Catholic Perspectives on Human Biotechnological Enhancement

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ABSTRACT

Although there is some consonance in the language of transcendence between proponents of the Catholic faith and of human biotechnological enhancement (HBE), their goals are incommensurate. Nevertheless, consistent with the valuation of the body as integral to the human person, Catholic culture has in fact proven to be a fruitful context for developing external therapeutic HBEs. Catholic perspectives on internal HBEs, especially in the context of 'transhumanism', are, by contrast, neither clear-cut nor easy to establish. A prerequisite for progress is to understand what is meant by flourishing in a Catholic worldview, the root metaphor of which is second-person relatedness to God, culminating in divine friendship. Hence important measures of success of internal HBEs will include sustaining, or at least not impeding, thoughtful attention and the capacity to receive experiences that can sanctify the mind.

Introduction

There are grounds for supposing that proponents of the Catholic faith and of human biotechnological enhancement (HBE) share at least vaguely consonant aspirations. Like many advocates of HBE, Catholicism places a strong emphasis on the importance of transforming human nature with new dispositions, powers and goals.[1] This theological transformation of human life into a new and supernatural life of grace draws from the revelation of Jesus Christ as the new Adam,[2] who enables human beings to be born again as children of God by water and the Holy Spirit (John 3:5), and thereby partake in the divine nature (2 Peter 1:4). The goal of this shared divine life is to be happy with God forever, a goal that transcends natural desires (cf. 1 Corinthians 2:9). But transcendence in a more general sense is also manifest in some contemporary enthusiasm for HBEs, again suggesting some roughly parallel aspirations.[3]

Another point of consonance is rooted in the Catholic understanding of the unity of body and soul, expressed in Aquinas's principle that the soul is the form of the body rather than a separate substance.[4] Hence reasoning is not the act of some separate thinking entity but of particular embodied humans involving what is known is through sensible encounter with the world. But human bodies also have customary clothes and possessions, which in part mediate this sensible encounter. Indeed, one can regard Genesis 3:21 as a description of the primary and divinely-

1 See Part III.1.3 of the *Catechism of the Catholic Church*, especially article 2 on "Grace and Justification" (n. 1987-2029). This focus on whole-person transformation is in contrast to traditions that, at least in theory, regard salvation in terms of a declaration or imputation of righteousness.

2 Romans 5:12-21; 1 Corinthians 15:45. The complementary tradition of referring to Mary the Mother of Jesus as the 'second Eve' goes back at least as far as St Irenaeus in the second century, *Against Heresies*, 3.19.

3 As Burdett has argued, they seek immortality, glorification, and self-transcendence through technological means, cf. Michael S. Burdett, *Eschatology and the Technological Future*, Routledge Studies in Religion (New York: Routledge, 2015), pp. 100-101. Gerald McKenny has observed the parallel between transhumanism and Christianity in agreeing that there is an immanent desire for transcendent ends while disagreeing on the exact nature of these ends and their attainment. See Gerald McKenny, "Transcendence, Technological Enhancement, and Christian Theology," in *Transhumanism and Transcendence: Christian Hope in an Age of Technological Enhancement*, ed. Ronald Cole-Turner (Washington, D.C.: Georgetown University Press, 2011), pp. 186–201.

4 Thomas Aquinas, *Summa Theologiae* (*ST*) I.76.1.

instigated instance of a customary enhancement of the body, namely the Lord God making tunics of skin for the fallen man and woman after they fail to clothe themselves with anything more durable than fig leaves (Genesis 3:7). Another and more positive connection between the state of the soul and the clothing of the body can be found in the accounts of the glorification of Jesus Christ's clothing during his Transfiguration (Matthew 17:1–8, Mark 9:2–8, Luke 9:28–36, cf. 2 Peter 1:16–18), as well as the power of this clothing to heal the sick (Matthew 9:20-22).

Catholic culture has incorporated and manifested these insights in various ways, including the provision of special clothing, especially for liturgies. Catholics have also reverenced the clothing and customary possessions of saints, on occasion even portraying their pets with them in glory in stained glass.[5] Such representations convey implicitly the belief that the state of one's soul is expressed in part, even into eternity, by the customary environment of one's body beyond the skin. Hence, just as some philosophical anthropologists today refer to an extended mind, encompassing the customary environment of the body beyond the skin,[6] Catholicism might be said to respect the notion of what we call here the *extended soul*.

