

Enhancing Medicine? Should *Medicine* Be in the Business of Human Enhancement?

Andrew Sloane

Abstract: The application of biomedical technology to human enhancement raises important philosophical, theological, and ethical questions. This paper focuses on questions relating to the practice of medicine: in particular, whether medicine should be in the business of human enhancement. I briefly outline the landscape of human enhancement, or better, anthropotechnics, and articulate a theological framework for the justification of biomedical research. I outline a theology of medicine in which vulnerability is recognised to be a fundamental feature of human existence, and care of various kinds is medicine's primary response to it. In light of those theological perspectives, I seek to determine whether anthropotechnics and associated research is the proper concern of medicine. I close with some reflections on medicine, technology, and the commodification of the body in the late modern West.

Keywords: anthropotechnics; human enhancement; medicine; theology; vulnerability

Dr Andrew Sloane is Lecturer in Old Testament and Christian Thought at Morling College, Sydney, where he has taught since 2002. He teaches and researches in the areas of Old Testament, philosophy of religion, theology of medicine, bioethics, and integration of faith and work. Andrew qualified in medicine and practiced briefly as a doctor before training as a Baptist pastor. His latest book is *Vulnerability and Care: Christian Reflections on the Philosophy of Medicine* (T&T Clark, 2016). The author wishes to thank the CPOSAT reviewers, the participants in the Morling College's research seminar, and the ISCAST-NZCIS conversations for insightful comments that *enhanced* the final product.

At least since the work of Francis Bacon (1561–1626) in the seventeenth century, medical practitioners and researchers have sought to “relieve the human condition,” to use growing scientific knowledge and technical expertise to treat and prevent disease, and to ameliorate the effects of injury and disability.¹ We have become so familiar with these interventions—from eyeglasses to prosthetic limbs and cochlear implants—that they have become almost invisible. While there are many questions that can—and should—be raised about the philosophy of medicine implicit in those aims, it is clear that broadly speaking its focus has been on achieving therapeutic and reparative goals.

The advent of human enhancement signals a significant shift in the focus of research and the resultant technologies away from relieving the human condition towards enhancing it. While human enhancement may seem to be a more-or-less distant future prospect, medical involvement in human enhancement is already here. Cosmetic surgery is, so to speak the (sculpted) camel’s nose in the tent. For with some exceptions (say, post-mastectomy breast reconstruction), its aim is not to repair damage or restore function, but to “improve” aesthetics, enhancing the appearance of generally functional structures. Whether it is responding to what are seen as the depredations of age or is oriented to the attaining of a desired aesthetic ideal, it aims not so much at relieving the human condition as at transcending it. I will have some more to say about that shortly, but before I get there, let me spell out what I aim to do in this piece.

I have an interest in both transhumanist futures and the theology of medicine. In what follows, I seek to bring the two together and deal with a number of theological and ethical questions at their intersection. I will not (attempt to) be exhaustive; and there are many large and important prior questions I will not deal with—or if I do, only in passing and inasmuch as the particular questions I want to explore have bearing on them. The main question I will *not* address is whether human enhancement is theologically and morally permissible, or even

1 Gerald P. McKenny, *To Relieve the Human Condition: Bioethics, Technology, and the Body* (Albany: University of New York Press, 1997).

desirable, or whether it transgresses moral bounds and is incompatible with theological anthropology. Those questions have been discussed at length in the literature; my interests lie elsewhere.²

I will begin by presenting a brief map of the landscape of human enhancement noting the varied interests in physical, cognitive and moral enhancement, and radical life extension.³ The particular question I want to ask is: presuming a range of enhancement technologies are feasible and permissible, is human enhancement the business of medicine? I will note the role that a distinction between “treatment” (or “restoration”) and “enhancement” plays in this discussion, and briefly identify problems with it, before turning to my own proposal. I will suggest that before we can determine whether enhancement is or is not medicine’s business, we need to understand what medicine’s business *is*. And for Christians that requires a clear theological understanding of its nature and purpose. Having articulated a notion of medicine that sees caring for vulnerable people as central to its nature and purpose, I will argue that whatever the status of human enhancement as a theological and moral good or ill (or something in between, or a mixture of the two), it should not become medicine’s business. I will close with some reflections on the role that medicine ought to play in a properly functioning human community, and the pressures that tend to corrupt that practice.

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- 2 For a range of philosophical, theological, and ethical perspectives on various aspects of human enhancement, see Michael Burdett and Victoria Lorrimar, “Creatures Bound for Glory: Biotechnological Enhancement and Visions of Human Flourishing,” *Studies in Christian Ethics* 32:2 (2019), <https://doi.org/10.1177/0953946819827141>; Tracy J. Trothen and Calvin R. Mercer (eds), *Religion and Human Enhancement: Death, Values, and Morality* (London: Palgrave Macmillan, 2017); Michael Buttrey, Moira McQueen, and Tracy J. Trothen, “Faster, Higher, More Moral: Human Enhancement and Christianity,” *Religions* 13:4 (2022), <https://doi.org/10.3390/rel13040354>; Sylvie Allouche et al. (eds), *Inquiring into Human Enhancement: Interdisciplinary and International Perspectives* (London: Palgrave Macmillan, 2015); Andrew Pinsent and Sean Biggins, “Catholic Perspectives on Human Biotechnological Enhancement,” *Studies in Christian Ethics* 32:2 (2019), <https://doi.org/10.1177/0953946819826769>.
- 3 While now technically outdated, President’s Council on Bioethics, *Beyond Therapy: Biotechnology and the Pursuit of Happiness. A Report of The President’s Council on Bioethics* (New York: Dana, 2003), gives a good map of the landscape of human enhancement.

The Landscape of Human Enhancement

Broadly speaking, proposals for human enhancement fall into four main categories (and combinations thereof): physical, cognitive, and moral enhancement, and radical life extension. Physical enhancement aims at improving human speed, endurance, strength, and so on, beyond statistical norms and using artificial means (i.e., beyond sports physiology). Proposed mechanisms include pharmaceuticals, endogenous or synthetic hormone supplements, physical prostheses and cybernetics (including perceptual), and surgery. Surgical enhancement is already in play—most obviously in the cosmetic surgery “industry.”⁴ Somatic and germline genetic and epigenetic modification have also been proposed as means of enhancing existing persons or future progeny.⁵

Cognitive enhancement aims at improving human concentration, memory, language, and skills acquisition beyond statistical norms and using artificial means (i.e., beyond educational psychology). Proposed means to these ends include pharmaceutical agents (existing or proposed), devices external to the person (including “deep-brain stimulation”), and those implanted, and cybernetics of various levels of complexity. As with physical enhancement, somatic and germline genetic and epigenetic modification have also been proposed as means of enhancing existing persons or future progeny. Similar mechanisms have been proposed for the sake of moral enhancement, which aims at enhancing or enforcing desirable traits and thought-patterns (virtues) and limiting or blocking undesirable traits and thought-patterns (vices).

