometer where the cost/benefit analysis finds that velocity's risk exceeds its benefit. Difficulties arise when predictions are uncertain or the anticipated goods are dissimilar and cannot be assessed on the same value scale. A further question, at the societal level, is how much extremism should be tolerated when balancing the good of individual liberty against the potential harm to others?

A deontological ethical perspective judges certain kinds of extreme beliefs or behaviors to be intrinsically right or wrong. From this perspective, violent force that injures the life of innocent bystanders is categorically wrong. Intent also matters. One ought not to intend to imperil innocent people. Dilemmas arise, however, in situations where violence is unavoidable or seems morally justifiable. In such cases, rule-governed exceptions may apply. A classic example is just war theory. According to Thomas Aquinas, for a war to be just, three conditions must be met.[5] First, the fighter must have sovereign authority to act with violence. Second, the cause must be just. Third, the fighter must act with the right intention, not to harm or commit cruelty, but to establish or restore peace.

For each of these ethical perspectives, the gathering of facts and the exercise of reason takes the moral analysis further, but not to completion. Extremism remains at best a contested definition and at worst a fuzzy quality of irreducibly subjective interpretation. Evaluations of extremism are laden with differing assumptions about the relative value of various harms, whether measured in terms of pain, privation, or symbolic affront. There are also difficult questions of complicity and under what conditions and to what degree a majority, by tacit sympathy or by silence, may be partly responsible for extreme actions committed by a fringe group.

The Medical Evaluation

The distinction between reasonableness and extremism in some ways parallels that of health and illness. Definitions of illness may provide some guidance in understanding political extremism. Both constructs—reasonableness and health—assume a normative natural order that in extremism or illness is disordered, whether cognitively, motivationally, or bodily.

Since the 1940s, the field of psychology has interpreted the tendency to view the world and other people in an inflexible manner as ideological rigidity. The "inflexibility hypothesis" postulates that ideological rigidity is rooted in general psychological rigidity.[6] Within this framework the motivation to seek cognitive closure through absolute answers to problems leads to an intolerance of ambiguity, rejection of new or different ideas, and a prejudice against those who express alternative views.[7] Anger arising from personal or collective marginalization, exclusion, humiliation, or betrayal can further drive extremism by catalyzing a struggle to restore meaning and worth.[8] One formulation of this model is "significance quest theory." This theory posits that extremely violent behavior, which includes a willingness to fight and sacrifice, seeks to obtain or restore an individual's experience of personal significance and efficacy.[9] Additional factors that may contribute to radicalism include a desire for adventure, a desire for life meaningfulness, identification with others who are also traumatized, and "a desire for personal redemption from corruption."[10]

In a remarkable series of experiments, a team of Spanish researchers recruited a cohort of radical young men who openly expressed a desire to engage in violence for jihadist causes and subjected them to functional MRI brain scans. The researchers found that higher scores on a survey of willingness to fight and die for sacred values—that is, moral values that they perceived to be non-negotiable and inviolable—correlated with neural activation in the left inferior frontal gyrus (IFG), which is a brain region associated with rule processing. Then, when the subjects were asked to play a video game that was programmed to cause them to feel socially excluded, their willingness to fight and die increased even for non-sacred values. The researchers concluded that social exclusion may contribute to radicalization and an increased propensity toward violence.[11] In a second study, as the jihadist men rated their sacred values on a questionnaire, fMRI detected deactivation in a network that includes the dorsolateral prefrontal cortex (DLPFC), which is a brain region associated with deliberative reasoning and integration of cost-benefit assessment. Higher scores of willingness to fight and die for their values were associated with increased activation in the ventromedial prefrontal cortex (vmPFC), which is a brain region associated with subjective valuation.[12]

These findings suggest that, through the lens of neuroscience, violent political extremism may be thought of as a disconnection syndrome in which brain networks associated with moral reasoning that normally function together become disrupted. As neural structures corresponding to ingrained rule-based thoughts and valuations attain dominance, they become isolated from other neural sources of available knowledge and decisional input, much as the young radical jihadists felt socially isolated. Excessive fixation on perceived threats to sacred values knocks moral reasoning off balance to the neglect of other streams of thought, such as empathy, the neuroanatomical substrates of which are inversely related to those associated with predatory

violence.[13] Further along the trajectory of disengagement from one's moral compass, mental dehumanization of others makes it easier to rationalize committing violence.[14]

I would like to suggest that the normative natural order for moral reasoning is one in which its neurobiological substrates function in proper balance. Suppression of or disconnection from a part, such as the neural substrate for empathy, amounts to a neurological deficit and thus a disordered brain state. Even so, defining what makes a proper balance is a question incompletely answerable by neuroscience.

The moral evaluation of extreme beliefs and behaviors requires something further. A moral standard is needed by which to judge whether a particular belief or behavior is a matter of resoluteness or obsession, faithfulness or hubris, good or evil. Neuroscience is a helpful source of information about the brain but is an insufficient tool for reaching ultimate moral conclusions. Too much emphasis on neuroscience to the exclusion of complementary sources of knowledge tends toward a reductionistic interpretation of human beings that itself can lead to the extremism of materialistic philosophy.

Medical analogies can also be instruments of abuse. Soviet policy under Stalin notoriously characterized political dissenters, including human rights activists, as psychiatrically ill. Once diagnosed, the accused had no right of appeal but were systematically confined to prisons masquerading as psychiatric hospitals where they received involuntary treatment.[15]

Mainstream Extremism

Defining extremism requires a reference point from which the beliefs or behaviors in question depart and, on that basis, are judged to be extreme. Some voices from the political left view the threat of extremism as coming from the right,[16] while some voices from the political right view the threat as coming from the left.[17] In the current climate of social unrest, apprehensions are arising across the political spectrum over the concern that extremism is becoming mainstream.[18]

The concept of "mainstream extremism" would be an oxymoron if extremism were defined as that which is far from the cultural norm. Any ideology or behavior, once it becomes part of the cultural mainstream, would no longer be distinguishable from common thought and practice and would cease to qualify as extreme. A boundlessly flexible moral relativism eventually annihilates the very possibility of the extreme.

The Spiritual Evaluation

Nevertheless, if there exists beyond culture a transcendent, universal standard for truth and conduct, then "mainstream extremism" is indeed a valid category, and quite a serious one. For those who believe that the Old and New Testaments, including the texts of Genesis 3 and Romans 3:23, are the revealed word of God, all of humanity has fallen into sin and into the extreme condition of being infinitely separated from God.

Thankfully, God's response to confront and defeat the extremism of human rebellion is not to condemn the world (John 3:17), but to extend the loving hand of salvation through his Son, Jesus Christ (John 3:16, 14:6; Romans 10:9). This gospel is a message of extreme grace.

The Christian's response, in contrast to that of the violent zealot, is one of gratitude and humility. Dietrich Bonhoeffer contrasts the "morbid restlessness which is so characteristic of fanaticism" with the Word of God that "is weaker than any ideology" because it "takes the risk of meeting the scorn of men and being rejected" and "recognizes opposition when it meets it, and is prepared to suffer it."[19] Infused by God's grace, obedient life in Christ produces love, joy, peace, forbearance, kindness, goodness, faithfulness, gentleness, and self-control. Against such things there is no limit placed on their expression (Galatians 5: 22–23).

Acting out extremist urges may satisfy for a moment, but ultimately disappoints. There is a far greater and lasting victory along the straight line that passes through Calvary's cross and leads to that heavenly city, which Augustine wrote was "glorious beyond compare," that destination where "victory is truth, dignity is holiness, peace is happiness, life is eternity."[20]

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CLINICAL ETHICS DILEMMA

Daring to Discontinue Life-Sustaining Treatment

ROBERT D. ORR, MD, CM
FERDINAND D. YATES, JR, MD, MA (BIOETHICS)

Editor's Note:[1] *This column presents a problematic case—one that poses a medical-ethical dilemma for patients, families, and healthcare professionals. As this case is based on a real medical situation, identifying features and facts have been altered in this scenario to preserve anonymity and to conform to professional medical standards. In this case, the family is forced to honor the patient's request to terminate life-sustaining medical care.*

Question: Is it ethically permissible for this young man to stop his ventilator so he will die?

David is a 34-year-old man who has been on a ventilator for 9 years. He was re-admitted to the hospital two weeks ago for treatment of recurrent pneumonia and has improved. He asked yesterday if his ventilator could be stopped.

Nine years ago, he sustained a neck fracture in a diving accident that left him quadriplegic and ventilator dependent. He went to a rehabilitation facility where his family learned to care for his medical needs, and he was discharged home on ventilator care. His pulmonary situation was stable for several years. He was able to be off his ventilator for several hours at a time and go out in his van with friends. However, in the past two years he has had ten hospital admissions for atelectasis[2] or infection. His secretions have increased so that he requires suctioning several times through the night, and he is no longer able to be off the ventilator for even short periods. He has had vigorous treatment with antibiotics, chest physical therapy and repeated bronchoscopies, and it is the consensus of his care team that his pulmonary situation will not improve and will likely steadily deteriorate.

He has had excellent care from his mother and sister with help from home nursing 12 hours per day. He has a voice activated computer which facilitates many personal tasks. He has been very involved in his care, and his nurses describe him as thoughtful, intelligent and self-assured. Prior to his illness he attended college (history major) and enjoyed classical music. He has several supportive friends who visit him regularly.

His parents divorced a few years after his accident. His father and only brother live out of state. The patient states that his sister has "put her life on hold" to assist with his care, and for this he feels grateful, but not guilty.

He has been thinking for the past eight months that he wanted to stop supportive treatment so that he could die, but articulated this to his family and care team just yesterday.

Robert D. Orr and Ferdinand D. Yates, Jr. "Daring to Discontinue Life-Sustaining Treatment," *Ethics & Medicine* 37, no. 1 (2021): 15–17

On examination he is alert, articulate, and in no apparent respiratory distress. He is able to speak a few words at a time using a speaking valve. He says that his life as a "quad" was tolerable until two years ago, but the progressive pulmonary disease has made it intolerable as it is. He would continue treatment for another nine years if he was able to be as he was prior to the progressive pulmonary deterioration. He is now frightened of suffocating and wants to avoid that. He would take an overdose of a sedative and ask someone to disconnect his ventilator, but he recognizes that this is not permissible, and wants to work with his team to find the best comfort care possible as his disease takes his life. He reports that he is not depressed, though he knows what it is like to feel that way as he was despondent for several weeks after his accident.

I talked with the patient, his mother, best friend, primary hospital nurse, and one of his home care nurses.

Discussion

It is generally felt that there is no moral obligation to continue life that is dependent on technology when the burdens to the patient of that life outweigh the benefits to the patient. It is also the legal and moral consensus that the healthcare team should pursue the treatment goals of the competent patient. Thus, even if he were not terminally ill from progressive pulmonary disease, it would be ethically permissible for him to choose to discontinue his antibiotics and ventilator if he felt the burdens of continued treatment were disproportionate to the benefits of continued life. His progressive pulmonary disease and terminal prognosis are further reasons that make it reasonable to change treatment goals from life-prolongation to comfort care.

It is not acceptable either legally or from a professional ethics standpoint for any member of his care team to assist him with an act of suicide. It is, however, ethically permissible to give him adequate sedation to ease his respiratory distress as long as the intent and the doses are not aimed at hastening death.

Recommendations

It is ethically permissible to honor this patient's request to discontinue his ventilator. Before this is done, however, all efforts should be made to ensure that his distress and fears have been addressed and that he then be given the option of continuation of ventilator support.

It is also ethically permissible to give him sedation prior to discontinuation of his ventilator as long as the doses used are for sedation only, and are not intended to hasten his death.

Follow-Up

After further discussion with his professional care-givers, he went home on prophylactic antibiotics to prevent recurrent pneumonia. This worked for the next six months during which David felt he had an acceptable quality of life. When at that time he did develop another life-threatening infection, he remained at home. He had a brief celebration of his life with family and friends. His long-standing pulmonary physician went to his home, gave him a small dose of sedation and removed his ventilator. He died peacefully in about 3 hours, having received 3 additional doses of sedation when he showed signs of mild respiratory distress.

Comment

In hearing about this case, some express concern that this represents euthanasia. However, the patient died of his inability to breathe without mechanical assistance. He and his caregivers had successfully treated that inability for nearly 10 years, but when the patient found continued efforts inadequate, he chose to discontinue treatment, allowing the disease to take his life. His doctor did not give him anything to cause his death; he stopped therapeutic efforts to prevent death when they were no longer wanted by the patient.

Additional Resources

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Promise or Peril? Progressive Evangelicals, Technology, and Social Justice in the 1970s

JACOB SHATZER, PHD

Abstract

Raising questions related to technology often raises ire on multiple fronts. Some think all technology is neutral. Others lean strongly toward purely positive or purely negative assessments. Yet many neglect the way that analyzing technology connects with other beliefs and commitments. This article seeks to ameliorate this issue and better prepare thinkers to recognize their own web of thinking by exploring progressive evangelical approaches to technology in the 1970s. This historical exploration highlights some key features of the ethics of technology that continue to impact the way Christians ask and answer these questions today, whether that is related to biomedical issues, military technology, or entertainment technology.

Keywords*: evangelicalism, progressive evangelicalism, technology, social justice, technicism*

Introduction

Christians must respond to technology. On one hand, this is obvious: look around, read the news, consider how quickly our world is changing—and our place within it. On the other hand, such an urgent statement seems to be an exaggeration. Christians "must" respond to technology? What is so new and urgent about our age? Is this response, this question, yet another example of modern progressivism—assuming that we are so far ahead of those who have come before that our questions are new, or more pressing?