This desire for transcendence combined with the notion of an extended soul mean that Catholicism is not unfamiliar with the principle of enhancing the everyday environment of the body, a zone that is also of interest for certain types of HBEs today, such as prosthetic or wearable technologies.[7] Indeed, there is a surprisingly long history of such technologies in Catholic societies. As a practical example, the first development of optics in the West owes a great deal to

5 An example is the portrayal of St Philip Howard, with the dog who kept him company in prison, in the stained-glass window of Arundel Cathedral, Sussex, England. More generally, pictures of saints in glory invariably have clothing and sometimes other items closely associated with the stories of their lives.

6 Andy Clark and David J. Chalmers, "The Extended Mind," in *The Extended Mind*, ed. Richard Menary (Cambridge, Mass.: The MIT Press, 2010). Mark Rowlands, *The New Science of the Mind: From Extended Mind to Embodied Phenomenology* (Cambridge, Mass.: MIT Press, 2010).

7 Drawing a distinction between prosthetics and tool-use is challenging and beyond the scope of the present paper; here it is sufficient to note that there is a difference, even if it is not always clear and distinct.

the Oxford Franciscan Roger Bacon OFM (d. c. 1292), and first-ever picture of someone wearing a pair of spectacles is a portrait of the Dominican Cardinal and renowned biblical scholar Hugh of Saint-Cher, painted by Tommaso da Modena in 1352. Building on such tools, what began as the therapeutic correction of human defects of vision led in time to the development of tools to enhance perception to the very distant and very small, far beyond the resolution of the unaided human eye. These innovations join a host of others that have been developed in Catholic cultures, such as, for example, the revolutionary development of tactile languages for the blind.[8]

Admittedly, these technologies that involve the customary, everyday bodily environment beyond the skin (what might be called '*external* HBEs') have to date generally been therapeutic rather than enhancing in the proper sense. By contrast, the key questions today tend to focus on technologies to modify or add to the body itself by means, for example, of pharmacological treatments, surgeries, implants, and genetic engineering (what might be called '*internal* HBEs'). For many reasons these technologies are more complex to assess from a Catholic perspective, especially in the context of 'transhumanism', an aggregate of cultural and philosophical movements with a general aim of transcending human limitations by technological means.

First, at the time of writing, transhumanism is recent, vaguely defined, and highly speculative, making the preparation of formal magisterial assessments challenging.[9]

Second, transhumanists desirous of employing internal HBEs and theologians inhabit vastly different worlds of discourse and often have vastly different first principles, especially in regard to what is meant by human good, raising difficulties in communication and interpretation.

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8 These languages started with the work of Valentin Haüy (d. 1822), founder of the first school for the blind, and were brought to maturity by his gifted student, Louis Braille (d. 1852).

9 The Church is generally cautious in responding to new technological developments, waiting to distinguish the practical from the fanciful and what is important from what is ephemeral.

A third and more conceptually difficult challenge is that although Catholic cultures have welcomed external HBEs, caution is needed in transposing from external to internal HBEs, given the need to take account of additional moral and theological factors, especially surrounding the dignity, integrity, and mortality of the human body.

What can at least be said from the start is that the issue is not clear cut. On one hand, Jesus declares, "If your right eye causes you to sin, pluck it out and throw it away; it is better that you lose one of your members than that your whole body be thrown into hell" (Matthew 5:29).[10] In other words, even a drastic change to ordinary bodily integrity may be an instrumental benefit in some circumstances. In addition, the example of the Resurrection implies that one's wounds, if sustained for the sake of salvation, can even add to one's glory (John 20:27). If, therefore, even detractions from the body can be instrumental goods for salvation, it is hard to see that enhancements should be excluded without consideration.