These approaches to enhancement all aim to extend human capacities to control themselves or their external world: they are, so to speak, spatially and culturally oriented. The final category seeks to

4 See <https://www.spectator.com.au/2022/05/concerning-cosmetic-cowboys/> (accessed 10 March 2024).

5 Julian Savulescu and Guy Kahane, “The Moral Obligation to Create Children with the Best Chance of the Best Life,” *Bioethics* 23:5 (2009), <https://doi.org/10.1111/j.1467-8519.2008.00687.x>.

enhance or extend a person's relationship to time, by way of radical life-extension; to extend the human lifespan beyond statistical norms. This may utilise what De Grey calls "the 'boring wet approach' of periodic, reasonably comprehensive, preventative maintenance of the body,"⁶ or extend to more radical (and highly speculative) proposals for pharmaceuticals, or somatic and germline genetic and epigenetic modification, or even cybernetic embodiment and mind uploading.⁷ While there are significant differences between these categories, including in the motivation of their advocates and the goals they have in mind, for my purposes they can be treated together as a cluster of related projects. Furthermore, for reasons that will be discussed briefly below, I think the term *human enhancement* doesn't quite capture the fundamental nature of this cluster of research programs and proposed interventions, and so, following the suggestion of Jérôme Goffette, I will refer to them collectively as *anthropotechnics*.⁸

Navigating the Anthropotechnics Landscape: Responses and Issues

Responses

As is generally the case, responses both religious and secular range from enthusiastically embracing anthropotechnics as a responsible, even obligatory means of expanding our capacities to do good and prevent catastrophic harm, through to fervid rejections of it as an expres-

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- 6 Aubrey de Grey, "Foreword: Transhumanism, Radical Life Extension, and Theology," in *Religious Transhumanism and Its Critics*, ed. Arvin M. Gouw, Brian Patrick Green, and Ted Peters (Lanham: Lexington, 2022), xii–xv, esp. xiii. For a discussion of more radical options, see Ursula Deplazes, "Technological Enhancements of the Human Body: A Conceptual Framework," *Acta Philosophica* 20:1 (2011): 53–70.
- 7 For a discussion of the latter, see Andrew Sloane, "Disposable Bodies, Disabled Minds, and Christian Hope," *Zygon* 58:2 (2023), <https://doi.org/10.1111/zygo.12847>.
- 8 Jérôme Goffette, "Enhancement: Why We Should Distinguish Anthropotechnics from Medicine," in *Inquiring into Human Enhancement: Interdisciplinary and International Perspectives*, ed. Sylvie Allouche et al. (London: Palgrave Macmillan, 2015), Ch. 2.

sion of hubris that threatens to corrupt human nature and destroy the world.⁹ To put it more theologically, is anthropotechnics an instance of

- 9 For a range of positive responses, see Nick Bostrom, “Human Genetic Enhancements: A Transhumanist Perspective,” *Journal of Value Inquiry* 37:4 (2003): 493–516; David DeGrazia, “Enhancement Technologies and Human Identity,” *Journal of Medicine & Philosophy* 30:3 (2005), <https://doi.org/10.1080/03605310590960166>; Will Jefferson et al., “Enhancement and Civic Virtue,” *Social Theory & Practice* 40:3 (2014), <https://doi.org/10.5840/soctheorpract201440330>; Guy Kahane, Jonathan Pugh, and Julian Savulescu, “Bioconservatism, Partiality, and the Human-Nature Objection to Enhancement,” *Monist* 99:4 (2016), <https://doi.org/10.1093/monist/onw013>; Karolina Kudlek, “Is Human Enhancement Intrinsically Bad?” *Medicine, Health Care, and Philosophy* 24:2 (2021), <https://doi.org/10.1007/s11019-021-10003-w>; Ingmar Persson and Julian Savulescu, “The Perils of Cognitive Enhancement and the Urgent Imperative to Enhance the Moral Character of Humanity,” *Journal of Applied Philosophy* 25:3 (2008), <https://doi.org/10.1111/j.1468-5930.2008.00410.x>; Ingmar Persson and Julian Savulescu, “Moral Transhumanism,” *Journal of Medicine & Philosophy* 35:6 (2010), <https://doi.org/10.1093/jmp/jhq052>; Ingmar Persson and Julian Savulescu, “Getting Moral Enhancement Right: The Desirability of Moral Bioenhancement,” *Bioethics* 27:3 (2013), <https://doi.org/10.1111/j.1467-8519.2011.01907.x>; Jon Rueda, Pablo García-Barranquero, and Francisco Lara, “Doctor, Please Make Me Freer: Capabilities Enhancement as a Goal of Medicine,” *Medicine, Health Care, and Philosophy* 24:3 (2021), <https://doi.org/10.1007/s11019-021-10016-5>; Julian Savulescu, “Rational Freedom and Six Mistakes of a Bioconservative,” *American Journal of Bioethics* 19:7 (2019), <https://doi.org/10.1080/15265161.2019.1626642>. For cautious or critical responses, see Alfred Archer, “Are We Obligated to Enhance for Moral Perfection?” *Journal of Medicine & Philosophy* 43:5 (2018), <https://doi.org/10.1093/jmp/jhy017>; Birgit Beck, “Conceptual and Practical Problems of Moral Enhancement,” *Bioethics* 29:4 (2015), <https://doi.org/10.1111/bioe.12090>; Paschal Corby, *The Hope and Despair of Human Bioenhancement: A Virtual Dialogue between the Oxford Transhumanists and Joseph Ratzinger* (Eugene, OR: Pickwick, 2019); Kimbell Kornu, “Transfiguration, not Transhumanism: Suffering as Human Enhancement,” *The Heythrop Journal* 63:5 (2022), <https://doi.org/10.1111/heyj.14129>; Joseph Lenow, “Evolution, Human Enhancement, and Human Nature: Four Challenges to Essentialism in Theological Anthropology,” *Journal of Religion & Society Supplement Series* 18 (2019): 205–31; Robert Sparrow, “A Not-So-New Eugenics: Harris and Savulescu on Human Enhancement,” *The Hastings Center Report* 41:1 (2011): 32–42; Norman K. Swazo, “‘Unnatural’ Thoughts? On Moral Enhancement of the Human Animal,” *Medicine, Health Care, and Philosophy* 20:3 (2017), <https://doi.org/10.1007/s11019-017-9758-1>; Ruud ter Meulen, “The Moral Ambiguity of Human Enhancement,” in *Inquiring into Human Enhancement: Interdisciplinary and International Perspectives*, ed. Sylvie Allouche et al. (London: Palgrave Macmillan, 2015), Ch. 4. McKenny helpfully addresses the broader issues of technology, society, and human moral desires and ends, for which see Gerald P. McKenny, “Technologies of Desire: Theology, Ethics, and the Enhancement of Human Traits,” *Theology Today* 59:1 (2002): 90–103.