How can we begin to understand how Christians have considered their engagement with technology in the past? One of the issues is that Christians have only dealt with technology on the periphery, as it has touched on other concerns. "Technology" almost always required an adjective for moral deliberation to occur: military technology, reproductive technology, and so on.[1] Today, it is more common to speak of technology in general, or perhaps "technicism"—supreme confidence in and reliance on technology and the solutions it provides to all sorts of human challenges.

If we look at some of these concerns, we gain great insight not only into how Christians should think about technology, but also about how technological reflection intersects with and depends upon other topics and beliefs. While we often think that we can deal with technology "on its own terms," our reflection inevitably connects to and depends on a host of other beliefs.

In what follows, I examine the technological opinions of one group of Christians, in hopes that doing so will lay bare their commitments, the interconnectedness of their thinking. Seeing

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these dynamics at work in others can help us begin to better analyze such connections in the arguments in our own time. Within the context of recent scholarly analysis of progressive evangelicals, we will evaluate articles on technology from the *Post-American* (name changed to *Sojourners*) in the 1970s for further insight into Christian evaluations of technology. And, perhaps, in better seeing this in our past, we will be better equipped to see these connections and commitments in our own thinking.

Progressive Evangelicals

In the current American evangelical landscape, we think we observe shifting sands. Studies show that more and more young evangelicals define themselves as progressive.[2] One rhetorical reaction to this phenomenon claims that these believers are hearkening back to the Social Gospel activism of Walter Rauschenbusch, an activism conservative evangelicals have rejected.[3] According to this interpretation, Rauschenbusch's Social Gospel had overemphasized the earthly results of the kingdom of God. By insisting on the importance of the church's redemptive role *within* society, Rauschenbusch and his followers had given up the substance of the faith in order to promote material results in the here-and-now. Seeing this shortcoming, evangelicals in the past realized the problems with the Social Gospel, shifted to focusing on the Fundamentals of the faith, and persisted in developing a political witness based in conservative theology and—usually—right-wing politics.

This emphasis led, according to this telling, to the rise of the Moral Majority and the consolidation of the Christian Right. Emerging at the end of the 1970s, this group really entered the political scene with the 1980 presidential election of Ronald Reagan.[4] As one recent historical narrative has it, these Christian Right evangelicals were a result of a rebranding of evangelicals at the hands of the likes of Billy Graham.[5] Others lay the development and influence of conservative evangelicalism at the feet of domestic politics in the 1930s and 1940s, as certain corporate interests manipulated evangelicals to back the free market instead of Roosevelt's New Deal vision.[6] Some charge that this group, however it developed and coalesced, has lost its priority on morality and family values in recent presidential elections.[7] What these interpretations agree with is the idea that the progressive impulse in evangelical Christianity was largely dormant during these years.

But is the answer that clean? Is the progressive impulse an anomaly, one dormant since the Social Gospel? Other recent scholarship on an important period of American evangelical history indicates that it is not. Some trace this progressivism back into the early nineteenth century,[8] but we will focus more recently. Anxiety about the Social Gospel certainly exists,[9] and it has prevented some evangelicals from taking seriously charges to engage social issues. However, the reality is more nuanced than the anti-Social Gospel rhetoric makes it. This fact has historical impact—the rhetoric may simply be wrong—but it also hurts those conservative evangelicals who buy into it because they fail to take into account a deeper progressive impulse within evangelicalism itself. But where can we see this impulse?

We see the complexity of the issue if we glance at the years immediately prior to the rise of the Moral Majority. Right before Jerry Falwell and others created this Moral Majority and helped

elect Ronald Reagan, evangelicals did indeed stand on the cusp of broad political and cultural influence. However, the evangelicals that were in that position in the 1970s are not the ones you might expect, and they were not the ones who eventually became widely known. In other words, you might guess that those evangelicals on the cusp of political influence at the start of the 1970s are the same ones that gained it at the end of that decade. You would be wrong.

David Swartz's *Moral Minority* traces the rise and decline of what he calls the "evangelical left" in the 1970s. The book follows an interesting tale: rooted in the 1973 "Thanksgiving Workshop," it traces the key participants of the emerging evangelical left. The "Thanksgiving Workshop" produced a document called "The Chicago Declaration of Evangelical Social Concern." The *Washington Post* reported that evangelical activists sought to "launch a religious movement that could shake both political and religious life in America."[10] As Swartz summarizes, "The year was 1973, nearly a decade before the height of the Moral Majority, and the assembled activists were strategizing about how to move the nation in a more evangelical direction through political action."[11] Such language would strike us as likely applying to the Moral Majority. We might expect them to have been writing about the evils of abortion or the need for prayer in schools. But this "moral minority," as Swartz names them, had a different set of concerns.

The document highlighted several important themes. God's claim on the believer's life is complete. Love, justice, mercy, and forgiveness should mark Christians. These marks should lead believers to champion racial justice and to attack materialism. The document notes the significance of America's role in international trade and development, the problems with trusting in American military and economic might, and the temptation to give religious loyalty to the nation. The relationship of men and women receives attention. The document concludes with an emphasis on the gospel, eschewing particular political parties, and stated hope in the imminent return of Christ.[12]

Swartz's work traces how the group that created this document contributed to the evangelical left in the 1970s. What's particularly interesting—but takes us too far from our task to develop—is what Swartz identifies as the reason for their failure. In brief, the progressive evangelicals failed because they fractured along gender, racial, and ideological lines.[13]

While Swartz organizes his study based on the personalities, Brantley Gasaway focuses on the particular issues that these leaders addressed. In particular, he focuses on "the three most prominent progressive evangelical voices over the past four decades: *Sojourners*, Evangelicals for Social Action (ESA), and *The Other Side*."[14] He argues that these three sources reveal that progressive evangelicalism was both a coherent and complex religious movement[15] that centered on a core set of defining theological principles—biblical authority as primary, necessity of personal conversion to faith in Jesus' work of atonement, and dedication to evangelism and humanitarianism.[16] Gasaway's thesis focuses on the development of a "public theology of community" as a political philosophy: "That is, based upon perceived rights and responsibilities that flow out of humans' communal nature, they developed a set of theological convictions about public affairs and politics that shaped their efforts to promote a just society."[17] The book then covers racism, feminism, abortion, homosexuality, poverty, and American nationalism and militarism. Gasaway argues that "their public theology and dedication to social justice

for *all* community members—especially the poor, marginalized, and victimized—underlay and unified progressive evangelicals' respective positions on these social and political issues."[18] Referring to the "Thanksgiving Workshop" group that Swartz focuses on, Gasaway argues that they thought to be faithful to the Bible means to have "equal concern for people's temporal needs and the pursuit of justice through social and political activism."[19] (How "equal concern" can be measured, especially in the attention and energy different groups gave to these factors, remains unspecified.)

To return to our interests: how can these progressive evangelicals help us better understand a Christian analysis of technology? While neither Swartz nor Gasaway isolate the progressive evangelicals' approach to technology, we do see it coming into play with adjectives—technology relates to feminism and family issues, to war, and to poverty. We will consider those connections in turn, but first we will utilize Gasaway's methodology and explore technology in the *Post-American* (later, *Sojourners Magazine*) through the 1970s. How did these progressive evangelicals think about technology, and how did it relate to their other concerns?

Technology

In the summer of 1972, Dick and Joyce Boldrey published "Technocracy and Women's Liberation" in the *Post-American*, less than a year after its founding. Their article highlights the relationship between technology, economics, and sex. They introduce the idea of "technocracy," by which they mean the United States' dominating powers, which have the characteristics of being centered on the economy (as the main goal), short-range (in their consideration of effects), and undemocratic (in that decisions are concentrated in the hands of very few men).[20] Technocracy exploits women, as evidenced by a growing gap between men's pay and women's pay (which had been decreasing). This technocratic effect concerns Christians because we are charged with caring for the widows, which should extend to single women, working mothers, and others. Instead, technocratic institutions have mechanized industry, removed it from the home, and diminished the significance of women. The work women do in the home is minimized and downplayed, and the work women do in the technocratic institutions themselves is not fairly compensated.

The Boldrey's treatment demonstrates the close connection between economic concerns, the relationship of the sexes, and technology. They identify "technocratic institutions" as something larger than specific technological applications, but an overall approach to society that carries values with it. We see here an avenue for evaluating technology, not based on the specific, concrete use, but on how industries develop and impact family life and the relationship between the sexes. This argument reminds me of Wendell Berry's famous essay on his household economy, which included his dependence on his wife for her typing skills.[21] We will look more at implications later, but one thing to note here is that we cannot consider the relationship between the sexes in modern America without being willing to evaluate the economic and technocratic systems within which people find themselves.

Not only does technology impact the way we understand economic systems, but technology as

a governing logic extends below other problems that we experience.

William Stringfellow wrote one of the most in-depth and wide-ranging indictments of technology and technocracy in *The Post-American* and *Sojourners* in the 1970s (the *Post-American* became *Sojourners* in January of 1976). His "Technocracy and the Human Witness" (November 1976) advances an important argument regarding the ills of society commonly recognized by his colleagues at the time. He points at the Vietnam War and the Watergate scandals, calling both of them "symptoms" of a larger crisis.[22] According to Stringfellow, "Since World War II, technology superseded industrialization as the dominant institutional and ideological power in society."[23] We now have a "technocratic totalitarianism" in which the predatory principles of technocracy rule.

This technocratic totalitarianism is widespread. It is visible in media, in surveillance, in subversion of other governments, in banking, and in weapons. Stringfellow argues,

> It is critical to understanding the totalitarian implications of advance technology that one realizes that priority is assumed by technical capability over human discretion in rendering budgets, in making policy, and in ruling society. The basic social premise, under the impact and momentum of technology, is putting into practice whatever becomes technologically feasible. It is the application of every technical capacity, without regard to human critique or control, and without regard to empirical benefit for human life or moral consequence for society.[24]

He points to the example of the atomic bomb: it was made because it could be made. The result is that "humans become adjuncts to technology—robots or puppets deprived or inhibited in the use of the very faculties which distinguish them as human."[25] In fact, technocracy encourages a passive "spectator posture" that does not fit with true human flourishing.[26]

While pointing out the new elements of technocracy, Stringfellow acknowledges that these issues are part of the human situation. He concludes his article by talking about the Fall. He states, "Biblically speaking, that death, incarnate and militant in many forms in an advanced technocratic society such as America, is no novelty introduced by technology, but has been characteristic of every other society in every other era."[27] The Christian call then is the same as it has been: resistance to the status quo, whether that be the status quo of politics or economics or anything else in society.

This larger notion of technology emerges briefly in another broad-ranging interview. In a conversation including about a dozen "young evangelicals" in 1975 Lane Dennis speaks of America's "technological society." He states, "It is quite apparent that technology can be both extremely dehumanizing and very liberating. I am concerned from a theological point of view just what human wholeness means, and how our biblical understanding of that relates to how we live in relation to technological society."[28] Dennis does not develop the point at length since it occurs within a larger conversation, but he does point to the importance of simple living and independence from modern technology. Otherwise, technological society may take over. This "technological society" emerges in various ways, but one of the most obvious—and ominous—is in the narrative of national security.

In February 1977, Wes Granberg-Michaelson published "Curiouser and Curiouser Bomb

Logic," which tied the development of weapons technology to the idolatry of nationalism.[29] In short, he argues that the logic surrounding the use of nuclear weapons and the continued development of them can only be explained by the idolatry of nationhood, spurred on by bureaucratic, technological, and corporate interests.[30] While brief, this piece highlights the company that technological development often keeps: nationalism and economic corporations. Fuller exploration awaits us, but we can briefly flag here the fact that similar arguments about national security are intimately connected with current debate surrounding technology, including the development of artificial intelligence and its integration with weapons technology.

We see this parallel clearly in another article from February 1977—Jim Wallis's "Nuclear War by 1999?"[31] Wallis argues that Christians cannot support the continued development of nuclear weapons simply because Russia continues to develop nuclear weapons. He highlights how religion is used even in the Pentagon in a carefully controlled way to support the status quo. But, he argues, "Resistance to the military aggression of nation-states is always a Christian responsibility. However, the fact that world rulers are now marching us all into nuclear oblivion makes Christian resistance to that insanity an imperative."[32] Such a reminder is relevant for us as we consider technological development in our context. Not only is there the argument related to China's development of artificial intelligence and how that might impact the United States, but there is the potential for a return of a nuclear arms race as the United States suspended a nuclear arms treaty with Russia in February of 2019.[33]

It would be inaccurate to say that the *Post-American* and *Sojourners* is routinely negative about technology. For instance, Jim Wallis wrote a column entitled "Food for War" in March 1975 that criticizes the policy on food aid but acknowledges the importance of providing this help (which relies on technology).[34] Additionally, Wes Granberg-Michaelson wrote an extended piece in November of 1976 on postwar Vietnam, in which he argues for the importance of technology, industry, and agriculture for the society.[35] Considering progressive evangelicals more broadly, Ron Sider's famous *Rich Christians in an Age of Hunger* included inadequate technology as a problem for the poor.[36]

Related Themes

Now that we have explored some specific articles related to technology, we can consider broader related themes that have come through in recent research on the progressive evangelicals. In particular, Brantley Gasaway's thematic treatment of the progressive evangelicals brings technology into the discussion in a few discrete places: feminism, abortion, nuclear weapons, and poverty.