On the other hand, there is a habit of caution in Catholic cultures regarding what impacts on the integrity and dignity of the body.[11] Any manipulations of the body that destroy its life in order to achieve other biotechnological goals are absolutely forbidden, as is the case in harvesting stem cells from human embryos.[12] More generally, Catholic culture is highly sacramental, with a strong emphasis on the concretely given supernatural, and therefore accords the body a dignity that overflows from the soul as its form. One manifestation of this emphasis is the normal Catholic practice of burial of the dead and, in some countries, the construction of elaborate necropolises, acknowledging the dignity due to human bodies as temples of the Holy Spirit. Hence there is or

10 This translation and others in this paper are taken from the Revised Standard Version.
11 See, for example, John Paul II, "*Evangelium Vitae*," (March 25, 1995).
12 Juan de Dios Vial Correa, "Declaration on the Production and the Scientific and Therapeutic Use of Human Embryonic Stem Cells," (August 25, 2000).

will be an instinctive wariness about any HBEs that encourage a habit of treating the body as a kind of mouldable plasticine or a set of interchangeable machine-like tools of the mind. Such habits may have the long-term effect of eroding human dignity even in the absence of other concerns.

Any well-grounded account of Catholic perspectives on internal HBEs has therefore, as a first step, to summarise what it means to flourish from a Catholic perspective. Once this anthropology is clarified, it is easier to assess the potential contributions or detractions of internal HBEs. In this paper, after addressing these potential risks and benefits in general, we also consider, as a special case, the questions raised by prospects of biotechnological immortality.

Theological flourishing

The histories, legends, and other writings of the classical world offer many exemplars of varieties of human perfection, such as Aeneas, Aristotle, Hercules, Kongzi (Confucius), Pericles and Socrates, among others. Many influential articulations of virtue ethics, especially the *Nicomachean Ethics* (still the canonical text of the Western tradition of virtue ethics), owe a great deal of their accounts of human flourishing to such exemplars and associated writings. Enhancements beyond natural human flourishing are also part of classical narratives, portrayed normally in terms of augmented and divinely-bestowed mental or bodily powers.

By contrast, Eucharistic Prayer I (the 'Roman Canon') of the Catholic Mass, developed from the liturgies of the ancient Church, preserves the names of many early Christians who departed radically from these classical ideals. Many of these saints were women. They were also drawn from extremely diverse backgrounds, such as the noblewoman St Perpetua and the slave St Felicity who died with her. Many of these saints, both men and women, were also relatively uneducated by worldly standards, including labourers, artisans, and fishermen. The list even includes the child

St Agnes, who was killed for her Christian faith at about the age of twelve. Such saints are certainly regarded as having received divine enhancements, but principally in terms of gifts for their spiritual and moral fruitfulness, with its source and goal being the love of God.

Although the change in exemplars from the classical world to Christianity was striking, the development of a systematic anthropology to articulate this change proved difficult. Only in the thirteenth century did St Thomas Aquinas address this challenge by writing what might be called the Christian counterpart to Aristotle's *Nicomachean Ethics*, principally the first 170 questions of the second part of the second part of the *Summa theologiae* (ST). In recent years, one of us, Andrew Pinsent, has provided a new interpretation of Aquinas's work, drawing also from recent findings in experimental psychology in a field called 'joint attention' or 'shared awareness of shared focus' with a second person.[13] Although these phrases may seem rather technical, joint attention is commonplace and is most clearly apparent in the interpersonal interactions of children, especially pre-linguistic children. Examples include pointing or following points, exchanging smiles, lifting one's hands to be lifted up, and all kinds of play.[14] Joint attention is not principally about attending to another person directly, but attending *with* the other person, and allowing one's attitudes to the shared physical or abstract object of attention to be shaped by the attitudes of the other person.

In contrast to classicism, with God as a remote unmoved mover, the key principle of Aquinas's theological flourishing is joint attention or shared awareness of shared focus with God. In this manner, like a child engaging in joint attention with a human parent, one comes by direct and

13 Andrew Pinsent, *The Second-Person Perspective in Aquinas's Ethics: Virtues and Gifts* (New York; Abingdon, UK: Routledge, 2012).

14 Naomi Eilan et al., eds., *Joint Attention: Communication and Other Minds: Issues in Philosophy and Psychology* (Oxford: Clarendon Press, 2005). The phrase "shared awareness of shared focus" is adapted from the chapter of Peter Hobson in this volume, p. 185.

indirect means to know and love *with* God, as God knows and loves.[15] Over time, this spiritual second-person ('I'-'thou') relationship can mature into the fruitfulness of covenantal love, variously described as a spiritual marriage or divine friendship with God (cf. James 2:23).