humans illegitimately playing God and wanting to become as god/s? Or is it an appropriate expression of humans imaging God and expressing human vice-regency in creation (including with respect to human creaturehood)?¹⁰

Issues

There are many underlying issues that shape how people respond to the prospect of anthropotechnics. While I do not have scope in this piece to explore them in their own right, some have bearing on the particular question I want to explore, and so I will outline them brief-

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- 10 For a range of broadly positive theological responses to these questions, see Burdett and Lorrimar, “Creatures Bound for Glory”; Ron Cole-Turner, “Theosis and Human Enhancement,” *Theology & Science* 16:3 (2018), <https://doi.org/10.1080/14746700.2018.1488526>; Ronald Cole-Turner, “*Technē* and *Teleios*: A Christian Perspective on the Incarnation and Human Enhancement Technology,” *Christian Bioethics* 28:3 (2022), <https://doi.org/10.1093/cb/cbac010>; Micah Redding, “Why Christian Transhumanism?” in *Religious Transhumanism and Its Critics*, ed. Arvin M. Gouw, Brian Patrick Green, and Ted Peters (Lanham: Lexington, 2022), 113–128; Jeanine Thweatt-Bates, *Cyborg Selves: A Theological Anthropology of the Posthuman* (Farnham, UK: Ashgate, 2012). For a range of cautious, or negative responses, see Brandon Gallaher, “Godmanhood vs Mangodhood: An Eastern Orthodox Response to Transhumanism,” *Studies in Christian Ethics* 32:2 (2019): 200–215; Brandon Gallaher, “Technological Theosis? An Eastern Orthodox Critique of Religious Transhumanism,” in *Religious Transhumanism and Its Critics*, ed. Arvin M. Gouw, Brian Patrick Green, and Ted Peters (Lanham: Lexington, 2022), Ch. 10; D. Gareth Jones, “The Transhumanist Vision: Technological Bliss or Tragic Misadventure?” *Perspectives on Science and Christian Faith* 72 (2020): 95–108; Gerald P. McKenny, *Biotechnology, Human Nature, and Christian Ethics* (New York: Cambridge University Press, 2018); Gerald McKenny, “Human Nature and Biotechnological Enhancement: Some Theological Considerations,” *Studies in Christian Ethics* 32:2 (2019): 229–40; William Sweet, “Transhumanism and the Metaphysics of the Human Person,” *Science et Esprit* 67:3 (2015): 359–71; Brent Waters, “Flesh Made Data: The Posthuman Project in Light of the Incarnation,” in *Religion and Transhumanism: The Unknown Future of Human Enhancement*, ed. Calvin R. Mercer and Tracy J. Trothen (Santa Barbara: Praeger, 2015), 291–302; David C. Winyard, Sr., “Transhumanism: Christian Destiny or Distraction?” *Perspectives on Science and Christian Faith* 72 (2020): 67–81; Simeon Zahl, “Engineering Desire: Biotechnological Enhancement as Theological Problem,” *Studies in Christian Ethics* 32:2 (2019), <https://doi.org/10.1177/0953946819827138>; Philip G. Ziegler, “‘Those He also Glorified’: Some Reformed Perspectives on Human Nature and Destiny,” *Studies in Christian Ethics* 32:2 (2019), <https://doi.org/10.1177/0953946819826764>.

ly. First, we need to recognise that anthropotechnics has two related but distinct aims: to improve human capacities; and to negate human vulnerability. Both of these are important for advocates and opponents of anthropotechnics. Second, there are important metaphysical questions entailed in anthropotechnics programs. Is there such a thing as “human nature”? If so, how fixed or malleable is it? In either case, would some anthropotechnic interventions result in an entity that is no longer (recognisably) human? Does that matter—is it inherently wrong to change (or corrupt?) human nature? Third, there are important social questions. Who would benefit from anthropotechnics? Would that result in a posthuman elite (H+) against which unenhanced humans (H-1.0) would be unable to compete? Is anthropotechnics an illegitimate use of limited resources, or would it lead to positive benefits for all humanity and the earth as a result of the greater cognitive and moral capacities of the human subjects of anthropotechnics?

There are also important questions relating to the (theological) justification of research—at least some of which are caught up in answers to the prior questions. This is a significant matter, which does not often get the attention it deserves, and which has fairly direct bearing on the question I am exploring: what heuristics ought to guide our research—and how do we justify that theologically and ethically? It seems to me that there is—and ought to be—a specifically Christian answer to that question. I would suggest (following Wolterstorff) that the furthering of God’s *shalom*-making purposes provides the overall justification for any research, including into anthropotechnics.¹¹

That fairly straightforwardly leads to the justification of *praxis*-oriented research—that is, research projects that aim at contributing to the wellbeing of people, communities, and the integrity of creation.

11 For a brief discussion of this in relation to medicine, see Andrew Sloane, *Vulnerability and Care: Christian Reflections on the Philosophy of Medicine* (London: Bloomsbury T&T Clark, 2016), 124–25, 31. For the underlying epistemology and theory of theorising, see Nicholas Wolterstorff, *Reason Within the Bounds of Religion*, 2nd ed. (Grand Rapids: Eerdmans, 1984), 111–46; Nicholas Wolterstorff, *Until Justice and Peace Embrace* (Grand Rapids: Eerdmans, 1983), 162–76; Andrew Sloane, *On Being a Christian in the Academy: Nicholas Wolterstorff and the Practice of Christian Scholarship* (Carlisle: Paternoster, 2003), 148–60, 200–202.

Of course, that requires that we have an underlying notion of *wellbeing* (the biblical motif of *shalom* provides that);¹² and it also entails recognition that not all projects achieve their aims. It is not their effectiveness that justifies them heuristically, but their orientation or goals.