Gasaway notes that the issue of technology was part of the issue as the Religious Right attacked feminism around the 1980 presidential election. Joyce Hollyday, formerly an associate editor at *Sojourners*, clearly saw the relationship of these issues: "It is too easy to blame the disintegration of the family and moral values on the changing role of women while ignoring mobility, technology, materialism, alienation from authority structures, and other factors that have set the tone of the times."[37]

Though not clearly drawn out by Gasaway, another connection exists between technology and

the issues surrounding women's rights. Abortion became a critical fault line, as he notes, and progressive evangelicals opposed abortion. However, they did so without vilifying feminism as a movement, which the Religious Right attempted to do.[38] But what about the very issue of abortion itself? While people have practiced abortion for thousands of years, it is really the technological novelty in the twentieth century that has made abortion more widely available and safe. While we would not want unsafe abortion either, we can easily miss the technicism implicit here: the very fact that the medical technology exists makes abortion a different discussion. Because it is safe and available, and because we have come to see medical technology as a tool to solve whatever problems we have related to our embodiedness, the debate shifts. Interestingly, progressive evangelicals oppose abortion largely for the same reason the Religious Right did: killing an innocent child is wrong. However, abortion as evidence of a growing technicism merits highlighting as well.

The abortion issue relates to what progressive evangelicals called a "completely pro-life" ethic, or a "consistent pro-life" ethic. Not only does abortion destroy lives, but the development of nuclear weapons threaten to annihilate millions of people, people made in the image of God.[39] Under the consistent pro-life ethic, progressive evangelicals actively opposed the continued development of nuclear weapons, and also promoted complete disarmament. In fact, some activists from other traditions, such as Dorothy Day, described nuclear weapons as tools for protecting wealth and power, for perpetuating a global order of injustice.[40] In a way, progressive evangelicals were using the same technological calculus as the Religious Right: evaluate how the tool is used, render moral judgment accordingly. The two groups simply disagreed on the merit of the use of the tool, or perhaps the merit of threatening to use the tool while stockpiling many of them.

As we noted in the previous section, the treatment of technology is not all negative. In these cases, progressive evangelicals promoted forms of technology, seeing them as intimately related to pursuing justice for oppressed communities. Gasaway's inclusion of technology provides further evidence for the fact that, by and large, progressive evangelicals primarily engaged technology adjectivally. Rarely did technology *per se* come under fire; instead, industrial technology, abortifacient technology, and nuclear technology all came into view as subsidiaries of larger issues.

Doctrine

Briefly before drawing conclusions, let us return to some of the doctrinal topics that have played important roles in the various arguments we have traced. In particular, the doctrine of the image of God and the implicit ecclesiology of Gasaway's "public theology of community" require further analysis and critique.

First, what do we make of Gasaway's "public theology of community," the overarching theological idea that seems to draw together the various commitments of the progressive evangelicals? On the one hand, he is right. Repeatedly we see the logic of community impact notions of justice and moral evaluations. But, on the other hand, how successful or useful is this concept for unifying progressive evangelical thought and action? The concept ends up being

fairly thin; it is basically a notion of "equality" rooted in the image of God and then extended to substantive applications. The "image of God" does not play a large role as far as guiding what humans are to do; rather, it underwrites the concept of equality that is requisite for a notion of "justice." Furthermore, justice is rooted in an ecclesiology that makes the church not a witness of a future, already-but-not-yet kingdom, but an efficient actuator of justice in the world as a main task. There seems to be a good measure of realized eschatology thrown in for good measure. At least in Gasaway's research and argument, this is as substantive as the theological background gets. It is a commitment to this vision of the church's task that gives substance to the applications.

This community emphasis also relates to another significant load-bearing wall: the consistent pro-life agenda. This agenda relies on the public theology of community in two primary ways. First, it relies on the public theology of community because the radical equality of the community sets one of the terms for what "life" is, and how justice is determined related to it. Second, it relies on the public theology of community because a consistent pro-life agenda not only makes certain statements about what it looks like to be consistently pro-life, but it also understands the church's task as primarily one of advocacy for such an agenda.

One of the weaknesses of the progressive evangelicals emerges here, and it relates directly to the analysis Swartz provides of their failure in the 1970s. Swartz argues that they failed because they fractured along gender, racial, and ideological lines. But if Gasaway is right, and the prevailing logic is this public theology of community, what else should be expected? If there is nothing more substantive to define the larger community (as a robust doctrinal foundation would provide for along with a robust praxis), then the smaller communities will actually be more effective at doing what the progressive evangelical ecclesiology demands: advocacy. Thus, it is the very public theology of community that not only unites the thinking of progressive evangelicals but also contributes significantly to their fracturing and loss of broader witness.

While the solution to this would take us too far afield from our current concerns, it is helpful to remind ourselves that ethics cannot be separated from doctrine. Right practice and right belief are certainly related in a complex way—I am not implying that we get our beliefs "just right" and then move on to ethics. But oftentimes an overemphasis on certain theological themes, to the neglect of others, can evacuate the Christian core of any distinctive meaning and identity. Other identities will rush in to take its place. Then, you might still have a "public theology of community" that can guide you as you advance equality and justice, but it might not be a distinctively Christian theology.

Conclusion

You might recall that we launched into all of this based on a simple assertion followed by a question. The assertion: Christians must respond to technology. The question: What is so new and urgent about our age? Our exploration of the work of progressive evangelicals in the 1970s has yielded some interesting ways of answering that question.

First, the progressive evangelicals help us to see how easy it is to operate with an over-simplified view of technology. While we did have an exception or two, most progressive

evangelical engagement with technology was based on the idea that technology is neutral. We can only evaluate if we add adjectives. But we have also seen the danger of this approach. If we only evaluate technology with adjectives—biotechnology, military technology, industrial technology, and so on—we are less likely to see that technicism is an underlying cause of many ethical problems. Progressive evangelical analysis and advocacy could have found a more consistent voice across issues if it had followed the lead of folks like William Stringfellow, whose piece on "technocracy" in 1976 called for such engagement.

Second, the progressive evangelicals show us the importance of an orthodox doctrinal core for engaging ethical issues. Now, let me be clear: I am not arguing that the progressive evangelicals abandoned core orthodox beliefs. I am arguing that Gasaway is right; a "public theology of community" was the main theological foundation for their work. But their inattention to some of the larger doctrinal loci—Trinity, incarnation, soteriology, eschatology—actually weakened their ability to stand as a community rather than fracturing into interest groups as Swartz noted in his work.

Christians must respond to technology. We must respond to it more than just adjectivally; we must grapple with the technological spirit of our time. But we must do so without turning our attention away from the church's primary task: bearing witness to the inbreaking kingdom of Jesus Christ, Son of God, crucified, dead, buried, risen, coming again. That hope, that belief, forms the core of any community, and we cannot take that message for granted.

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Ethical Evaluation of New Biomedical Technologies Using Past Case Studies in Pharmaceutical Medicine

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Abstract

Biomedical enhancements have the potential to extend human capacities and significantly improve human life. Consequently, their widespread use may yield greater benefits than current interventions in biopharmaceutical medicine. Ethical assessment of novel biomedical technologies prior to widespread adoption is therefore important.

This essay describes a methodology for an ethical evaluation of biomedical enhancement technologies in the light of ethical findings from cases of past pharmaceutical medicine, looking specifically at the oral contraceptive pill (OCP) and selective serotonin reuptake inhibitor (SSRI) antidepressants. OCPs and SSRIs are enhancements in that they can be used to provide additional capacities (prevention of pregnancy and altered behavioural characteristics respectively) in people who are otherwise well—and experience has shown that these medicines have provided many benefits to human society, despite Christian ethical concerns about their use, largely on natural law grounds.

I describe how the development and use of OCPs and SSRIs, as scientific case studies, can be analysed using ethical criteria for the assessment of biotechnological projects proposed by Neil Messer and Elaine Graham. This analysis shows that three other ethical concepts—autonomy, embodiment, and the *imago Dei*—are important in the ethical evaluation of biomedical technologies, in addition to natural law. Therefore, based on previous experience, a fourfold assessment of future biomedical enhancement technologies—examining their implications for nature, autonomy, embodiment and the *imago Dei*—is likely to provide a more comprehensive and reliable ethical framework for their evaluation than one which relies on natural law alone.

Keywords*: enhancements, case studies, therapeutics, bioethics, contraceptive pill, SSRI antidepressants, autonomy, nature, embodiment, imago Dei.*

Introduction

There has been a longstanding ethical imperative associated with the practice of medicine, which is reflected in the Graeco-Roman tradition of medical ethics, as exemplified by the Hippocratic Oath.[1] Moreover, the practice of medicine has long been aligned with the healing tradition of the Christian church, and there has been a strong commitment on the part of Christian workers and organisations over the centuries to alleviate suffering and improve human welfare.[2]

However, there has been some debate recently about the role that religion should play in bioethics in the contemporary secular world.[3] Nigel Biggar notes three objections have been

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raised about the role of religious ethics: 1) that they are not universally held, 2) that they are not "reasonable" (by a narrow definition of reason), and 3) that they are incapable of assessing modern technologies. I do not intend to explore this debate in detail here, but in this essay I will be countering the third of these objections: that religious ethics—and Christian ethics in particular—are incapable of assessing modern technologies.

Here I propose a methodology for the ethical evaluation of future biotechnological enhancements in the light two previous cases of pharmaceutical medicine which have characteristics of enhancements—the oral contraceptive pill (OCP) and selective serotonin reuptake inhibitor (SSRI) antidepressants. This methodology will show that a more comprehensive and reliable Christian ethical evaluation of future biomedical enhancement technologies will be enabled using a four-point ethical framework including autonomy, embodiment, and the *imago Dei*, as well as nature.

Medicine—From Therapy to Enhancement

During the last century, increasingly specific and sophisticated interventions in medicine have been developed, which have had a profound impact on human health outcomes. In the field of pharmacology, since the mid-twentieth century, there has been a so-called "therapeutic revolution,"[4] an exponential increase in the number of therapeutic drug molecules produced by the research-based pharmaceutical industry.[5]

As a result of an increasingly sophisticated understanding of biochemistry, genetics, and neurophysiology, various future high-tech medical technologies are now envisaged, which have the potential to alter human life and experience profoundly. Some of these are imminent (e.g., genomic medicine), but some are not yet scientifically feasible (e.g., mind uploading[6] and radical cybernetic reconstruction[7]). The latter technologies, which largely seek to divest the human body, are those that are envisaged by the transhumanist movement.[8]

However, definitions of transhumanism regard the use of biomedical enhancement technology as part of a "life philosophy,"[9] whereas here I will be considering the pragmatic process of ethical evaluation of specific novel biomedical enhancement technologies as they become available. I will therefore focus my argument here on biomedical enhancements in general.

Furthermore, in this essay, I will focus on those potential technologies that act primarily in and through the human body, such as medical nanotechnology (i.e., the use of microscopic particles and tools to interact with the body for medical applications)[10] and genetic enhancements (including germ-line modifications).[11] This is because these technologies are most closely approximated by the two past case studies in pharmaceutical medicine I propose—the OCP and SSRIs—in terms of their potentially widespread impact on human life and society.

These technologies are often presented as "enhancements" to human life; that is to say, their stated objective is to increase human longevity and extend human function beyond current normal limits.[12] However, the distinction between an enhancement and a therapy is hard to make,[13] and, in any case, these objectives are not dissimilar to the use of contemporary medicine to increase life expectancy and improve quality of life.

Some philosophers defend the use of enhancements because chemical interventions that are "enhancements" (e.g., the use of caffeinated drinks to improve concentration) are already in widespread use.[14] However, I would argue that this does not exempt them from ethical reflection concerning their use.

Some commentators take a permissive view of human enhancement. For example, Fuller and Lipinska make a case for accommodation of transhumanist philosophy within Christian theology by appealing to humanity's need for *theomimesis* ("playing God") to promote human wellbeing and improve human flourishing.[15] However, they do not discuss the idea of humanity as a "created co-creator," which has been significant in theological discussions of technology adoption to date, and which is clearly relevant to their argument.[16]

However, various Christian writers have been cautious about biomedical enhancements. One objection is that they will lead to social inequality, injustice and even oppression due to the socioeconomic differences between the enhanced and the unenhanced in society.[17] Tracey Trothen has argued persuasively that a key factor in this oppression and injustice is a lack of self-worth among people of marginalised groups in society.[18]

A second objection is that human enhancement challenges an eschatological approach to the *imago Dei*—that humanity is perfected by God through relationship with Christ—because it provides humanity with an alternative, realised eschatology of biomedical immortality. For example, Brent Waters has examined the implications of the adoption of biomedical technology for Christian eschatology.[19] He argues that theological approaches influenced by postmodernity tend to adopt an open view of the universe. This downplays the notion of predestination, he contends, but it also undermines human purpose and destiny. Waters goes on to argue that, if there is no eschatological goal, or *telos*, for humanity, then there is no concept of divine providence, and therefore no purpose to the ordering of creation.[20] Thus, the adoption of radical biomedical enhancement technologies may lead to a realised eschatology of biomedical immortality, and this will not only undermine a Christian eschatology, but also Christian understandings of an ordered creation and of divine providence.

A third theological objection is the attitude of human enhancement technologies to the human body, given the remarkable significance of bodily life in Christian doctrine. Enhancement technologies are envisaged for the purpose of perfecting human function and experience, but Brent Waters notes that human perfection comes at a high price.[21] "The price of perfection for humanity is its deconstruction," he claims.[22] He notes—wisely, in my view—that, with some technological interventions, there is no going back, and that the consequences of human invulnerability are uncertain. Waters argues that, in the incarnation of Christ, the necessity of human finitude and mortality of the body are affirmed. [23] Furthermore, the resurrection of Christ makes possible the resurrection body of the believer and the renewal of creation. While Waters' arguments apply primarily to transhumanist technologies which fully deprecate the body in favour of disembodied life, they suggest that the attitude to, and assumptions about, somatic human life are an important ethical consideration for any biomedical enhancement technology.