For the continuing Catholic tradition today, the greatest good for any human being is the holy fruitfulness of this second-person relationship with God, and the greatest evil is to lose this relationship by serious sin (with 'sin' understood as a kind of spiritual adultery). Combined with the belief in the Resurrection, bodily and intellectual fruitfulness is ultimately linked to this spiritual fruitfulness: those who die in friendship with God will also ultimately receive their glorified bodies. In this state, even defects of the body of all kinds that are sustained for the sake of divine love in this present world will contribute to a person's glory in eternity.

Potential risks to theological flourishing from HBE

From the account above, it should be fairly evident that flourishing as a person relating to persons in the Catholic sense has a rather complex and sometimes counterintuitive relationship with flourishing in mind and body. Of course, all other things being equal, flourishing in mind and body is good, but it is a subsidiary rather than the primary good of the human person in Catholic theological anthropology. Indeed, it is possible in theory and certainly quite common in practice to fail to flourish in mind and body and yet be spiritually and moral fruitful.

Consider, for example, the contrasting cases of Blessed Margaret of Metola (d. 1320) and King Solomon. Blessed Margaret was born blind and a midget, with a severe curvature of the spine. She was locked away and later abandoned by her wealthy parents, expelled from a lax

[15] There is an incommunicable supernatural core to this relationship that is beyond philosophical analysis, but this core is supported by a great many natural and visible practices, including the narratives of scripture and the face of Christ in art, assisting a person to 'know' God and not merely know about God.

convent for being too devout, but made a deep spiritual impact on the village where she finally lived, cared for the village children, and died, aged thirty-three. Ultimately, Margaret was a spiritual success, and even her body was found in a remarkable state of preservation two hundred and forty years after her death.[16] By contrast, Solomon, the philosopher-king of the Old Testament who built the temple and was given every earthly blessing, including unsurpassed wisdom (1 Kings 3:3-15), multiplied his wives and then his gods and was cruel to his own people, breaking his covenant with God.[17] Despite the divinely-bestowed enhancement of his wisdom, the highest gift by classical reckoning, Solomon was ultimately a spiritual failure and his kingdom broke up after his death.[18]

Given that one can be enhanced to a level of spectacular success and fame beyond the entirety of humanity and yet be a spiritual and moral wreck, any actual or speculative HBEs have to be assessed very carefully in the light of the first principles of fruitfulness in the theological life. As noted previously, the core principle of theological anthropology is second-person ('I'-'thou') relatedness with God, oriented towards divine friendship. Starting from this principle, one can derive some general heuristics regarding the kinds of HBEs that present potential risks.

First, one has to be very cautious of anything that risks fragmenting the first person 'I', since one has to be 'I' in order to relate to 'you'. Indeed, the internal fragmentation and opposition of what 'I' desire is part of what gives rise to the isolation caused by sin, a theme explored in detail

16 Joan Carroll Cruz, *The Incorruptibles: A Study of the Incorruption of the Bodies of Various Catholic Saints and Beati*, 1st edition (Rockford, Ill: Tan Books, 1976), pp. 81–82.

17 On the failure of Solomon, see Andrew Pinsent, "Wisdom and Evil," in *The Wisdom of the Christian Faith*, ed. Paul Moser and Michael McFall (Cambridge, England; New York: Cambridge University Press, 2012), 99–120.

18 On the classical account of human perfection wisdom is the highest virtue according to Aristotle, cf. *Nicomachean Ethics* VI; but divine love (*caritas*) is the highest virtue in Christian anthropology, cf. 1 Corinthians 13:13.

by Eleonore Stump in her book, *Wandering in Darkness*.[19] Considering more general conditions, the sense of a unified self does seem to be remarkably robust, even in split-brain patients. Nevertheless, transplants of the brain, if they proved possible, would be problematic simply because personal history and hence, to a large extent, identity is imprinted on the ever-changing structure of the brain and nervous system. As for downloading brain patterns into some sort of electronic medium or new body, these proposals remain so speculative as barely to warrant comment. But we note in passing that these speculations raise serious questions about the continuity of personal identity. Moreover, given the importance of the particular human body to the unity and timbre of human experience, such attempts may risk severe cognitive dissonance to the point of madness, which would scarcely be conducive to flourishing in any sense.[20]