Less obviously, but equally important, a heuristics of *shalom* also justifies pure research (or at least, a good deal of it)—and not just because it often produces more and more significant practical outcomes than *praxis*-oriented projects (such as the role that quantum mechanics plays in medical diagnosis by way of Magnetic Resonance Imaging). Whether or not it leads to such unexpected practical outcomes, understanding the world is fundamental to our human calling, to our imaging God.¹³ In part that is because that enables us to relate to others and our fellow creatures more effectively and creatively; but also because understanding the world is itself a good. Pure research, then, is itself a contribution to *shalom*—whether or not it leads to better medical imaging. Theological reflection on the heuristics of research into anthropotechnics will help us understand not only the possible value of that research, but also whether it ought to be included within the ambit of medical research. I will return to this matter later.

Finally, there are also important questions with regard to which sphere or spheres of human communal life do research into anthropotechnics, and the resulting anthropotechnologies belong? And that brings me to my primary question. Mine is a relatively (perhaps deceptively?) simple question: is “human enhancement” medicine’s business? Or rather, should it be? For as the President’s Council on Bioethics report noted twenty years ago:

Wherever they may be invented and manufactured, most new biotechnologies, including those serving goals beyond therapy,

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- 12 Wolterstorff, *Until Justice and Peace Embrace*, 69–72. *Shalom* (often translated “peace”) is more than the absence of conflict: it is a state of flourishing in which people are in right relationship with God, each other and the world, living lives of love, fidelity, justice, and delight.
- 13 The naming of the animals in Gen 2:19–20, for instance, is an act of discernment which enables the human to understand where these creatures do (and do not) fit into the creation order.

will probably enter ordinary use through the offices of the medical profession. Should this occur, the pursuit of happiness and self-perfection would become part of the doctor's business, joining many other aspects of human life that formerly had little to do with doctors and hospitals.¹⁴

They go on to note that the resulting medicalisation of enhancement runs the risk of patients being transformed into consumers, and medicine being “transformed from a profession into a trade.”¹⁵ Their solution is to turn away from the philosophy of medicine to a broader consideration of the nature of humanity and the goods of human flourishing—an appropriate move to make in considering whether anthropotechnics is morally desirable. But my interest is, once again, narrower than that: should anthropotechnics be medicine's business? And so, we turn to what I see as the two prior questions we need to ask in order to determine our answer to *that* question: what is medicine? and what is it for?

The Nature and Goals of Medicine

Questions of that kind are best explored by way of a detailed outline and justification of a particular *theology* of medicine which seeks to make sense of medicine as a social practice and present a normative account of it in light of a Christian understanding of human personal and social existence. Such a theological account raises both conceptual and practical problems associated with notions of healing or promoting health and/or the alleviation of suffering, meaning that while they are clearly relevant to the practice of medicine, they do not define its nature and goal. I have sought to articulate and defend such a theology of medicine elsewhere, so let me here briefly summarise.¹⁶ God has

14 President's Council on Bioethics, *Beyond Therapy*, 303.

15 President's Council on Bioethics, *Beyond Therapy*, 304.

16 Sloane, *Vulnerability and Care*. For an earlier (and considerably briefer) treatment, see Andrew Sloane, “Christianity and the Transformation of Medicine,” in *Christianity and the Disciplines: The Transformation of the University*, ed. Oliver D. Crisp et al. (London: T&T Clark, 2012), 85-99.

made humans as creatures in space and time, whose finitude and vulnerability are inherent in our creaturely existence (rather than being a consequence of the “fall”). However, both we and the world we live in are “not the way we’re supposed to be.”¹⁷ The persons whom God has created and continues to love experience the brokenness of the world as it now is through the effects of disease, injury, infirmity, and disability, experiences that call for a compassionate response to those in need. God’s desire for creation and creatures to know the flourishing for which they were created drives the story of redemption in which God’s people are called to express God’s character and enact God’s purposes.

This story climaxes in the incarnation, life, death, resurrection, and exalted rule of God the Son enfleshed, who embraced the vulnerability of the human condition, while also bringing healing and compassion to those who suffer. Christ’s resurrection is both a promise and sign of the final transformation of all things in which death will be defeated and suffering ended in the healing of creation. In light of this story, medicine exists to demonstrate the love of the Creator, model the work of Jesus, and witness to the final transformation of all things. But only in part. For Jesus’ actions were those of the Incarnate Son; ours are merely human works, however touched by the divine. Moreover, death has not yet been swallowed up in victory, and so whatever medicine achieves (and it can achieve a lot) is at most an anticipation, a pointer to and very partial expression of the end towards which the Spirit draws us.

Now, I should note two things. First, it may at first glance seem that the works of Jesus and the healing of creation make health and healing medicine’s goal. This, however, would be a mistake: the notions of health (and so healing) either claim too much (as in the notorious WHO definition) or become reductionistic; and too much of medicine falls outside the remit of healing (say, obstetrics or palliative care), and too much of what promotes health calls outside the remit of medicine (say, clean water and sanitation). Medicine’s goal is to provide care for

17 Cornelius Plantinga, *Not the Way It’s Supposed to Be: A Breviary of Sin* (Grand Rapids: Eerdmans, 1995).

“this frail flesh” and, where this is possible and as far as this is practicable, to remove impediments to human flourishing, restoring people to proper personal and relational functioning. It is a primary expression of a community’s commitment in solidarity to our vulnerable fellow humans, rather than abandoning them in their frailty. Medicine is, so to speak, a matter of health *care*, not *health* care: treatments, while important, are one aspect only of its task, and so determining whether something counts as a treatment or not is a secondary concern at best. Second, while what I have outlined is an explicitly theological account of medicine, many of its implications can be accepted by those of different faiths or none—although their rationale would, no doubt, differ at crucial points. Given the reality of God’s common grace that would come as no surprise. Our call as Christians is not to be *different* but to be *faithful*.¹⁸

The Treatment-Enhancement Distinction

If this account of medicine is sound, then one important suggestion as to how to determine the legitimacy or otherwise of anthropotechnics would not work: namely, to distinguish between “restoration and repair” and “enhancement” as the basis on which to make these judgments. This so-called “treatment-enhancement distinction” (hereon TED) has played a prominent role in discussions of anthropotechnics and social policy and its relationship to the practice of medicine.¹⁹ It

18 Nicholas Wolterstorff, “On Christian Learning,” in *Stained Glass: Worldviews and Social Sciences*, ed. Paul A. Marshall, Sander Griffioen, and Richard J. Mouw (Lanham, MD: University Press of America, 1989), 56–80, esp. 69.