Theologians considering the issue of biomedical enhancement rightly focus their discussions on human flourishing as the *telos* of biomedical intervention and what human flourishing

consists in.[24] Gerald McKenny notes that theologies of human nature have not yet engaged fully with the fact that radical biotechnological interventions make human nature malleable and transformable.[25] He explores objections to biotechnology—that biotechnology does not respect creation, it instrumentalises human nature, it interferes with personhood, and it treats the person as an object—and argues that these are not adequate grounds for a complete rejection of biotechnology. On the other hand, he notes that uncritical acceptance of biotechnology and an emphasis on future human flourishing downplays the goodness of creation at the present time.

McKenny therefore argues that neither a complete rejection nor an uncritical acceptance of biotechnological enhancement is adequate, and concludes that biotechnology, "proceeding in an incremental, dialectic way," is not incompatible with the idea that good is grounded in human nature.[26] Importantly, McKenny points out that the problem with ethical evaluation of proposed future biotechnological enhancements is that the ethical implications of these technologies cannot be fully appreciated until after they have been implemented and their benefits and disbenefits have become clear, by which time, of course, it is too late.

McKenny's comments highlight the importance of prospective ethical evaluation of biomedical enhancements prior to their implementation. This is not always easy to do because, by definition, such an evaluation is hypothetical. However, in this essay, I propose an ethical framework for the evaluation of future biomedical enhancements in the light of previous experience with pharmaceutical medicine, looking in particular at two case studies—the contraceptive pill and selective serotonin reuptake inhibitor (SSRI) antidepressants (the "Prozac" antidepressants), both of which were significant developments during the "therapeutic revolution" years of the pharmaceutical industry of the twentieth century and which have characteristics of enhancement technologies.

Past Medicine & Future Enhancement: Creating an Ethical Dialogue

Some pharmacological advances during the "therapeutic revolution" years of the twentieth century have had an impact on the whole of society, not just the health outcomes of the individual, because of their widespread use and their profound implications for human relationships as well as for human health.[27]

Two examples of these are the oral contraceptive pill, which was marketed in the United States in 1960, and selective serotonin reuptake inhibitor (SSRI) antidepressants, such as Prozac, which were introduced in the late 1980s and early 1990s. The contraceptive pill was the first medicine that was taken widely in society by people who were otherwise healthy.[28] Furthermore, by preventing pregnancy and enabling planned parenthood, it not only improved the health and wellbeing of the women using the pill but transformed relationships, marriage as an institution, and society as a whole.[29] For this reason, the use of the contraceptive pill rapidly came to the attention of Christian ethicists. The Roman Catholic church opposed hormonal contraception largely on natural law grounds—because the natural end, or goal, of sex and marriage is procreation, and the contraceptive pill frustrated that end.[30]

Prozac and other SSRI antidepressants were developed as specific treatments for clinical depression, but they have been adopted widely for use in situations where a person has few or no symptoms of depression to enhance personality and to help them feel "better than well." This has led to the so-called "Prozac phenomenon," epitomised by the work of psychiatrist Peter Kramer,[31] which has advocated the use of SSRI antidepressants to enhance characteristics that were previously considered to be personality variants—for example, to help someone to be more socially confident or more assertive in their professional life. SSRI antidepressants have arguably had a significant impact on society as a whole due to their widespread use and their fine-tuned effects on personality and relationships.[32] For this reason, psychiatrists such as Peter Kramer and David Healy[33] have highlighted the possible ethical issues arising from the marketing and use of these drugs. As with hormonal contraception, however, SSRI antidepressants have come to the attention of various Christian commentators.[34] The Roman Catholic scholar John Mark Miravalle has developed an ethical evaluation of SSRI use based on Thomas Aquinas's teleological approach to natural law analogous to the approach taken by the Roman Catholic church with the contraceptive pill.[35]

These two medicines have therefore been used as enhancements to normal human function—with the OCP to confer contraception, and with SSRIs to enable healthy people to feel "better than well"—and, as a result, they have had a significant social and cultural impact on human society. A case study analysis of these two past cases of pharmaceutical medicine using objective ethical criteria would therefore be an important tool to develop an approach to the proactive ethical evaluation of future biomedical enhancement technologies.

The use of case studies is an appropriate way to examine what is known about past medical developments to make an ethical evaluation of them to apply to potential future developments. Case studies are a widely used method in practical theology,[36] so it is a natural development for a case study methodology to be used here to enable a Christian ethical response to biomedical enhancements. This is because a case study has the following characteristics:

- It is a unit of human activity embedded in the real world.[37] The use of case studies is therefore consistent with the "real world" nature of biomedical research.
- It can only be studied and understood in context; the case merges into the context, so the case/context boundary is hard to determine. The development of a biomedical enhancement has a scientific and socioeconomic context, and a case study method would therefore take the context seriously, which is important for applied medical ethical analysis.
- It is good for answering "how" or "why" questions, rather than questions with quantitative answers.[38] The case study is therefore well suited to answering ethical questions, as opposed to those questions which require quantitative analysis.
- It can be used to assess multiple sources of evidence.[39] The case studies in pharmaceutical medicine encompass different domains of evidence from different types of literature—the scientific history of drug discovery, the impact of the drug on society, and Christian ethical responses to the drug—in the same case study, so a case study approach would seem suitable for applied ethical analysis.

- Case studies are helpful for naturalistic research—the exploration of human phenomena embedded in the real world, which accounts for real-world complexity.[40] The cases proposed here are naturalistic, in that they use evidence from the real-world complexity of drug development to develop ethical principles.

However, case study methodology has its drawbacks, and has been criticised for various reasons.[41] First, case studies may lack rigour in some situations; they can be constructed in a non-systematic way, so that equivocal evidence or biased views could affect the conclusions of the study. Second, case studies provide little basis for generalisation; the case study is not a statistical sample as scientific methodology might use, and it is generalisable only to a theoretical proposition, rather than to a population. Third, case studies can be limitless and are in danger of being aimless in their scope.

The first and third of these critiques—the danger of a lack of rigour and the need to define the material—can be averted by applying a clear structure and process to the presentation and evaluation of the case study in its context. The second criticism, about generalisability, might, at first sight, appear to be a legitimate criticism of this methodology. Just two cases of past chemical therapeutics—oral contraception and SSRI antidepressants—are being used to inform ethical reflection on any possible future transhumanist biomedical technologies. Can these two past case studies be representative of all past medical developments?

However, as discussed above, these case studies are more naturalistic than empiricist, and their conclusions concerning ethics of future technological projects are inductive rather than deductive. In any case, as mentioned previously, the two case studies proposed for this project have been carefully chosen because they have the potential to be most relevant to future biomedical enhancement technologies.

Furthermore, the ethical evaluation of the case studies is made robust by examining the cases using objective criteria for ethical acceptability of a biotechnology project. Criteria (from the Greek *krinos*—points of judgement) are important because they provide an objective view from which to evaluate specific cases or instances and provide structure to the resulting discussion. The importance of structure in a case study methodology has already been discussed. Criteria are a means of making information coherent and intelligible;[42] a way to make existential questions universally intelligible.[43]

The objective of universal intelligibility may be contentious from a Christian perspective; because of the notion that Christian ethics are derived from revelation, which is not universally accessible, I maintain that this universal intelligibility is important for three reasons. First, the Christian Gospel claims to be universally applicable to human society, regardless of whether or not it is universally understood or accepted; second, in popular culture, scientific knowledge is often treated as a specialist, esoteric domain and the objective of this project is to develop a public ethical discourse on the evaluation of biomedical enhancement technologies; and third, the ethics of medicine to date have often employed concepts that are not primarily religious in character, and I hope to find common ground and continuity between past and future ethical approaches to medical technology.

I have identified two sets of ethical criteria which would be valuable for determining whether a biomedical technology is acceptable from a Christian ethical perspective. The first of these sets is based on the work of theological ethicist Neil Messer, who has developed four diagnostic questions about whether a biotechnological project is aligned with God's saving work in the world or not.[44] These diagnostic questions would be applicable to biomedical enhancements, as they are essentially biotechnology projects. These questions are as follows:

1. Is the project good news for the poor?
2. Is the project an attempt to be "like God" (in respect of Gen 3:5) or does it conform to the image of God? (Gen 1:26)
3. What attitude does the project embody towards the material world? (including our own bodies)?
4. What attitude does the project embody towards past failures?

The second set of criteria are based on the work of Elaine Graham,[45] who identifies three theological issues that are problematic with the concept of transhumanism and that should be explored with any new biomedical technology. These issues are:

1. Autonomy—new biomedical technologies enable unbridled autonomy in a negative manner.
2. Subjectivity—new biomedical technologies are focused too much on the individual and the individual's subjective experiences.
3. Embodiment—new biomedical technologies interfere with the integrity of the individual body and can therefore have a disruptive effect on the corporate body—the community.

The purpose of these two sets of criteria from theological ethics is to define what aspects of biomedical technology are problematic in respect of Christian ethics. When applied to the case studies, they will help to determine which aspects of these technologies are desirable or permissible from a Christian ethical perspective and which are not.

Messer's criteria are useful because they have been proposed in the context of a study of ethical issues with biotechnology, which is a good place to start in evaluating biomedical interventions as material phenomena. The strengths of these criteria are that they are clearly ethical in nature (concerned with attitudes, justice, and the goods of human life) and that they are firmly located in a Christian view of relationships between humanity and God, and within human society. A weakness of Messer's criteria is that they do not explore the issue of personal autonomy. Regardless of one's commitment to principlism, autonomy is a significant concept in modern medical ethics,[46] and effects on personal autonomy are a matter of concern with future biomedical enhancements given their potential to give rise to injustice and oppression in society.

As criteria with which to assess transhumanist biotechnologies, Graham's three theological issues are not comprehensive in their scope but are significant in their impact. One concerns autonomy, which helpfully complements Messer's criteria. Another concerns subjectivity, which would be useful for exploring the phenomenon of individual experience in transhumanist

technology use and the issue of objectification of the human body by technology at the expense of the human as a personal subject. The third, on embodiment, overlaps with Messer's criteria, but introduces the helpful additional concept of corporate "embodiment" as the community.

Medical Ethics for the Twenty-First Century—A Four-Point Ethical Framework

The use of case studies in conjunction with objective criteria for ethical assessment of biomedical technologies has the potential to facilitate a fruitful dialogue between previous experience in pharmaceutical medicine and future biomedical enhancements and to enable the identification of ethical issues with these future technologies.

I have used this methodology to make an ethical evaluation of two past cases of pharmaceutical medicine—the oral contraceptive pill and SSRI antidepressants—both of which have some of the characteristics of proposed biomedical enhancements. Both these developments have been criticised in the past from a natural law perspective and yet, despite these criticisms, experience has shown that both medicines have had a positive impact on human flourishing.

Application of Messer and Graham's criteria to these two case studies shows that the ethical concepts of autonomy, embodiment, and the *imago Dei* are relevant to the ethical evaluation of biomedical technologies as well as considerations of nature and natural law. I contend that this fourfold ethical framework of nature, autonomy, embodiment, and the *imago Dei* will enable a more comprehensive and reliable ethical evaluation of future biomedical enhancement technologies than an approach based solely on natural law alone, as has been used in pharmaceutical medicine to date.

A detailed analysis of the case studies and discussion of the themes of these four domains will be the subject of future publications, but the remainder of this essay provides a preliminary description of the findings.

Autonomy

Autonomy concerns the capacity of a moral agent for self-government or self-rule,[47] and has been cited as a principle of medical ethics, along with beneficence, non-maleficence and justice, in a principlist approach to medical ethics.[48] The concept of autonomy was developed at length in the modern era, but Christian ethicists have been wary about autonomy in the healthcare setting because of concerns about the limits of its goodness[49] and the obligation that it might place on the clinician.[50] However, I maintain that personal autonomy is a prerequisite to the adequate exercise of Christian moral responsibility, and the concept of autonomy is an important point of connection between a future biotechnological world and medical ethics and practice to date.

On application of the criteria to the case studies, issues of autonomy are raised directly by Graham's first point about autonomy, and also indirectly by Messer's question about whether the technology is good news for the poor. In addition, Graham's third point about subjectivism in the use of technology has implications for autonomy in that the significance of human subjective experience may be related to the importance of autonomy in liberal modernity.

There are autonomy-related issues with both the contraceptive pill and SSRI antidepressants. Widespread use of the contraceptive pill has, in theory, increased personal autonomy in life choices for women using the pill. However, introduction of the pill has also led to the "coital imperative"—where women have felt compelled to have sex because there is no clear reason not to.[51] Furthermore, the methods of distribution of the contraceptive pill in developing countries have previously been criticised as coercive in a way that does not respect the rights of local women.[52] Similarly, while SSRI antidepressant treatment may enable people with depression to think more rationally and make better choices, in some circumstances these drugs may limit personal choice—for example, because of their withdrawal effects which may make it harder for a user to stop treatment when they want to or because of their potential for suicidal ideation in rare cases, leading to loss of insight and responsibility and possibly criminal acts.[53] Both these cases show that effects of the drug on personal autonomy are varied and need to be carefully evaluated.

Future biomedical enhancements will therefore need to account for the impact of the technology on the autonomy of the user and other stakeholders in society. It is often supposed that future biomedical enhancements will enable unbridled autonomy on the part of the user.[54] On the contrary, experience with past pharmaceutical medicine indicates that, while biomedical technologies may be implemented ostensibly with autonomy, autonomy may be eroded by unintended consequences in the light of ongoing technology use or the way the technology is implemented across society. Concerning the impact of a technology on autonomy, therefore, rather than wondering what liberties the technology might *permit*, it would be advisable also to consider what aspects of human life it might *restrict*. This will enable ethicists—and indeed all stakeholders—to determine the full effects that adoption of a biomedical technology might have in a social context and pre-empt any issues relating to oppression and coercion related to universal availability of the technology.