Second, one has also to be cautious of anything that risks numbing or fragmenting the capacity to engage in sustained thoughtful attention, or what is underlined in the Gospels by Christ's injunction to "Watch!" (e.g. Mark 13:37). A precedent here is the Church's view on palliative care. Pope Pius XII affirmed the value of painkillers to alleviate the suffering of the dying but cautioned against protracted and deep sedation that negated a person's relational and communicative abilities.[21] In other words, he warned against the denial of consciousness without good reason, the ground of the ability to sustain attention, especially as death is a supremely important act.

Applying this principle to HBEs, it is evident is that at least some existing technologies present at least some risk to the habits of sustained thoughtful attention. As a commonplace example, the

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19 Eleonore Stump, *Wandering in Darkness: Narrative and the Problem of Suffering* (Oxford: Clarendon Press, 2010).

20 On the role of the body, see, for example, Varela, Francisco J. *The Embodied Mind: Cognitive Science and Human Experience*. Revised edition with new foreword by Jon Kabat-Zinn, and new introductions by Evan Thompson and Eleanor Rosch (Cambridge, Massachusetts; London, England: The MIT Press, 2017).

21 Pope Pius XII, "Address to an International Group of Physicians," *Acta Apostolicae Sedis*, 49 (February 24, 1957): n. 145. Pope John Paul II re-affirmed this teaching in *Evangelium Vitae* n. 65.

users of customarily-carried wearable smartphones can and often do escape to addictive, superficial entertainments, thereby retreating to a pocket-sized version of Plato's cave that they carry around almost everywhere.[22] One does not have to take a theological perspective to be aware that this escapism is addictive and socially damaging, and a similar assessment would apply to certain kinds of internal HBEs. For example, the ability to plug into a distracting succession of experiences *internally*, through some implant, would potentially be even more ruinous.

Third and most serious, however, is that the entire world of transhumanist technologies and even speculations about transhumanism can encourage dispositions that pose moral risks to theological flourishing. Although the ability to relate to God as 'I' to 'you' is a result of the supernatural gift of grace, human persons (according to Catholic teaching) play some role in reception and fruition of this gift. In the absence of this gift, one has to cease to resist it, and, in possession of this gift, one has to allow oneself to be inspired to align with God. Hence moral dispositions play an important role; one cannot act in ways that contradict the love of God.

On this account, it is not difficult to identify moral risks. For instance, an exclusive immersion in the world of transhumanist speculations can risk a habit of thinking of human beings as machines rather than persons, reduced to mere matter to be manipulated. Obviously, it may then become hard to retain a graced attitude to human beings as potential or actual children of God, to be treated with a commensurate dignity.[23]

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22 Jean M. Twenge, "Have Smartphones Destroyed a Generation?," *The Atlantic*, September 2017, https://www.theatlantic.com/magazine/archive/2017/09/has-the-smartphone-destroyed-a-generation/534198/.

23 The question here should not be confused with that discussed by prominent critics and proponents of HBE regarding whether or not internal enhancements would necessarily result in an inherent loss of dignity, cf. Nick Bostrom, "In Defense of Posthuman Dignity," *Bioethics* 19, no. 3 (2005): 202–14. Rather, the observation is that to overlook the personal character of human beings is morally damaging to those who ignore this dignity. We note in passing that even were a hypothetical, misguided attempt at enhancement to destroy the capacity for a willing assent to faith, it would not destroy the potency to participate in the life of grace. Such a person would be analogous to the mentally ill who may still receive Baptism (*ST* III.68.12). To summarise the Catholic perspective on this point, no one belonging to the human species, however distorted, can lose the

An even more serious risk concerns power itself. HBEs are about enhancing powers of various kinds, and the power to enhance powers carries a special moral hazard. The nature of this hazard can be understood by reference to an analysis of pride. According to Aquinas (*ST* 2a2ae, q.162, a.4), drawing from a tradition going back to Pope St Gregory the Great, pride has four species:

P1 Ascribing to oneself a good greater than one possesses.