19 See, for instance, President’s Council on Bioethics, *Beyond Therapy*, where the very title plays on the TED, but the report argues that we need to go beyond it. They state: “One needs to see the topic less in relation to medicine and its purposes, and more in relation to human beings and their purposes” (note at 13). That may be true in relation to the matter of whether anthropotechnics is good, bad, or indifferent; but it does not help us answer the question of whether it is medicine’s business, as opposed to that of biotechnology. For a range of other perspectives that engage with the TED (positively or negatively), see DeGrazia, “Enhancement Technologies and Human Identity,” esp. 262–64; Alexandre Erler, “The Limits of the Treatment-Enhancement Distinction as a Guide to Public Policy,” *Bioethics* 31:8 (2017), <https://doi.org/10.1111/bioe.12377>;

presupposes a particular understanding of medicine (which is rarely explicitly articulated, let alone examined) which sees its job as healing disease, promoting health, and alleviating suffering.²⁰ This leads to a corresponding focus on treatment as restoration or repair, which in turn requires an understanding of the original “design plan” and then implementing treatments that restore it to its proper function rather than seeking to “improve upon it.” That notion of medicine is reflected in both defenders and opponents of the TED.²¹

Now, the TED has been the subject of sustained critique. On the one hand, disability theorists expose and criticise its ableist and normate biases.²² On the other, transhumanists argue that the existence of medical and other devices such as cochlear implants, “blade runner” prostheses, and so on, that inhabit the grey areas between therapy and enhancement blur the boundaries between them and so invalidate the TED.²³ These critiques raise important points and generate interesting counterarguments. For instance, fuzzy boundaries and grey areas do not invalidate distinctions made on paradigmatic rather than strictly criteriological grounds—after all, we can validly distinguish between dogs and wolves with reference to paradigm instances of each, despite there being no necessary and sufficient conditions on which we make

Andrew McGee, “Using the Therapy and Enhancement Distinction in Law and Policy,” *Bioethics* 34:1 (2020), <https://doi.org/10.1111/bioe.12662>.

- 20 This assumption is named in the President’s Council on Bioethics, *Beyond Therapy*, 16–17, but not carefully addressed. For proponents of this or similar notions of medicine in the enhancement debate, see Björn Hofmann, “Managing the Moral Expansion of Medicine,” *BMC Medical Ethics* 23 (2022), <https://doi.org/10.1186/s12910-022-00836-2>.
- 21 See, for instance, Erler, “Limits of the Treatment-Enhancement Distinction”; Laura Cabrera, *Rethinking Human Enhancement* (London: Palgrave Macmillan, 2015), Ch. 2: “The Biomedical Paradigm.” Restoration vs enhancement is fundamental to Wyatt’s approach, for which see John Wyatt, *Matters of Life & Death: Human Dilemmas in the Light of the Christian Faith* (Nottingham: IVP, 2009), 97–100, 265–75.
- 22 M. Eilers, K. Grüber, and C. Rehmann-Sutter (eds), *The Human Enhancement Debate and Disability: New Bodies for a Better Life* (London: Palgrave Macmillan, 2014); Sarah Chan, “Therapy, Enhancement and the Posthuman,” in *The Bloomsbury Handbook of Posthumanism*, ed. Mads Rosendahl Thomsen and Jacob Wamberg (London: Bloomsbury Academic, 2020), Ch. 16.
- 23 President’s Council on Bioethics, *Beyond Therapy*, 13–16.

such a distinction. Similarly, we might be able to distinguish between treatment and enhancement by way of identifying paradigm instances of each and forming judgements about how closely a given technology resembles those exemplars.²⁴ But I think we can leave those arguments to one side given that the TED does not quite get purchase on the question I want to address. I will argue shortly that using the TED in arguments against anthropotechnics loses its force if medicine has a different nature and task to that presupposed by it.

But before I move on to those matters, I would like to digress briefly to discuss an interesting approach to medicine and “human enhancement” that explicitly reflects on the nature and goals of medicine, even if it misunderstands them. Jérôme Goffette argues that we should sharply distinguish between medicine and what he calls anthropotechnics on the grounds of their different nature and goals.²⁵ He contends that enhancement research and (proposed) treatments are extramedical on the grounds that they do not deal with treating illness, which he sees as the goal of medicine. He labels human enhancement projects “anthropotechnics,” which he suggests is a new profession or discipline with its own normative goals and disciplinary practices that aims at improving and modifying the body and the self with the aim of greater mastery over the self and the world.²⁶

He argues that in contrast to medicine, which is structured around the poles of the pathological and the normal, anthropotechnics is structured around the poles of the normal and the improved. Drawing on earlier work he states:

24 For a helpful discussion of these matters, especially in relation to making valid distinctions along a spectrum of qualities, see Goffette, “Enhancement” (section “Beyond Therapy and The Pursuit of Perfection”).

25 Goffette, “Enhancement.”

26 Goffette, “Enhancement” (section “Field and denomination”). Søren Holm, “The Medicalization of the Posthuman Transformation Trajectory,” in *The Bloomsbury Handbook of Posthumanism*, ed. Mads Rosendahl Thomsen and Jacob Wamberg (London: Bloomsbury Academic, 2020), Ch. 18, argues to the contrary: not only will medicine evolve to include non-therapeutic benefits, but also research and procedures that contribute to posthuman goals are likely to be controlled by medicine and its normative judgements.

As a result, we have defined medicine as “the activity whose purpose is to know, to prevent, to cure the pathological” where the pathological is “the possible threat or the effective presence of an unexpected, inappropriate, disturbing and/or painful expression of the [organism’s normal] functions.”²⁷

Indeed, he states “medicine stands ideally for a pain- and disease-free life.”²⁸ He recognises that these definitions are vague, but sees them as implicit in medicine, a claim I will shortly contest. He does, however, point us in the right direction when he notes that in medicine “normal” is a “limit condition” that identifies how far we need to go, whereas “enhanced” is limitless.²⁹ Hence:

With respect to this definition, we wish to emphasise the fact that certain anthropotechnical actions do not even treat medical or existential suffering, but aim at satisfying desires, or fulfilling professional requests. Moreover, anthropotechnical acts may sometimes generate suffering and may carry a risk without any benefit from the medical point of view ... Anthropotechnics is sometimes the opposite of medicine.³⁰