Nature

Natural law theory is based on the idea that "the good of every organism is to attain fully its natural activity,"[55] and has been a significant factor in medical ethics to date. While there have been various approaches to natural law over the centuries, the Thomist approach to natural law—that formulated by Thomas Aquinas—is most applicable to medical ethics, and this is what I refer to here. The Thomist approach is *teleological*—or goal-oriented—in that the nature of a creature is directed to good ends, which enable the creature to flourish.

The Roman Catholic church's ethical concerns about both the oral contraceptive pill and SSRI antidepressants have largely rested upon a Thomist natural law approach.[56] However, the Roman Catholic church has been accused of using an interpretation of natural law that is too physicalist in its opposition to the use of the contraceptive pill;[57] that is to say, it focuses too much on the physical operation of the body rather than the relational or moral goodness of the natural ends to which the body is directed. Furthermore, the application of natural law to SSRI use reveals various flaws in the applicability of natural law in medical ethics, for example, the potential for selective application of natural law to different medical interventions.[58]

Moreover, natural law will become more problematic as a source of medical ethics as more biomedical enhancements become available because future biomedical technologies may increasingly render human nature malleable and indeterminate.[59] It will therefore be harder to see what goods are grounded in human nature when radical biomedical technologies are applied. It will be especially problematic for technologies that are a) more invasive (e.g., neural threads to enable digital connectivity of the brain), b) less tangible (e.g., gene therapy), or c) where there is a high degree of low-level hybridisation (e.g., the use of nanotechnology for surgery and cell repair). Nevertheless, as stated earlier, McKenny has argued that "incremental" adoption of biotechnology is not incompatible with the idea that good may be grounded in human nature.[60]

As already mentioned, the application of Messer and Graham's criteria to the case studies does not directly give rise to issues concerning human nature and natural law. Nevertheless, there are nature-related aspects of the case studies—for example, the significance of the "biological model" of depression, which states that the phenomenon of clinical depression is rooted in an imbalance of neurotransmitters in the brain.

Because of this, my view is that natural law, and effects on nature, will remain a relevant area of discussion with future biomedical enhancement technologies, and should be part of the proposed ethical framework. In this vein, Michael Shapiro comments that the question of how natural an enhancement is may be a good entry point into an ethical evaluation of a new biomedical technology, even if it cannot constitute the whole discussion.[61] Indeed, I would suggest that there may be a case for the development of a natural law approach that is more virtue-based and appropriately teleological for a world of radical biomedical technologies.

Embodiment

Some proposed future biomedical enhancement technologies—such as the use of cybernetic prostheses—denigrate the human body, and therefore have been criticised from a Christian ethical perspective because of the significance of the material body in Christian theology.

It is therefore reasonable to determine the likely effects of a biomedical enhancement on the importance of the body. This is addressed by Messer's question on the attitude of the biotechnology project towards the material world (including our own bodies); furthermore, Graham's third criterion accounts for the impact of the technology not just upon the individual human body, but the corporate body of society.

The use of both the contraceptive pill and SSRI antidepressants are largely unproblematic from a perspective of individual embodiment in that both agents exert their positive effects for human life and flourishing in and through their actions on the human body. However, there are complications; the effects of the contraceptive pill have not been regarded in a wholly positive light from a perspective of embodiment. For example, Jutte has claimed from a feminist perspective that the use of the contraceptive pill has "disembodied" women in that it has denigrated their bodily value by rendering their bodies solely objects for male sexual desire[62] when, in fact, proper desire should be for the whole person, not just their material body. Furthermore, while both the contraceptive pill and SSRI antidepressants may be relatively

unproblematic concerning its effect on the individual body, they have both, to some extent, disrupted the corporate body of human society because of the effects of their widespread use.

It is important, therefore, that future biomedical enhancement technologies are characterised by a positive and affirming approach to the material world and to the human body, both individual and corporate. Such an approach would honour the remarkable significance of somatic life in Christian theology and the importance of the resurrection body in the eschatological destiny of the believer. In addition to ensuring appropriate embodiment, the technology should ensure that the identity of the transformed human person is preserved, since identity is closely aligned with bodily form, both theologically and psychologically.

A key question to ask of a biomedical technology is not just how will it change an individual person's body, but how will it change the corporate body of the community in which they live or of human society as a whole? The right approach to the value of the individual body in relation to the material world will, in turn, ensure that the corporate body of humanity—human society—is able to flourish and is not compromised. Another key line of enquiry of a biomedical technology is not just how it might change a person's body but how it might change their identity.

The Imago Dei

The Christian doctrine of the image of God—that humanity is made in the image and likeness of God (Genesis 1:26)—has important implications for understanding human nature, and the relationship of human beings to God, and to each other. However, the meaning of the *imago Dei*, as it may be derived from biblical exegesis, has been hotly debated.[63] Nevertheless, in the history of Christian thought, four main approaches to the *imago Dei* have been proposed: the substantive, functional, relational, and eschatological approaches.[64]

An analysis of the effect of the technology on the *imago Dei* in humanity is directly invited by Messer's second criterion: Do biomedical technologies enable humanity to conform to the image of God, or are they an attempt to be like God? Answers from the case studies to Messer's fourth question, on the attitude of the technology to past failure (in effect, the extent to which the technology is hubristic), also contribute to this discussion on imaging God versus being like God. In addition, the answers to Graham's third criterion concerning subjectivity have a bearing on the approach to the *imago Dei* that a technology might embody, given that some approaches to the *imago Dei* are more individualistic than others.

Analysis of the two case studies indicate that, while the use of the contraceptive pill and SSRI antidepressants in society have enabled humanity to wield considerable power and, in a sense, be "like God," these biomedical technologies have also had benefits for interpersonal relationships and enable users to fulfil their vocations in the world. Use of these technologies therefore enable humans to image God in ways that are functional, relational, and possibly eschatological, not just substantive. This contrasts with some approaches to human enhancement that emphasise, or are solely concerned with, human attributes, and therefore reflect mainly a substantive approach to the *imago Dei*. Indeed, rather than enabling humanity to fully conform to the image of God, some biomedical enhancement technologies are clearly a means of being like God in that they

emphasise the use of technology to manipulate, redesign, and "re-create" the body at will.

It is to be hoped that, rather than being attempts to be like God, applications of future transhumanist technology would enable people to conform more fully to the image of God. It would therefore be problematic from a Christian perspective for a biomedical technology to actively enable a person to remodel their body and mind according to their will, in their own image (*imago hominis*).[65] Furthermore, the enhanced person should reflect the *imago Dei* in all its dimensions, as developed in the theological literature to date.

A useful question to ask is: What kind of *imago Dei* does the technology reflect? Is it concerned entirely with individualistic, material human attributes, or does it also reflect and uphold the relational element of what it means to be human and the vocational aspect of humanity carrying out God's purposes in the world? Furthermore, does the technology enable the eschatological development of the person towards an awareness of a transcendent destiny, or does it merely aim to abolish human finitude, with no reference to its effects on overall flourishing of the person?

This four-point ethical analysis has the potential to provide a more robust framework for the ethical analysis of biomedical enhancements than natural law has done with previous medical technologies. It has been firmly grounded in previous experience with medical technologies with enhancement characteristics and is designed for the proactive evaluation of a proposed biomedical enhancement technology to obtain an outline evaluation of its Christian ethical acceptability prior to its implementation. While it may not be adequate for every possible future enhancement technology, it will provide a good preliminary assessment and will help to identify any new ethical issues that may not be apparent at the outset. In the next section, I provide a preliminary worked example of how the four-point framework might be used.

The Four-Point Ethical Framework: A Worked Example

As discussed previously, some pharmaceutical technologies to date—for example, the contraceptive pill and SSRI antidepressants—have had significant effects on human society, as well as individual health and wellness. In the future, more radical biomedical technologies may be introduced that are essentially pharmacological interventions.

For example, in the future, it may be possible to have a "magic implant" fitted which releases a combination of metabolically active nanoparticles and gene therapy substances (viral vector and nucleotide substances) that would have the effect of radically extending the human lifespan to, say, 200 years, improving physical functioning during that lifespan and effectively eradicating dementia and cognitive decline. Once such an implant has been developed commercially, it could be inexpensive enough to distribute to all adults in the population and could be fitted as a simple, minor surgical procedure at a local hospital or clinic.

Such an intervention would clearly have enormous health and wellbeing benefits for the individual. It would also have a profound impact on society and could lead to the various social ethical issues related to extended longevity described earlier. These are issues to which governments, policy makers, and corporations would need to respond.

However, how does this technology look when analysed according to the domains of autonomy, nature, embodiment, and the *imago Dei*? In terms of autonomy, it is unlikely that such an implant acting at the biochemical level would exert effects on freedom of decision-making, unlike some psychoactive drugs. The implant could be fitted at will—but could it be removed at will, with no adverse effects other than the loss of its longevity benefits, if the user no longer wished to use it?

As far as nature is concerned, the insertion of such a "magic implant" with radical whole-body systemic effects constitutes an intervention that prevents the person fulfilling their natural attributes and function, in the same way as hormonal contraception does, if viewed from a natural law ethical perspective. However, such an intervention appears to be more aligned with the natural ends of human bodily life than, say, radical cybernetic remodelling, and there would be significant potential ethical benefits of the implant if it were used well by the user, to good ends in relation to flourishing of the whole person and of society. The "unnatural" nature of the implant therefore does not necessarily render the intervention unethical from a broad Christian ethical perspective.

Then there is there is the question of embodiment. While the "magic implant" would be an invasive intervention, it would still exert positive effects in and through the human body and would enhance bodily life rather than undermine it, as opposed to mind-uploading and radical cybernetic remodelling, which negate the body and marginalise its significance. Indeed, drug-eluting stents and implants are already in use primarily to increase life expectancy—for example, the use of anticoagulant-eluting stents to improve life expectancy in coronary disease or stroke. These are essentially enhancements, albeit more minor than the "magic implant" proposed here, in terms of quantitative effects on longevity. Consequently, in terms of embodiment, such a "magic implant" is, in fact, similar to some of the implants used at the current time in terms of ethical status, even if its clinical utility is greater.

What are the implications of such a "magic implant" in terms of the *imago Dei*? The answer here is more complex. A "magic implant" would offer considerably extended longevity, yet with the possibility of eventual death and finitude. Such longevity has the potential to transform family and societal relationships in the same way that hormonal contraception has done and lead to positive opportunities for individuals to do good and improve society. This would be positive in terms of a relational approach to the *imago Dei* and would also possibly benefit a functional approach to the *imago Dei*—extended longevity would probably benefit someone's ability to serve God in the world and exercise their God-given vocation. The potentially interesting effect of such a technology is on the eschatological approach to the *imago Dei*. The question is whether the technology would enable the person to achieve their eventual destiny of Christlikeness and being with Christ after life in this world. The longevity provided by the technology might indeed help the user to grow towards Christlikeness but, if longevity became extended indefinitely, then when would the person achieve their eventual destiny of being with Christ beyond this world?

This would be a particularly significant issue if it were possible, for example, to extend life even further by replacing the "magic implant" contents every 100 years, thus enabling the person to

delay death indefinitely and be effectively immortal. This would not only render obsolete many aspects of medical care in the face of human suffering but would undermine an individual's finitude and hinder their ultimate fulfilment of a destiny with Christ beyond this world.

However, it would be a man-made immortality. A situation might arise where there were insufficient implant replacements for all citizens, either due to lack of availability or funds. How then would it be decided who lives and dies? Of course, similar ethical decisions about resource allocation are currently made about expensive treatments for rare diseases on a consequentialist basis. However, current resource allocation decisions are concerned with providing a therapy for a disease which may only have a marginal impact on a person, whereas this future situation is about withholding a life-giving enhancement, which is much more problematic.

If, on the other hand, the "magic implant" gave a single finite increase in longevity, then the key question for potential users of a such an implant would be: when and how might death come? Of course, some "magic implant" users might be killed in a road traffic accident at the untimely age of 120. There is then the question of whether there might be any adverse—or indeed potentially fatal—unintended consequences of long-term use of the implant. Unintended consequences have been a common issue in ethics of medical treatment to date, and there is no reason why this might not still be the case in future.

The analysis of the "magic implant" technology according to this four-point ethical framework indicates that, while a single-use medical technology that increases longevity may be culturally alien to current society and will introduce some ethical issues, it is not necessarily a technology that is unacceptable from a perspective of Christian ethics and a Christian view of human life. The key caveat is the effect of the technology on human finitude; the problem with medical technologies that confer "immortality" is that, firstly, they delay the person's realisation of their ultimate destiny in Christ and, secondly, they bring with them the ethical problems of an "immortality" that is dependent on human initiative.

Conclusion

In this essay, I have shown how a case study methodology, using past cases of pharmaceutical medicine that have characteristics of enhancement technologies, analysed by specific criteria, can be used to provide a four-point ethical framework for ethical evaluation of future biomedical enhancements. I have also provided a preliminary discussion of some of the findings and a worked example of a "magic implant" for life extension.

This four-point ethical framework has the potential to provide a more robust and fruitful ethical evaluation of future biomedical technologies than a natural law approach alone, such as that which has been applied in pharmaceutical medicine. This will provide a holistic evaluation of a biomedical technology in its societal context and ensure that future biomedical technologies with potentially far-reaching implications for human life and flourishing can be given a robust Christian ethical evaluation in the context of medical ethics to date.