P2 Thinking that one has acquired for oneself some good that has been received from God (or some other person).

P3 Thinking that some good that one has received from God (or some other person) is due to one's own merits.

P4 Thinking that some unmerited good that one has received from God (or some other person) is greater insofar as others do not have it.

One important inference from this list is that there is nothing in these descriptions that rules out having certain powers, being aware that one has these powers and even being honoured for these powers.[24] Hence enhancements of various kinds are not wrong in themselves.

The source of moral hazard is, rather, that transhumanist transcendence can become an addictive substitute for the transcendence of grace, thereby blocking reception of the actual gift of grace. After all, in very broad terms, transhumanism often involves the promise of godlike-powers, and the aspiration for such powers can risk being confused with the gift of transcendence arising

dignity of being in potential relationship with God nor can any person, however great the excellences developed through nature or technology, fully realize their dignity apart from this relationship.

[24] What is at stake in the difference between a good disposition for greatness (magnanimity) and an evil one (pride) is the manner in which greatness is attained. Magnanimity arises naturally out of second-person relatedness, whereas the various species of pride are self-isolating. See Pinsent, *The Second-Person Perspective in Aquinas's Ethics*, pp. 77–83; Aquinas, *ST* III.129, 162.4.

from communion with God,[25] hence giving rise to P1 and P2 pride. Since, moreover, it is unlikely that everyone will have HBEs, there is also the potential for cultivating P3 and P4 pride as enhanced persons relish their superiority over those who lack such powers.

The identification of these risks should not be taken to imply that everyone desirous of internal HBEs is a moral monster, but we should not be naïve about the moral risks of power and the desire for power. After all, one cannot easily engage in humble joint attention with the God of love if the entire focus of one's life is on HBEs with the aim of turning a few human beings into biotechnological gods. On this point, it should be noted, the transhumanist aspiration and its consequences are nothing new, but join a lineage that extends past Julian Huxley[26] through the Enlightenment and beyond to the ancient Gnostics. As articulated by Pico de la Mirandola,

> It will be in your power to degenerate into the lower forms of life, which are brutish. Alternatively, you shall have the power, in accordance with the judgment of your soul, to be reborn into the highest orders, those that are divine.[27]

On this account, even as early as 1486, Pico claimed that one can make oneself whatever one wants to be, even a god. But the desire for divine power is not the same as the desire for divine love, and indeed tends to be self-defeating insofar as pride isolates oneself.

The yearning for self-wrought transcendence is therefore toxic both to the love of God and to the desire for the love of God, echoing the fall of Satan, who fell through a desire to make himself like God rather than loving God in joyful humility. Hence even all-consuming aspirations for

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25 As happened with the imputation of a cult of divinity to ancient Roman Emperors, generally but not always after their deaths.

26 Cf. Julian Huxley, *Evolutionary Humanism* (Melbourne: Australian Institute of International Affairs, 1954).; Julian Huxley, *Religion Without Revelation*, What I Believe (London: Ernst Benn Ltd., 1927).

27 Giovanni Pico della Mirandola, *Oration on the Dignity of Man*, ed. Francesco Borghesi, Michael Papio, and Massimo Riva (New York: Cambridge University Press, 2012), p. 117.

HBEs, regardless of their actualisation, present moral risks. In particular, they risk inhibiting that which, according to tradition, alone satisfies the disquiet of the soul: flourishing in the context of a graced happiness that surpasses natural understanding and desire (1 Corinthians 2:9).

Potential benefits from HBEs

Having established that there are serious risks, the question arises as to whether HBEs offer any benefits from a Catholic perspective, assuming all the risks can be avoided. This question is extremely difficult to answer in the abstract, because much of what is written about HBEs is still speculative and the scope of possible future enhancements remains extremely broad.

Nevertheless, it is possible to evaluate some speculations, starting by addressing the enticing claim that HBEs might, one day, offer a short cut to virtue, for example, by managing disordered appetites through pharmacological means. From the perspective of theological anthropology, however, there are theoretical reasons to be sceptical of the implications of such claims, regardless of how the technology develops.