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- 27 Goffette, “Enhancement” (section “Fundamental concepts”). Implicit in this statement is that these are (roughly) species-typical, or “normal” functions.
- 28 Goffette, “Enhancement” (section “The deontological problem”). This is deeply problematic, and contributes to the pathologisation of ordinary human experience and the illegitimate expansion of the medical gaze, which are major themes in the work of Stanley Hauerwas and others. See Sloane, *Vulnerability and Care*, 83–93; Stanley Hauerwas, *Suffering Presence: Theological Reflections on Medicine, the Mentally Handicapped, and the Church* (Edinburgh: T&T Clark, 1986); Stanley Hauerwas, *Naming the Silences: God, Medicine, and the Problem of Suffering* (Grand Rapids: Eerdmans, 1990); “The End of American Protestantism,” 2014, <http://www.abc.net.au/religion/articles/2013/07/02/3794561.htm> (accessed 15 April 2014); Jeffrey P. Bishop, *The Anticipatory Corpse: Medicine, Power and the Care of the Dying* (Notre Dame, IN: University of Notre Dame Press, 2011); Joel Shuman and Brian Volck, *Reclaiming the Body: Christians and the Faithful Use of Modern Medicine* (Grand Rapids: Brazos, 2006).
- 29 Goffette, “Enhancement” (section “Fundamental concepts”).
- 30 Goffette, “Enhancement” (section “Fundamental concepts”). He goes on to note that “anthropotechnics sometimes runs counter to the Hippocratic invocation ‘Primum non-nocere,’ or to the more general principles of non-maleficence and medical beneficence.” Goffette, “Enhancement” (section “The deontological problem”).

Moreover, he notes that phenomenologically a medical consultation differs significantly from an anthropotechnics consultation. Not only would the respective consultations have a different sequence of events, but the relationships entailed in them are fundamentally different: the patient becomes a client and the medical doctor is no longer a professional, but a technical service provider.³¹ Phenomenological accounts of the clinical encounter between doctor and patient are crucial to a proper philosophical and theological account of medicine,³² and so these disparities in patient/client experience indicate profound differences between these disparate practices. I should note that while he argues that we need “a sharp distinction between medicine and anthropotechnics,” this does not entail opposition to the latter as such, but aims at ensuring that we are clear about what these “concrete practices” are, and what ethical approaches should apply to them.³³

Even if he does so in creative ways, Goffette’s argument trades on the TED and the flawed notion of medicine entailed in it, and so would stand or fall in its current form along with that distinction. Nonetheless, the distinction he draws between medicine and anthropotechnics is a helpful one, and can be rearticulated in line with a more satisfactory account of medicine. Here is how I would put it. In a medical consultation a person presents as a patient (with a real or prospective vulnerability, a lack that interferes in actuality or prospect with their agency) to a doctor who is responsible to use their power and expertise in caring for them in that “health-oriented” need, with the goal of them experiencing solidarity with others in their need and, where possible, returning them to their life in society. In an anthropotechnics

31 Goffette, “Enhancement” (section “The sequence of consultation”).

32 Frederik Svenaeus, *The Hermeneutics of Medicine and the Phenomenology of Health: Steps Towards a Philosophy of Medical Practice* (Dordrecht: Kluwer, 2010); Sloane, *Vulnerability and Care*, 68–73.

33 Goffette, “Enhancement” (section “Conclusion”). And, I should note, while that is an important conceptual distinction, this relates to paradigm instances (or exemplars) of medicine and anthropotechnics respectively. As I will articulate it, this sharp conceptual distinction does not establish or require sharp lines of demarcation between these practices. For brief discussions of demarcation and approaches that depend upon that notion, see Sloane, *Vulnerability and Care*, 88–89, 94, 161.

consultation, a person would present as a client, with effective agency that they wish to enhance by specific technical means for freely chosen ends, to an anthropotechnician who is responsible to respond (or not) to that request with information and technical expertise that might enable that person to achieve their goals and expand their agency.

That, of course, presupposes a different philosophy of medicine to the one generally presupposed in these discussions.³⁴ So, let me come to the point. Theologically speaking, vulnerability is a fundamental (and theologically significant) feature of human existence; care is medicine's primary response to it.³⁵ Let me unpack that.

Human Vulnerability and Medical Care

We often speak of people suffering from illness, those with infirmity or disabilities, as vulnerable. True as that is, it masks an important truth: humans are inherently finite, limited, and vulnerable creatures. We are biological entities located in, and limited by, space and time. We are grounded in particular times and places (and cultures and languages) that enable and limit our capacities. We are also fragile beings, that can only survive and operate in a restricted range of environments. We are dependent beings: we require others for our survival and flourishing, even as we contribute to theirs. While this is most obvious when we are very young and very old, it is true at every stage in between. Our culture tends to blind us to that vulnerability, and so we may not recognise it—except when we are ill or incapacitated in some way. But illness, injury and disability do not make us vulnerable, they expose our inherent vulnerability and, perhaps, exacerbate aspects of it.

This understanding of human nature is deeply at odds with the way we like to see ourselves and the way our culture shapes us as “au-

34 This is, perhaps, most clearly evident in Rueda, García-Barranquero, and Lara, “Capabilities Enhancement,” 413–18. This situates my account of medicine squarely in the “humanistic” and “phenomenological” traditions, for which see James A. Marcum (ed.), *The Bloomsbury Companion to Contemporary Philosophy of Medicine* (London: Bloomsbury, 2016), esp. “Introduction.”

35 For a detailed articulation and defence of the ideas in the following paragraphs, see Sloane, *Vulnerability and Care*.

onomous agents of choice.” It is also, unfortunately, all-too-neglected in our theological traditions despite its importance in its own right and its contribution to a theology of medicine. Theology of medicine is also integrally related to a theology of community, of persons-in-relationship, for that vision of community provides important context for our understanding of medicine.

In the biblical vision, human beings are created by God in and for community. Human flourishing is flourishing in community and entails benefiting from and (where possible) contributing to the flourishing of that community. This means that societies have the responsibility to ensure that everyone has reasonable access to those goods and services they need in order to function as well as they reasonably can as persons and in relationship—these are what Wolterstorff calls “sustenance rights.”³⁶ These will vary from society to society, but in general will include access to decent housing, clean air/environment, safe drinking water (and the sanitation services that maintain them), safe and nourishing food, education that gives maturing members of the community the knowledge and skills they need to function well in it. I do not think that the Bible mandates particular social or economic systems to ensure that sustenance rights are provided, but it is pretty clear that such provision is mandated (see, for instance, Deut 10:12–22; Psalms 111, 112, 146). And I would suggest that in societies such as ours health care ought to be included in these sustenance rights—at least to a basic standard.