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A Theology of Human Limitation and Medicine

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Abstract

Christians view sickness as a part of life. Yet, modern medicine finds little purpose in the embodied human who is also a spiritual being. While Christians live with the two-fold reality that sickness and death will occur, they do not need to languish without medical treatment. Yet, the goods of health and life need to be sought within ethical limits and always with a Trinitarian focus. This article will offer a theological perspective on human limitation and medicine. I will first present a brief theology of sin and death. Many Protestants in the Augustinian tradition trace the origin of both spiritual and physical death to original sin. Second, I will offer a theology of illness. Christians have recognized that, postlapsarian, illness may have spiritual or physical causes. After the theology of illness, I will, third, describe a theology of medicine. Medicine is evidence of God-given human ingenuity, but, in the end, no amount of medical treatments can prevent death—only forestall the inevitable—and must be used within limits. My fourth section outlines a theology of human limitation. While Christians understand the Christ-centered boundaries of medical use, transhumanism vociferously rejects human limitation by encouraging unmitigated use of the medical industry to postpone—or even defy—death. As a theological corrective to transhumanism, I offer a Christian critique of transhumanism, with emphasis on limitation in community. I conclude with a biblically based approach to medicine that acknowledges the intertwined body and soul, individual and community.

***Keywords**: limitation; medical ethics; theology of illness; transhumanism*

Introduction

Christians view sickness as a part of life. Yet, modern medicine finds little purpose in the embodied human who is also a spiritual being. Gerald McKenny believes that "the loss of ideas of providence . . . removes the incentives to find any religious meaning for suffering, the mechanization of nature means that suffering from natural causes is no longer an inevitable feature of the world."[1] Since suffering is unnecessary, there is little room for theology in modern medicine, which might offer a spiritual meaning for illness.

Concurrently, Christians live with the two-fold reality that sickness and death will occur, but they do not need to languish without medical treatment, nor would they necessarily find existential meaning in corporeal suffering. Health and life are valuable goods that may be pursued. The goods of health and life need to be sought within ethical limits, however and always with a Trinitarian focus. Keeping the story of the blind man in mind, Christians may take a "both-and" approach to the purpose of illness and medicine. It is both an issue of transcendent reality and immanent humanity. Sickness can be an opportunity for spiritual maturity and availing oneself of medical care.

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This article will offer a theological perspective on human limitation and medicine. I will first present a brief theology of sin and death. Many Protestants in the Augustinian tradition trace the origin of both spiritual and physical death to original sin. Second, I will offer a theology of illness. Christians have recognized that, postlapsarian, illness may have spiritual or physical causes. In the case that illness has a physical rather than spiritual root, illness may provide Christians the opportunity to depend on God and grow deeper in faith. After the theology of illness, I will, third, describe a theology of medicine. Christians may utilize healthcare without worrying that they are "usurping" the plans of God. Indeed, medicine is evidence of God-given human ingenuity. Limitation recognizes that modern medicine is necessary for wellbeing, but, in the end, no amount of medical treatments can prevent death—only forestall the inevitable. Even so, rejection of human limitation is a constitutive feature of modern, western medicine, with even palliative care being reframed as "not on extinguishing the denial of death but on the relief of suffering."[2] My fourth section outlines a theology of human limitation. While Christians acknowledge that humans are limited and understand the Christ-centered boundaries of medical use, transhumanism vociferously rejects of human limitation by encouraging unmitigated use of the medical industry to postpone—or even defy—death. As a theological corrective to transhumanism, I offer a Christian critique of transhumanism, with emphasis on limitation in community. I will conclude with a biblically based approach to medicine that acknowledges the intertwined body and soul, individual and community.

Although disease and premature mortality may be addressed by medicine, when medical limitation is rejected, hubris takes its place. This may come in a transhumanist form, but it may also be more covert, for instance the proclivity towards vitalism and life-extending medicine. Technological medicine promises everlasting physical life. It provides the illusion of control, perfection, and "salvation" from the world. In this way "health replaces salvation . . . medicine offers modern man [sic] the obstinate, yet reassuring face of his finitude"[3] through providing technical cures to what is ultimately a metaphysical problem—the fear of death.

A Theology of Sin and Death

Death and illness are facts of life. Christian theologians trace the advent of physical death and illness in Scripture. In any rendering of creation, from day-age theory, to intelligent design, to evolutionary theory, it is logically impossible that animals and plants lived and reproduced but did not die. Herbivores—both human and non-human animals—under a day-age system, would have needed to kill plants for substance and were given all vegetation for food. Of course, it is possible that the ʾadam[4] and other creatures only ate fruit, but this would be contrary to both biblical and scientific understandings of the presence of land creatures—and their digestive systems—at the time of creation.

In either intelligent design or evolutionary theory, the billions of years between creation and the appearance of the hominoids would have resulted in a planet overrun with species. Therefore, some would argue that death had to be a part of the created order,[5] even before humankind was created in the Garden of Eden. Under this line of reasoning, natural death had no moral value. It was neutral and inevitable.

Original Sin

Humans were created "very good" (Gen 1:31), made in the imago Dei, and granted freedom. John Calvin writes, "the original freedom of man was to be able not to sin."[6] In this freedom there was but one stipulation. Genesis 2:16–17 states, "And the Lord God commanded the ['adam,] 'You are free to eat from any tree in the garden; but you must not eat from the tree of the knowledge of good and evil, for when you eat from it you will certainly die'" (NIV). This prohibition was, according to Calvin, "a trial of obedience, that Adam, by observing it, might prove his willing submission to the command of God."[7] Both humans disobeyed God and ate of the fruit. This rebellion has been dubbed "original sin."

Whether it is the woman or the man that the original original sin can be attributed to is debated. Some scholars have focused on a re-reading of the first sin as sexism or pride; thus, they maintain it was the man who sinned while changing the content of that sin.[8] Others have implicated the woman for the temptation, sin, and thus responsibility for original sin. In The Woman's Bible, Elizabeth Cady Stanton and editors opine, "as our chief interest is in woman's part in the drama, we are equally pleased with her attitude, whether as a myth in an allegory, or as the heroine of an historical occurrence. The unprejudiced reader must be impressed with the courage, the dignity, and the lofty ambition of the woman."[9] John Calvin takes a decidedly harsher reading of the woman's "ambition" and condemns

> this impure look of Eve, infected with the poison of concupiscence, was both the messenger and the witness of an impure heart. . . . It is, therefore, a sign of impious defection that the woman now judges the tree to be good for food, eagerly delights herself in beholding it, and persuades herself that it is desirable for the sake of acquiring wisdom.[10]

More significant than who is most culpable for sin is that, according to Christianity, all people are impacted by the original sin and that redemption is only in Christ.

Indeed, in all branches of Christian theology, all people are affected by original sin, except for Christ.[11] In 1854, Catholic theology declared that the Virgin Mary was conceived and born without original sin. Catholic theology also holds that John the Baptizer was conceived in original sin, but born without it (Luke 1:41). I will continue to refer to original sin being transmitted to "all" human beings, with the understanding that Jesus Christ is exempt under Christian theology.

At the same time, the extent to which original sin has corrupted humankind is debated within the Christian tradition. In Catholicism, the original perfection of human nature is injured, but not obliterated. Thomas Aquinas calls original sin a "sickness" which is unequally pervasive among persons.[12] For John Calvin, the damage of original sin is total and "may be defined a hereditary corruption and depravity of our nature, extending to all the parts of the soul, which first makes us obnoxious to the wrath of God, and then produces in us works which in Scripture are termed works of the flesh."[13] Augustine speculated that original sin originated from a physical source, such as concupiscence in intercourse,[14] and therefore no one can escape the spiritual and physical consequences of original sin. Interestingly, if Augustine was correct, then children born from assisted reproductive technologies would not have original sin.[15] The

consequences of original sin (and other sins of omission and commission) include spiritual death and physical death, which are outlined in the Christian holy book—the Bible—and in theological exegesis and commentary on the Scriptures.

Spiritual Death

St. Paul gives an account of spiritual death as a result of human sin in Romans 5:12–15 by connecting the first sin to the redemption of humanity through Christ. In this case, Christ acts as an Adamic "type" who corrects and addresses the sins of the root of humanity vis-à-vis the root of salvation—Christ. Paul declares,

> Therefore, just as through one man sin entered into the world, and death through sin, and so death spread to all men, because all sinned. . . . For if by the transgression of the one the many died, much more did the grace of God and the gift by the grace of the one Man, Jesus Christ, abound to the many (NASB).

Various theologians have attempted to articulate the two-fold "human condition"[16] of soul and body, with the understanding that because of sin, humans are subject to spiritual death as well as physical death and disease.

Physical Death and Disease

Physical death is a direct result of the fall of humanity. Genesis 3:19 proclaims "for dust you are and to dust you will return" (NIV). This statement is typically interpreted as mortality entering the hitherto immortal human being. Lifespan is fixed, according to Genesis 6:3. This is likewise confirmed by scientific data.[17]

The Scriptures point to various modes of death and dying. In some cases, an otherwise healthy individual came to the end of life unnaturally. Such was the situation when Cain murdered his brother Abel (Gen 4:8). In other cases, the Bible simply records death as part of the world. These are natural and supernatural causes of death. In Exodus, plagues kill the Egyptians because of God's intervention (Exod 7ff). In addition to recording death, the Scriptures also describe diseases and discomfiture—both physical and mental.

In the Pentateuch, and especially in the priestly cleanliness codes of Leviticus, ritual uncleanliness is discussed. Note that "uncleanliness" and disease cannot be conflated in all circumstances. For instance, menstruation is ritually unclean, but not a disease (Lev 15:19). However, leprosy is both ritually unclean and a disease (Lev 13:2). In addition to physical diseases, the Bible also records emotional distress. The book of Job provides perhaps the most comprehensive description of emotional suffering as a result of physical catastrophe in the Bible. Similarly, the Lukan pericope of Jesus in the Garden of Gethsemane provides an intense look at mental anguish caused not by physical suffering but by the inevitability of torture (Luke 22:44). The Jewish and Christian Scriptures provide ample evidence of spiritual death, physical illness, suffering, death, and mental distress—all ultimately tracing back to the fall of humankind in Eden. Whereas soteriology describes salvation and redemption from spiritual death, theologies of illness attempt to make sense of the lived reality of physical illness and death. The remaining sections will focus on the Christian theology of illness to narrow the scope of the paper.

A Theology of Illness

Christians have sought to understand death and disease in both spiritual and physical terms. A theology of illness offers a spiritual explanation for suffering by identifying personal sin as one contributing factor in sickness and death and also finds meaning in sickness unrelated to personal sin.

Illness as Sin

In the Christian tradition, illness has been traced to both spiritual and physical causes. While modern physicians—both Christians and non-Christians—would not likely suggest a spiritual etiology for physical illness or disease, historically there has been a strong link between sin and illness, including death. Both Scripture and Church teachings have provided a theology that, at times, indicated that illness had a spiritual root.

The deaths of Ananias and Sapphira in Acts 5:1–11 attest that personal sins can cause bodily harm and, in this case, death. In this story, a couple lies about the price of the property they sold and "conspire[d] to test the Spirit of the Lord" (NIV). Notably, they did not need to lie, but chose to be deceptive. Peter confronts them separately and each one is stuck dead. The Bible records that "great fear seized the whole church and all who heard about these events," as their death was directly tied to the sin—in this case, falsehood.[18] Of course, deception, lies, or sin would not necessarily correspond to death or sickness. In the case of Ananias and Sapphira it seems that it was their collusion with each other and the unfounded nefariousness had dire consequences.

1 Corinthians 11:29–30 confirms that sickness and death can be a result of personal sin. Paul warns, "For he who eats and drinks, eats and drinks judgment to himself if he does not judge the body rightly. For this reason many among you are weak and sick, and a number sleep" (NASB). Sleep is a euphemism for death. It appears that in this congregation, people were attending services without a proper disposition. In this situation, people who partook in table fellowship without first being in a righteous relationship with God faced repercussions.[19] Indeed, the Catholic practice of confessing sins before receiving the Eucharist, and many different prayers petitioning God's forgiveness in ecumenical liturgies, point to the connection between the spiritual and the physical.

Although many people have surely been to a church service without a proper spiritual disposition and not suffered an illness, the biblical stories, theological reflection, and experience have contributed to Church teachings on illness and sin. The Fourth Lateran Council, in 1215, advises, "since bodily infirmity is sometimes caused by sin . . . when physicians of the body are called to the bedside of the sick, before all else they admonish them to call for the physician of souls."[20] Utilizing a priest before the doctor is in keeping with the Christian belief in non-dichotomous body and soul. This has, at times, placed more weight on personal causes of illness to the exclusion of purely physical ones.

Guenter B. Risse observes that "the church continued to emphasize the primacy of spiritual over corporeal healing"[21] during the Middle Ages. Therefore, treating the soul—through confession

and reconciliation—was essential, or even preferable, to medical attention. In the event that illness is not caused by personal sin, theologies of illness have sought to address the meaning behind physical and mental suffering in spiritual terms.

Illness as Growth

Health is fleeting and disease can strike at any time. Accidents cause disability. Death can be postponed, but never prevented altogether. In trying times, Christians may question the meaning of suffering, the purpose of illness, and God's benevolence. John 9:2–3 records the apostles' reaction to a blind man. They ask Jesus, "'Rabbi, who sinned, this man or his parents, that he would be born blind?' Jesus answered, 'It was neither that this man sinned, nor his parents; but it was so that the works of God might be displayed in him'" (NASB). Although the answer may seem unjust to modern, secular listeners, Jesus' reply points to a larger reality beyond human understanding. Illness and disease are made intelligible within God's cosmology; God provides both the meaning and the balm for those suffering.