First, at least according to Catholicism, the ultimate moral focus is on the will, without which neither love nor sin are really possible. The will cannot will the true good without grace, and grace is not something that HBEs can provide since it is a divine gift; the initial role of human beings is simply to cease to resist the gift, like St Augustine at his conversion.[28] Moreover, although one can suspend the human will in an unconscious state, or give incentives of pleasure or pain to make a good choice of the will more attractive, the will cannot be forced or manipulated directly through power or technique, even by God, without ceasing to be what it is.[29]

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[28] By the phrase "ceasing to resist", we are referring implicitly to Eleonore Stump's account of a quiescence of the will, developed in a series of works starting with Eleonore Stump, "Augustine on Free Will," in *The Cambridge Companion to Augustine*, ed. Eleonore Stump and Norman Kretzmann (Cambridge, England: Cambridge University Press, 1993), pp. 124–47.

[29] See, for example, Aquinas *ST* I.83.1.

Second, as rational beings we can and do try to incentivise good actions, and a good deal of the culture of a well-functioning church and society is meant to assist this goal. Future HBEs might have some similar supplementary value by making certain virtues more attractive than their corresponding vices. Nevertheless, Scripture and Tradition suggest strongly that even perfect beings in this present world, with no disordered appetites and in perfectly ordered environments, can fall into sin. Apart from the story of the Fall, one can cite also the case of the initially virtuous King Solomon, noted previously, or indeed the example of some naturally perfect beings, namely angels, who have no disordered bodily appetites and yet have become evil.[30] At the heart of the issue is that fact that quiescence of the will, making joint attention with God possible, is not directly about any bodily appetites at all, and so is opaque to direct external persuasion.

As regards the state of mind required for sustained attention, a prerequisite of joint attention, and hence of spiritual growth in the life of grace, it is not impossible, though presently fairly speculative, that HBEs may also play some supplementary supporting role.

First, as noted previously, some external HBEs are already damaging to sustained attention, but other technologies may enhance it. Already, in practice, Catholics use a wide variety of external HBEs to aid such attention and structure prayer. For instance, heaters and air conditioners are employed in many parts of the world to avoid distracting extremes of temperature in places of prayer, and artificial stimulants like coffee are often consumed before early morning devotions. Artefacts such as rosary beads enhance one's ability to focus on the content of prayer rather than one's own mental efforts to track prayers. One can also include, under this heading, technologies to encourage joint attention in prayer with other human persons, such as the development of

[30] Cf. Aquinas, *ST* I.63.

musical notation to aid chant. Along similar lines, it is possible that internal HBEs may in future be harnessed to promote similar goals of sustained and harmonious attention.

Second, expanding the scope of the objects of one's attention may carry some potential spiritual benefits, provided distraction is avoided. Catholic culture tends to be artistically rich, stimulated by a wholesome desire to represent the concretely given supernatural. The products of such representations can and do feed the imagination and understanding, and the development of electronic imaging and transmission has already made many of these representations far easier to access than a few decades' ago. The development of internal HBEs of various kinds may one day open the door to direct communication of embodied experiences. Although the moral hazards of such technologies would be considerable, there is no obvious reason why carefully selected sanctifying experiences could not have a wholesome spiritual impact.

Third, a counterintuitive aspect of Catholic cultures is that a commitment to seeking eternal things does not rob proximate and penultimate goods of their worth. To give a few examples, people committed seriously to a life of Catholic faith also proposed what became the theory of the Big Bang (Fr Georges Lemaître), developed genetics (Fr Gregor Mendel), invented astrophysics (Fr Angelo Secchi), and wrote tales about hobbits, complete with languages and intricate histories that are beautiful but lack any obvious spiritual utility (J. R. R. Tolkien).[31] These ambitious projects raise the question of how time spent on them is compatible with the overriding goal of life, from the Catholic perspective, namely seeking friendship with God.

One possible resolution is in thinking of joint attention with God as a kind of play, like the role of play in the development of children. When a person in grace works on deep questions about

[31] Tolkien illustrates the possible value of proximate goods for the afterlife in his fable "Leaf by Niggle". J. R. R. Tolkien, "Leaf by Niggle," in *Tales From the Perilous Realm* (Boston; New York: Houghton Mifflin Harcourt, 2008), pp. 283–312.

the natural world, or crafts rich secondary worlds, that activity can itself be a spiritual activity with God that promotes union with God and is appropriate to the adopted children of God. On this account, future internal HBEs that enhance human cognitive, exploratory, and perhaps even creative powers also have the potential to enrich the life of grace. Such enrichment requires that these powers are devoted to goals that are compatible with the goodness of God but does not require that they are always employed directly in support of overtly theological goals.