So, in this vision of human life-in-community, medicine is best understood as a social practice furthering particular social and personal goods, and plays an important role in the proper functioning of a well-ordered society. It is one crucial way that a community demonstrates its valuing of those whose vulnerability has been exposed by the exigencies of life—those related to disease and illness, disability and infirmity, and injury and trauma. Rather than abandoning them to isolation and neglect, a properly ordered community ensures that they are treated with dignity—independent of their utility—and provided

36 Wolterstorff, *Until Justice and Peace Embrace*, 73–98.

with a level of care aimed at doing what we reasonably can to sustain them as persons and return them where reasonably possible to a reasonable level of relational functioning.

You will notice a lot of “reasonables” there. That is intentional, not sloppy theology. For in an increasingly technically oriented society (and health care system) there will always be something more that could be done, and that people might ask to be done. But not all such interventions are warranted—not all are reasonable. Moreover, what is reasonable is highly situational, and depends on available technologies, the required infrastructure, personnel and facilities, as well as the relative balance of needs and resources in a particular community. It would be, for instance, unjustified to have world-standard tertiary (and even quaternary) medical facilities at the expense of people in the community having no access to clean water and safe housing—or the money to pay for those services.

So, then, how does all this help us understand the nature and goals of medicine? This all hinges, I would suggest, on vulnerability as a fundamental feature of human existence, care as a primary task of human community, and the particular ways that medicine as it has developed in the late modern period can express that care for vulnerable people. Medicine is an expression of a community’s care for, and solidarity with, those people whose inherent vulnerability as embodied creatures has been exposed by physical and psychological conditions such as illness, disease, injury, infirmity and disability. Its aim is to provide that care and stand with people in their “health-related” needs. Some of that care is warranted just because it demonstrates the care that is entailed in us respecting them as persons. Whether or not it “heals” them, or “improves their health,” or “alleviates their suffering,” it enhances their flourishing and is necessary for the flourishing of our communities. Such care (roughly corresponding to a good general practice and the services that cluster around it), it seems to me, is a sustenance right and ought to be accessible to all persons in the community, regardless of their means.

Other kinds of care are warranted because of their projected benefits: they hold out a reasonable prospect of returning persons to a reasonable level of relational functioning. Providing such care is a provisional good, and is to be supported and celebrated where its provision does not impinge on other social needs. Medicine is not the only social practice that makes a meaningful contribution to our shared lives, nor are “health care” sustenance rights the only ones available.

So, how does that relate to the anthropotechnics project? Well, in some ways the answers are obvious, and are clearly and directly entailed in the theory of medicine I have presented. Anthropotechnics does *not* fall into the remit of medicine.³⁷ But the answer is actually a little more complicated than that, so let me spell it out.

Enhancing Medicine?

Anthropotechnics and the Heuristics of (Bio)medical Research

Let me begin with anthropotechnics research in light of my earlier discussion of theological heuristics: does anthropotechnics research contribute to *shalom*? To determine that, we need to ask some fundamental questions.

First, does a particular anthropotechnics project aim to help us understand fundamental features of the world? In this case, human biological, psychological, personal, and social life? Is it warranted as pure research? Perhaps.

Some basic research might be done by anthropotechnologists with the aim of fostering anthropotechnical goals, but nonetheless provide intrinsically valuable insights. For instance, research into telomeres and their decay and possible repair, or work on intracellular metabolism, might (and have been) both be undertaken with the aim of maintaining cell function and replication in order to inhibit ageing processes. But given that this research may give rise to important insights into fundamental biological processes (with or without possible

37 As noted above, Goffette, “Enhancement,” draws the same conclusion, if on different (and I have argued problematic) grounds.

medical or anthropotechnical applications), it may well be warranted in its own right, and perhaps warranted as (bio)medical research or allied with it. However, research of that kind still needs to be balanced with respect to those fundamental aspects of biology that have bearing on the most significant health care needs of the global population, not just the affluent “West.” In this regard, questions of pure research shade into *praxis*-oriented research, which is not surprising given that life-extension is a key motivator for that research.

Second, does it aim to develop products that might contribute to the wellbeing of people, communities, or the broader created order—or be reapplied to it? Is it warranted as *praxis*-oriented research? Perhaps.

For instance, research that aims to extend human vision further into the electromagnetic spectrum might be repurposed to provide sight to the blind; similarly, research into brain-activated devices might be repurposed for use of people with physical disabilities (and some work has been done along those lines).³⁸ Here it is important to recognise the unintended benefits of technical advances, as well as their limitations and possible harms. Moreover, and in relation to that, we need to be careful about the implications of anthropotechnics for our understanding of disability and our response to people with disabilities: the “normate” assumptions intrinsic to much of this work are all too clear.³⁹

However, given the range of practical needs that need to be addressed, and the relative benefits of such technologies, I have questions about the utility of those lines of research in comparison with others. Significant advances were made in reducing the global burden of health in the period 1990–2019, but the evidence demonstrates that

38 While the claims of potential (and even current) applications are generally overblown, there are some extant examples, for which see: <https://neuralink.com/applications/>; <https://www.newscientist.com/article/2347757-people-with-paralysis-navigate-a-room-via-a-mind-controlled-wheelchair/>.

39 Melinda Hall, “Vile Sovereigns in Bioethical Debate,” *Disability Studies Quarterly* 33:4 (2013), <https://doi.org/10.18061/dsq.v33i4.3870>; Melinda Hall, *The Bioethics of Enhancement: Transhumanism, Disability, and Biopolitics* (Lanham: Lexington, 2016).

addressing the burden of infectious diseases rather than “high-tech” medical care had the greatest impact on bringing the standard of health of lower to middle income countries (LMIC) into line with high income countries (HIC).⁴⁰ Most of that requires little if any sophisticated biomedical research, but rather the implementation of well-established public health strategies and the development of appropriate physical and social infrastructure. Nonetheless, research into effective temperature-stable vaccines that can be produced and distributed relatively easily in resource-constrained environments (in contrast to, say, mRNA COVID-19 vaccines) would be likely to have considerable benefit, especially for children, who often sustain longterm health effects from preventable childhood diseases.⁴¹

In short, if research is to be justified on the grounds of its projected benefit, due consideration needs to be given to the relative benefits of *this* research as opposed to other research projects. I am sceptical that anthropotechnics research would pass such scrutiny. Moreover, given that I am discussing anthropotechnics research, which may/not have “medical” applications, and given the clear distinction we should make between medicine and anthropotechnics, even if such research