Christians can also view illness as an opportunity for spiritual growth. This is clear in Romans 5:3–4, where Paul claims "we rejoice in our sufferings, knowing that suffering produces endurance, and endurance produces character, and character produces hope" (ESV). Catholic social teaching reiterates redemptive suffering as well. In Evangelium Vitae John Paul II maintains that suffering could be "a factor of possible personal growth."[22] When a Christian is physically ill, she might find purpose by practicing faith and depending on God.

This does not mean that all suffering is a result of sin or that all illness will be meaningful or redemptive. Illness and death may have natural or supernatural origins—the latter of which is amply demonstrated in the book of Job. Moreover, the "benefits" of suffering do not give license to inflict harm on others for the sake of development, nor does it excuse those who refuse to comfort people in physical or mental anguish.

Moreover, humans are not at liberty to claim access to the unrevealed purpose of God or determine who should suffer and who should be cured. Furthermore, it is not always the case that the individual herself finds meaning in suffering. A Christian theology of illness indicates that physical tribulations may be redemptive, but a theology of medicine endorses the option to seek medical attention.

A Theology of Medicine

Since it is not always the case that illness is a result of personal sin, nor that illness is a cause of personal growth, Christians can and do take a scientific approach to disease. It should be stressed that, especially in the face of acute pain or a life-threatening disease, time and energy need not be wasted trying to determine if the illness is supernatural or natural, nor should treatments be delayed in favor of personal growth. Christians may simultaneously seek medical and spiritual "treatments." A basic theology of medicine is premised on the acceptability—not requirement—of medical intervention, in tandem with the recognition of human limitation. In this way, it ought to be similar to the biomedical principle of respect for autonomy.[23] Medicine is an option, not an obligation.

The Good of Medicine

Mortality may encompass a susceptibility to illness, but human intelligence—a gift from the Creator—has resulted in magnificent cures and treatments for diseases. Christians have historically accepted the use of medicine to treat illness and postpone death. There are, however, Trinitarian Christians in all denominations who will not use medicine or undergo surgery for various reasons, including theological ones.[24] Legally and ethically, any adult who has capacity can refuse any medical intervention—including those that extend and prolong life—for any reason.

Thus, doctors and nurses, medicine and hospitals, treatments and cures have been viewed by many Christians as acceptable forms of medical intervention. Christian hospitals and healthcare organizations, such as Dignity Health and the Catholic Health Association, take a missional approach to medicine.[25] The modern Christian generally takes illness at face value and attributes a physical cause to a physical disease, to be cured or treated by physical means. Even cognitive behavioral therapy (CBT) is becoming more common for "mental health," and literature demonstrates the connection between "positive thinking" and physical healing.[26] Exceptions within a Christian theology which maps a physical condition onto a physical origin may include addiction,[27] mental health,[28] and sexual disorders,[29] which are still viewed by some as connected to personal sin.

In all cases, though, Christians are at liberty to take precautionary measures to avoid illness, pursue a course of treatment when sick, and enjoy recovery and rehabilitation when possible. Medicine cannot be endlessly pursued, however, for Christians also regard medical interventions should be circumscribed within a theological worldview.

Limitation in Medicine

Christians believe in a spiritual life beyond the body. Thus, "physical ailments are not just physiological problems to be solved by any available means. Rather, they are spiritual challenges that must be met in a way in accordance with the dignity of the human person,"[30] according to Janet Smith. Human dignity requires courage in the face of what cannot be altered and wisdom in medical decision-making. It also includes recognition of medical limitation. James Gustafson comments, "scripture provides data and concepts for understanding the human situation, both in terms of its limits and its possibilities."[31] We are limited by our bodies—mortal and decaying. We are limited by technological advances, and we are limited to the era and culture that we are born into. Human beings may work for medical breakthroughs or accept our physical condition, but regardless, both medicine and humans are limited. Indeed, rationing,[32] healthcare allocation,[33] and therapeutic parsimony[34] are discussed in medical ethics, but these tend to be based on a reaction to limited resources, not a Christian understanding of limitation.

Yet, conceptually, limitation as a theological concept is relevant for the medical industry as well as Christians who might find themselves healthcare provider or healthcare giver. Particularly as modern Western, technocratic medicine expends vast amounts of financial and physical resources on luxury medical goods, elective treatments, lifestyle pharmaceuticals, and futile

medical procedures[35] limitation is an appropriate and ethical application for medicine and healthcare.

Jennifer Girod writes that, in order to enact limitation in medicine, "accepting a more modest growth in medical progress—or even a contraction of what is now routinely offered—requires far more than a change in 'American values.' A more chastened view of progress, greater social solidarity and an acceptance of death will help."[36] Girod's appeal for medicine based on limitation has long been the concern of bioethicist Daniel Callahan, who proposed a limitation in medicine that would eliminate further advances in screening and diagnostic tests or treating potentially fatal conditions when it would leave complicated and expensive chronic illness in their wake .[37] He also suggested offering only palliative care after a certain age. His rationale for limitation is based on justice: "for the sake of the current population and the generations to come."[38] Medicine is limited by expenditure, natural resources, and human personnel. These limitations were very clear throughout the COVID-19 pandemic as pressure was put on healthcare systems to treat many patients simultaneously, personal protective equipment (PPE) ran low, and staff shortages impeded healthcare access.[39]

A Theology of Human Limitation[40]

Human limitation is one of the most prominent leitmotifs in the Bible. Since the spiritual roots of death and illness are absent from transhumanism, Christian theology is naturally set up to critique unlimited medicine. That is not to say that a Christian might only rely on "faith healings" or be a Luddite, but rather that transhumanist philosophies must be approached with a hermeneutics of suspicion. To be clear, transhumanism and other limitation-defying developments are not a theological issue in that they could imperil salvation or redemption, but they are a matter for theological reflection and ethics, especially when transhumanism conflicts with other biblical values such as limitation.

Limitation for both people and planet is a prominent leitmotif in Scripture. The Bible opens with an account of God creating the world "good" in the book of Genesis. Each day is in order and limited by the coming of the next day.[41] The unfolding of the Genesis narrative points to a structure that is rational and orderly.

In the same chapter of Genesis 1, the 'adam are put in the Garden to till the land. Richard Bauckham notes that agriculture, husbandry, and horticulture bring the earth to its fullest potential by utilizing natural limits of the land—such as rain, soil, and topography—and the limits of the environment—for instance the number of sunny days and temperature—without exploiting the land through overuse.[42] The land is limited as well as the human.

Elsewhere in Genesis, human limitation, in tandem with human finitude, are highlighted. The Torah describes mandated resting periods in the Sabbath, which limit work, and prohibitions on certain types of food. For instance, the consumption of meat was a postlapsarian concession that had severe consequences for human-animal relationships (Genesis 9:2–3), but even then, limitation was still expected (Genesis 9:4).[43] Humans must respect the boundaries of the created community. Limitation is a part of the very fiber of the human condition.

The limits of humans are crystallized, rather than dissolved, in the New Testament. In Matthew

6:1–4, Jesus exhorts his listeners to limit disposable wealth by giving to the needy. In Matthew 6:16–17, fasting assumes intentional limitation of food. Human love for money is limited and checked by love for—and devotion to—God in Matthew 6:19–24. Pressing daily needs like food and clothes are limited by our primary objective to seek God in Matthew 6:25–34. People are even told to limit their words in prayer in Matthew 6:5–15! These terrestrial examples make plain the numerous ways God has ordained and structured human limitation. Humans must not only accept—but also embrace—limitation.

Transhumanism

Despite a robust theology of limitation and continuous petitions to recognize the limits of medicine and the medical industry, some scholars, doctors, and scientist believe that humans should break all limitations. Perhaps the starkest juxtaposition to a theology of limitation is transhumanist philosophy. Transhumanism emerges from refusal of limitations and is, as I argue, the antithesis of a theocentric view of limitation in medicine.

Transhumanism, also written H+, is a 20th–21st century academic development, localized primarily to Europe and America.[44] There is a spectrum of ideas within the transhumanism philosophy. On the conservative end is simply the notion that humans can—and do—change with science and technology. From the use of Fitbits and hearing aids to various adaptations and modifications to the body, humans can go "beyond" or transcend our natural body and our natural limits.[45] Of course, this is a rather strict view of human nature and a thin rendering of what is "natural" that does not recognize how human make, adapt, and shape our world, thus synthesizing the created with the natural. As natural creatures who use tools and technology, it could be argued that anything humans do becomes assimilated into our "naturalness."

The middle part of the transhumanist spectrum thus moves more towards the blending of natural and technological. Here, transhumanism is a rather transitional phase.[46] As humans move through a cybernetic world—which has been placed in sharp relief through the COVID pandemic as education, arts, and socialization moved online[47]—transhumanism becomes one more step towards going beyond humanity, indeed, to posthumanism.

Thus, on the far end of the H+ spectrum is the rejection of, or liberation from, the body and embodiment.[48] Nick Bostrom summarizes thusly, "Some transhumanists take active steps to increase the probability that they personally will survive long enough to become post-human . . . by making provisions for having themselves cryogenically suspended in case of de-animation."[49] The extreme end of the transhumanist philosophy is characterized by a Candide-like optimism in the possibilities—and unquestioned goodness—of technological progress.

Transhumanism has made inroads in medicine, primarily through the academic work of scholars such as Nick Bostrom and Julian Savulescu.[50] Bostrom, Savulescu, and others promote transhumanism through a number of medical potentialities. Transhumanism ascribes to a view of medicine that is not only limitless; it promotes unrestrained medical resource use to achieve immortality.[51] Transhumanism promises continuous youthful vitality through the integration of medical technology in every aspect of life. Cryogenics freezes bodies or tissues, enabling the possibility of perpetual life. This includes cryopreservation of oocytes (eggs and sperm) and

adjuncts like oncofertility to extend fertility.[52] Nanotechnologies can introduce incredibly small mechanisms into the body for enhancement.[53] Robotics are available to make humans super-strong.[54] Artificial intelligence uses predictive technology to enhance or supplement cognitive capacity.[55] Regenerative medicine will, purportedly, allow humans to regrow limbs and digits.[56] Human-computer linking leads to further hybridization of humans and machines, already seen in pacemakers, ocular cameras, and insulin pumps.[57] By attempting to direct human evolution though unlimited medicine, transhumanism desires control and mastery over illness and death.

There are many critiques of transhumanism in secular academia. Feminists have pointed out that after Donna Harraway's groundbreaking essay "The Cyborg Manifesto" advocated for "communications technologies and biotechnologies [as] the crucial tools recrafting our bodies,"[58] most transhumanists were white, educated, privileged scholars with an egocentric masculinist agenda. Ethicists have highlighted the implicit ageism in transhumanism that will bias society towards youth and vitality.[59] Ecologists have underscored the massive resource use that will be unnecessarily devoted to transhumanist pursuits, as well as the ecological burden of people living indefinitely.[60] Theologians echo these same concerns while raising others.

Transhumanism and Christian Theology

Transhumanism is enamored with this life to the exclusion of the next. The modern world leads people to "a yearning for the soul to be delivered from the body . . . [which] translates into a programme for overcoming disease, for prolonging human life, and for constructing a more perfect human organism by way of the introduction of machines into the human body,"[61] according to theologian Jürgen Moltmann. In such a state of division, the body is seen as an enemy to be fixed, altered, and conquered. Physicians no longer behold the embodied person, only the electrocardiography (EKG) read-out, the computed tomography (CAT) scan, the image on the sonogram. People no longer live as a temple of God but as a "body project" that can be consumeristically upgraded through hip replacement, hormone therapy, and artificial fertility.[62]

Pope John Paul II objected to this mechanistic view of the person, observing, "within this cultural climate, the body is no longer perceived as a properly personal reality, a sign and place of relations with others, with God and with the world."[63] This alienation of the self from the self, and the self from society, is diametrically opposed to a theology of medicine that regards both limit and possibility as originating in God. Fundamentally, transhumanism adheres to the "mechanical model, in which we are broken and require repair."[64] Transhumanism ignores human limitation and is antithetical to the vision outlined in the Scriptures, where Christians are both sinner and saint, both broken and healed, already, and not yet, living in the kingdom of God.[65]

Nonetheless, some branches of Christianity have embraced the transhumanist philosophy. Jeanine Thweatt-Bates offers a theological argument in favor of posthumanism. The evolutionary work of Teilhard de Chardin has been invoked as a bridge between theology and transhumanism.[66] Notably, Ron Cole-Turner argues the Christian transhumanism can "serve God's purposes in cosmic transformation."[67] While a Christian perspective on transhumanism is a non-essential criteria of faith—as the quote commonly attributed to Augustine goes, "in necessariis unitas, in

dubiis libertas, in omnibus caritas"—transhumanism, when centered among other theological and ethical commitments such as environmental sustainability, global healthcare justice, equity, and solidarity, is difficult to defend.[68]

Secularists like Kate Levchuk argue that digital escapism, whereby people abdicate embodied living for some sort of digital reality, will be an environmentally sustainable option in the future.[69] However, the massive amount of carbon necessary to run artificial intelligence (AI) programs and other digital platforms that use information and communication technology (ICT), in tandem with the infrastructure needed to provide this option to all people, makes her claim dubious.[70]

By most accounts, transhumanism is fundamentally self-centered, individualistic, and inward looking. The irony is that transhumanism will not make people happier, healthier, or relieve emotional pain. Like the author of Ecclesiastes writes, all is hevel; it is a chasing after the wind (Eccl 1:1–11). A theological corrective to the transhumanist returns to the biblical understanding of limitation and also addresses the need of the human to feel supported in the midst of illness.