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- 40 Juliet Nabyonga-Orem and James Avoka Asamani, “Ensuring the Right to Health along the Life Course,” *The Lancet Global Health* 10:12 (2022), [https://doi.org/10.1016/s2214-109x\(22\)00458-2](https://doi.org/10.1016/s2214-109x(22)00458-2); Annie Haakenstad et al., “Assessing Performance of the Healthcare Access and Quality Index, Overall and by Select Age Groups, for 204 Countries and Territories, 1990–2019: A Systematic Analysis from the Global Burden of Disease Study 2019,” *The Lancet Global Health* 10:12 (2022), [https://doi.org/10.1016/s2214-109x\(22\)00429-6](https://doi.org/10.1016/s2214-109x(22)00429-6).
- 41 It is encouraging to note that a malaria vaccine has recently been recommended by WHO (<https://www.who.int/news/item/06-10-2021-who-recommends-groundbreaking-malaria-vaccine-for-children-at-risk>). Other lines of prevention are also being explored, for which see Kassoum Kayentao et al., “Safety and Efficacy of a Monoclonal Antibody against Malaria in Mali,” *New England Journal of Medicine* 387:20 (2022), <https://doi.org/10.1056/NEJMoa2206966>. More research of this kind is clearly warranted. Moreover, improvements in infrastructure (especially in relation to clean water, sanitation, and housing) and basic social services (especially food security, education, and attending to the rights of girls and women) have a greater impact on the burden of disease than most medical interventions. See Sloane, *Vulnerability and Care*, 7, 19.

were legitimate, I find it hard to see how it could be justified as *medical* research.

Anthropotechnics and Medical Care

So much for research. What about treatments? Should anthropotechnics play a role in medical care?

It is important to recognise that at this stage all such “therapies” are highly speculative, and we should be at least sceptical of the projections made by advocates of anthropotechnics. The hype surrounding stem-cell therapies a decade or so ago, and subsequent disappointing results, ought to give us pause. Indeed, should any anthropotechnics “treatments” become feasible, they would for some time fall into the “experimental research” category rather than “standard care,” and so should be made available on a very limited basis, if at all. That is itself an important point to make, as there are significant pressures in our current medical marketplace to make experimental procedures available to patients—for a variety of emotional, political, and marketplace reasons.

Let me be clear. I am not here invoking the TED. My concern is not whether we can draw a line between treatment and enhancement and, if so, whether we can determine into which category a particular anthropotechnical intervention falls. Rather, the distinction I wish to make is between proposed interventions of unproven or marginal utility, that may come at considerable (and often as-yet-unknown) risk and expense (as is often the case in the development phase of treatments), and those of proven efficacy, risk, and managed cost. Including experimental medical therapies in standard care plans is deeply problematic.⁴² Given the experimental nature of any proposed anthropotechnical intervention, including it in standard medical care is unwarranted. That relates to the more fundamental question of the basis on which any medical care is justified. The same two criteria can be applied to a

42 Sloane, *Vulnerability and Care*, 170–71.

proposed anthropotechnology as those that are used to justify medical care.

Is a particular anthropotechnic intervention an instance of “basic care” that must be made available to all members of a given community as a mark of the respect that is their due as human creatures? I see no grounds on which that claim could be justified, and we have seen many reasons it is not.

Alternatively, does it respond to a clinical presentation in which a person’s vulnerability has been exposed in such a way as to interfere with their relational functioning, and does it hold out reasonable prospect of a return to a reasonable level of relational functioning without impinging on the provision of care to others? And, to ensure that preventative medicine does not lose out, does it hold out a reasonable prospect of preventing a condition that stands a reasonable chance of interfering significantly with the relational functioning of persons in the community—including at a population level, and with a reasonable cost/risk-benefit? I see no grounds on which that claim could be justified, and we have seen many reasons it cannot.

If that is the case, then medicine should not be in the business of anthropotechnics.

Anthropotechnics and the Commodification of Medicine

Whatever the rights and wrongs of “human enhancement,” anthropotechnics is not medicine’s business. Indeed, the temptation to make it so reveals temptations and corruptions of medicine which have become evident in that harbinger of anthropotechnics, the cosmetic medicine industry. Exploration of these matters lies beyond the scope of this piece,⁴³ so let me just make some passing comments in conclusion. Anthropotechnics treats its interventions as commodities to be

43 For this, see Sloane, *Vulnerability and Care*, 9, 25, 27, 88–89, 92, 165, 71, 81; “Concerning Cosmetic Cowboys,” <https://www.spectator.com.au/2022/05/concerning-cosmetic-cowboys/>; Brent Waters, *This Mortal Flesh: Incarnation and Bioethics* (Grand Rapids: Brazos, 2009); Waters, “Flesh Made Data.”

chosen and purchased by “autonomous” individuals as means to attain particular life goals. Medicine already faces the temptation to see itself as a consumer product, with doctors being reduced from moral agents engaged in an inherently moral practice to become mere technicians, purveyors of another product in late capitalist marketplaces. Incorporating anthropotechnics into the business of medicine would only exacerbate those ills.

I use the language of “business of medicine” advisedly, and as a deliberately loaded term. First, because we have already seen the corrupting influence of *business* on medical practice in relation to the “enhancements” of the cosmetic surgery industry. But, second, because in a society-cum-economy such as ours, business interests will inevitably impinge on the practice of anthropotechnics, should it proceed. The cost and benefit of individual procedures will determine their “viability.” But, more importantly, market and political forces will determine what counts as a desirable trait/ability that is worthy of enhancement. That is, quite frankly, deeply unsettling.

Cosmetic surgery (as my chosen harbinger of anthropotechnics) exposes another way in which technology and the market are colonising human personal and social existence, instrumentalising and commodifying the body itself. In so doing, it seems to me it renders both the body and the technologies deployed to modify it captive to expressive individualism. The nihilistic will of late modernity rejects the givenness of the body and the limitations and vulnerabilities inherent in embodied existence in space and time, and seeks to render it malleable, subject to the sovereignty of “autonomous choice.”⁴⁴ This is deeply ironic, given the role that the market and commercial interests play in shaping the self-understanding that these “autonomous individuals” wish to express. For medicine to become yet another instrumentality of the market is as ironic as it is appalling.

44 For the notion of the ‘nihilistic will’, see David Bentley Hart, “God or Nothingness,” in *I Am the Lord Your God: Christian Reflections on the Ten Commandments*, ed. Carl E. Braaten and Christopher R. Seitz (Grand Rapids: Eerdmans, 2005), 55–76.

And so, after all of this, my answer is fairly straightforward. Whatever we may think about the intrinsic possibility and desirability of “human enhancement,” what I have called *anthropotechnics*, it is not the business of medicine. Pursuing it would only exacerbate medicine’s growing captivity to technological imperatives, market forces, and the commodification and instrumentalization of the body itself. Far from enhancing medicine, anthropotechnics runs the risk of corrupting it.

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