Human Limitation in Community

Limitation is not simply an end in itself. Rather, limitation is important because we are relational beings, not monads. Our actions impact others and other people enrich our live. Transhumanists tend to act as a law unto themselves. Christian theology counteracts this by acknowledging the limited individual situated within a community. To emphasize this point, Meghan Clark argues that Christians must view themselves as imago Trinitatis as well as imago Dei.[71] This appropriately reflects a Trinitarian perichoresis of community.

Christians can apply Clark's relational theological anthropology to limitation in medicine. In this way, the sick person is recognized as a social being who depends on others. This limitation makes illness, vulnerability, and suffering intelligible, since the sick person is not isolated. Medicine moves away from an individual preference to be pursued at any cost and towards an articulation of communal values, including not only health but also love, joy, belonging, worship, and stewardship.

Human limitation displays awareness of commitments to others. Yet, limitation, even within a community, must proceed with caution. While some theologians find an opportunity for Christians to "embrace the emotional uneasiness of border life, including the limits of self,"[72] feminists have been cautious of medical limitation, rightly noting that the vulnerable may be harmed by medical limitation based on race, age, or sex. In the latter category, because women live longer, they could be more drastically affected by policies that limit medical access after an absolute age, such as 70. This would lead to neglect of women at the end of their lives.[73] Furthermore, it has been empirically verified that women's pain is often denigrated, underdiagnosed, or simply ignored by physicians.[74] A limitation on pain medications, such as opioids, therapeutic surgery, or palliative care could impose unnecessary suffering on women. The feminist critiques do not nullify a Christian theology of limitation in medicine but serve as an important barrier to uncritically accepting forms of limitation that may imperil the integrity

of a community. Cautionary approaches to limitation can guide Christians to the Scriptures instead of arbitrarily suggesting limitations on specific medical treatments.

Conclusion

Christians have been assured that "death has been swallowed up in victory" (1 Cor 15:54, NIV), but medicine that is not grounded in theology tends to treat the body as a machine that needs repairs rather than an image bearer of God. Unlimited medicine denigrates the human person and denies her constitutively social needs. Limitation within community is a biblical alternative to secular medicine and the transhumanist philosophy, a response to Christian suffering, and a path towards a non-dualistic theology of illness and medicine.

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Book Reviews

Bearing Witness: Religious Meaning in Bioethics

Courtney S. Campbell, Cascade Books, 2019.
ISBN 978-1-5326-6273-7, 342 pages, Paperback, $36.00

Where does religion fit into modern bioethical discourse? According to sociologist Max Weber, the human mind has a "metaphysical need" to seek order, coherence, and meaning, a need to understand ultimate questions about our nature, purpose, and destiny.1 Yet modern bioethics operates with no presumptive content of the good and eschews "thick" discourse, relying instead on the procedural grammar of the market, contracts, and limited democracy. Any metaphysical language deemed necessary for moral insight and meaning, embedded in the practices and values of religious communities, is ab initio ruled out of the public sphere. It is relegated to "private life" and therefore extraneous and irrelevant to secular ethics. "Rational" ethical arguments dispense with religious viewpoints as a moral resource. Mid-level principlism has arisen from these ashes as the ruling paradigm, seeking "common morality" above the particularism of cultural, ethical, and religious differences.

Early religious ethicists may have contributed to this vacuous situation. With some exceptions, most entering the public practice of ethics left their distinctive spiritual insights at the door and talked about deontology versus consequentialism, autonomy versus paternalism, and justice versus utility, just like their secular philosophical counterparts. As Stanley Hauerwas has observed, "If what is said theologically is but a confirmation of what we can know on other grounds or can be said more clearly in non-theological language, then why bother saying it theologically at all?"2

Courtney S. Campbell enters this areligious milieu in his book Bearing Witness: Religious Meanings in Bioethics, in which he defends faith-based perspectives for bioethics. He argues that religious communities of moral discourse and practice are essential rather than peripheral contexts for "envisioning, interpreting, and enacting" the ideas central to a shared understanding of health and medicine (p. ix). Though he writes from his own Latter-Day Saints perspective, Campbell's argument is broader than any particular spiritual tradition. On his view, religious traditions "bear witness" to bioethics, with constructive insights about the nature of the human person and the stories we tell in communities. The moral mission of medicine is a calling and vocation dedicated to healing. Spiritual faith informs the universal quest for meaning in life, especially in suffering and mortality.

Paul J. Hoehner, review of *Bearing Witness: Religious Meaning in Bioethics*, by Courtney S. Campbell, *Ethics & Medicine* 37, no. 1 (2021): 60–62.

Campbell's work is a welcome departure from the myopic focus of bioethics literature on quandaries, patient rights, and applied principlism. Instead, Bearing Witness is a bird's-eye perspective on the overall nature of medicine. It is first and foremost a healing profession, and religious views can provide meaning, witness, and presence; these are necessary complements to merely technical roles in healthcare.

Two concepts are central to Campbell's thesis. The first is to define the boundaries of human nature in terms of the image imago Dei (ch. 3). The second is a professional covenantal ethic, an alternative to secular social contract theory drawn from liberal political philosophy (ch. 6).

Because we experience the divine nature as relational, persons bear the divine image through their relationships (p. 61). Persons also reflect the divine in their created naturalness and inherent limitations. Bearing and integrating the divine and the natural is a moral and existential challenge, especially for healthcare. In much of the book, Campbell develops this moral anthropology as it informs many of his ethical perspectives. For example, the relational aspect of the imago Dei provides an alternative to rights derived from social contract theory, which itself was a reaction to perceived paternalism in the early years of bioethics. "Rights" language, according to Campbell, represents a rupture, an adversarial relationship characterizing much of medical consumerism. Furthermore, the obsession with libertarian patient autonomy excludes any concept of relational responsibility or accountability. The imago Dei, on the other hand, provides a context for mutuality, reciprocity, partnerships, and trust, all of which should be central to the patient-physician relationship.

The relational aspect of human nature also belies the soul of healthcare as merely transactional or contractual. Campbell describes a different model under the concept of "covenant," a frame more appropriate to the medical profession and its roots in the Hippocratic tradition, and more central to the theological and moral witness of biblical traditions. A covenant is more than a mere contract. It is a relationship-initiating gift that results in a response and mutual duties, which thereby directs moral attention to the transformation of relationships.

Narratives and stories point to the relational in ethical discourse, which Campbell weaves throughout his book, with personal vignettes and an extended examination of the parable of the Good Samaritan (ch. 4). Such stories, especially those embodied in religious communities, can awaken the moral imagination in new directions. In this sense, Campbell seems to be channeling the spirit of Stanley Hauerwas.

These are all huge and sometimes nebulous concepts, and Campbell fleshes out their implications for healthcare ethics, such as "bearing witness" to suffering, end-of-life care, and professionalism in medicine. The book's strength is how it avoids portraying religion's public role in bioethics as a mere proxy for the "culture wars" between political liberalism and conservative religion. Instead, he opens renewed vistas for the integration of the transcendent into public and professional discourse through the insights of religious communities.

The strength of this book is also one of its weaknesses. Focusing on the "big picture," it cannot examine specific moral issues in detail. Many unanswered questions remain about implementing this vision in our current polarized public discourse. In searching for common ground, Campbell seems to accommodate religious convictions to the public square more than

many faith-based voices would find acceptable. For example, while presenting a solid argument against seeing the hastening of death as a new goal for medicine, he is critical of conservative wholesale dismissals of physician-assisted dying.

In the final chapter on rights of conscience, Campbell attempts a compromise between two roles for physicians. On the one hand, some see doctors as value-free technicians, where patient autonomy always rules. On the other hand, some see physicians as absolutists who must refuse to offer legal interventions such as abortion and physician-assisted suicide and will not provide referrals that might make them morally complicit. However, his "context-dependent" (p. 306) justifiability of conscientious refusal may represent too much compromise. He does not consider actions that many consider morally illicit under any circumstances.

These reservations aside, Campbell's vision is a welcome introduction of religious discourse (back) into the world of bioethics. Bearing Witness attempts to be prophetic to an areligious culture and provides a moral compass to a value-neutral profession. Whether the compass points true north or is prophetic enough must be left for the reader and individual religious communities to judge.

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American Awakening: Identity Politics and Other Afflictions of Our Time

Joshua Mitchell, Encounter Books, 2020.
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Joshua Mitchell is a specialist in political theory who has contributed one of the few scholarly works addressing the issue of "identity politics" in a liberal society. This phenomenon has exploded on the cultural and political scene in the last twenty years and has caused heated debate across the political spectrum. Moreover, it indirectly affects the theory and practice of medical ethics. Race and gender issues have converged through intersectionality, which has brought together advocates of racial theory, LGBTQ activists, and academics in mutually reinforcing, though sometimes tense, relationships. For example, the issue of abortion interacts with race through the argument that restrictions on the procedure disproportionately affect African American women. Identity politics or "identitarianism" argues that one's identity, what makes individuals who they are (or who they believe they are), is governed not by traditional categories but by race or gender identity. It is into this context that Mitchell's book speaks.

Mitchell paints a broad picture of this aspect of the culture war in America in which he attempts to describe, define, and explain identity politics. His discussion shows the issue as a dichotomy between the innocents, who claim some identity with an alleged oppressed group, and the transgressors, who have allegedly engaged in various actions that harm the innocents.

The tendency in recent books on identity politics has been merely anecdotal, with thin assertions and minimal historical or theoretical foundations. However, Mitchell makes his case about the transgressor-innocent divide based on political theory and cultural history. In addition, he is familiar with many examples of the phenomenon about which he writes.

Mitchell begins his study with a history of how cultural elites came to speak of "identity" in its current sense. Humans have divided themselves "into different kinds of peoples, having different inheritances" (p. 4). He continues that this was still dominant into the 1960s, with political, religious, and ethnic distinctions. Mitchell marks the 1990s as a turning point, when "a new term became ubiquitous in our everyday vocabulary: 'identity'" (p. 5). The term has a long and controversial philosophical history, but it usually refers to knowing oneself as a human being, drawing on such diverse writers as David Hume and Sigmund Freud. Identity in its radical usage came to involve "not so much as specification of a kind but a specification of a relationship . . . of a specific type" whereby the first term "is the offending transgressor; the other is the innocent victim" (p. 7). If one term in a pair is, say, "male" and the other "female," the relationship of the two in a social context is one of permanent conflict: "male" in this new usage is the transgressor and "female" the innocent. Mitchell adds that the transgressor may have done nothing to warrant the label, but has come to stand in as a representative of historical

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transgressions. In the example above, the two terms in the relationship are usually groups, e.g., male/female, black/white, homosexual/heterosexual, etc.

Mitchell argues that this newer sense of "identity" within identity politics is "less a single theory than a large genus within which all theories of innocent victimhood are species, because all of them invoke the relationship between transgression and innocence" (p. 8). In describing these relationships in identity politics, Mitchell frequently invokes religious language to indicate the "quasi-religious" world they inhabit. In Mitchell's view, identity politics has arisen due to (1) the collapse of mainline Protestant churches, shifting transgression/innocence concepts from religion to politics; (2) extension of the Black American template of innocence to other groups after the civil rights era; and (3) discovery by the academic left of postmodern thought as more potent than Marxism, especially for distinguishing the transgressors from the innocents (pp. 12–13).

Moreover, identity politics "purports to repudiate . . . the liberal idea of the competent citizen," a theme Mitchell frequently uses in this work (p. 13). The competent liberal citizen has become the antithesis of identity politics. "Liberal" for Mitchell refers to the broad concept that originated three or more centuries ago, and it is from that ideology that he derives the idea of the "competent liberal citizen" (pp. 13–21). Mitchell writes, "For the liberal the task is not to distinguish among the transgressors and the innocents . . . but to recognize the limits [for example, self-interest] by which the democratic age is constrained, and to work within them to allow neighbors and fellow citizens to build a world together" (p. 21, emphasis added). We need each other in liberalism, but not in identity politics, except for our own "tribe." Given the many limitations of human beings—the inability to know the future, the limits of self-knowledge, and the failure to understand one another fully—liberals should adopt a posture of humility in their capacity to envision and implement a utopian future. And since they are so limited individually, they must realize they should turn to each other, reinforcing trust in community through labor and mutual aid to build a better world for all. On the other hand, Mitchell states, "Identity politics is the compelling alternative to competence-based, self-interested, world-building liberal citizenship for many today. Identity politics proclaims that innocent victims must be heard and that historical perpetrators of transgression must listen, regardless of their competencies" (p. 31).

Part One addresses what Mitchell calls "the longing that identity politics answers," with problems created for competent liberalism by both the Republican and Democratic Parties, along with the "purge" conducted mainly by the Democrats of transgressors (pp. 42–72). In the concluding sections of Part One, the author deals with "Group Unity," one of the most significant parts of the book: What holds identity politics groups together and what kinds of groups can one identify? In these sections, Mitchell's work intersects with medical ethics, discussing various groups of abortion, transgender, and homosexual rights advocates, and also alluding to end-of-life advocacy. Part Two employs metaphors of addiction and bipolarity to further describe obstacles to liberal competence. Part Three concludes with an appeal for recovery of proper liberal competence.

Mitchell presents a detailed and comprehensive analysis of the current identity politics movement. His use of various analogies helps the reader understand the nature and aims of this multifaceted movement and its antithesis. The historical genealogy is very helpful as well.

As an academic book, American Awakening: Identity Politics and Other Afflictions of Our Time is very readable for non-academics. It is the first scholarly attempt to provide accurate and nuanced insight into identity politics.

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