The ultimate challenge of death

Finally, the topic of death deserves its own special consideration, given that the mitigation or defeat of death is one of the aspirations of many proponents of internal HBE. A perusal of the "Transhumanist FAQ" published by Humanity+ (formerly the World Transhumanist Association, founded by Nick Bostrom for public outreach) confirms that facilitating individual acquisition of physical health, intellectual ability, subjective well-being, and preservation from death are key goals of transhumanists.[32] On the latter point, the goal is still very much speculative and would, if technically possible, give rise to immense social and political problems, not least due to the fact that a finite world without death would need also to be a world largely without new life.[33]

Assuming that all these issues could somehow be resolved, there would still be stark differences between proponents of Catholicism and earthly deathlessness. In 2007, Pope Benedict XVI addressed this issue briefly as follows:

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32 "Transhumanist FAQ," *Humanity+* (blog), accessed August 17, 2018, https://humanityplus.org/philosophy/transhumanist-faq/.

33 Admittedly, the possibility of accidental death most likely could not be wholly eliminated, so in the real rather than ideal world some new lives would invariably need to be created to replace those lost, albeit at a radically reduced rate. We note in passing that speculations about intersidereal travel and colonisation, which many transhumanists anticipate and welcome, would also afford the possibility of producing new lives to act as pilgrims or to replace any members of the world who chose to depart on an expedition.

> To continue living for ever —endlessly—appears more like a curse than a gift. Death, admittedly, one would wish to postpone for as long as possible. But to live always, without end— this, all things considered, can only be monotonous and ultimately unbearable (*Spe Salvi*, n.10)[34]

As noted in this passage, we would wish to postpone death as long as possible and yet an indefinite biotechnological postponement would raise its own problems. The Holy Father refers to monotony, to which could be added the insight, well known to the advertising industry, that the world is always promising happiness, but no worldly goods ultimately satisfy us.

Of course, a ceaseless stream of discontents might spur the deathless ever onwards to endless achievements, but would this endless mountain-climbing gratify in the absence of a summit, or could the dissatisfaction itself could be neutralised by technology? And if dissatisfaction is unending, there may be a peculiar kind of psychological trap. The indefinite opportunities that remain available to the powerful to try to find worldly gratification, and the fear of losing these opportunities, might mean that it becomes ever more difficult, psychologically, to let go of an enhanced life. Like the life-extending effect of the Ring of Power in Tolkien's *The Lord of the Rings*,[35] the kind of immortality bestowed by HBEs might risk ultimately becoming unbearable, yet impossible to relinquish if one has given up on any theological hope of eternity.

One does not, it should be noted, even need an explicitly theological outlook to perceive these and related problems. Death is part of a set of interlinked challenges faced by human beings, including the psychic division of sin, the problem of suffering, and a sense of dissatisfaction and incompleteness. And whatever else it does, death completes the story of a life, without which it is

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[34] Benedict XVI, "Spe Salvi (On Christian Hope)," 30 2007, http://w2.vatican.va/content/benedict-xvi/en/encyclicals/documents/hf_ben-xvi_enc_20071130_spe-salvi.html.

[35] J. R. R. Tolkien, *The Lord of The Rings*, Reprint edition (London: HarperCollins, 1995), chap. I.2.

not easy to assess that life as a whole. On this point, Steve Jobs, the late tech mogul, is one of many who have offered surprisingly positive reflections on the value of death,

> Remembering that I'll be dead soon is the most important tool I've ever encountered to help me make the big choices in life. Because almost everything — all external expectations, all pride, all fear of embarrassment or failure — these things just fall away in the face of death, leaving only what is truly important. Remembering that you are going to die is the best way I know to avoid the trap of thinking you have something to lose. You are already naked. There is no reason not to follow your heart.[36]

Jobs' insight that the awareness of death can help one to live more wisely is scarcely original, being found, for example, in Psalm 90:12. What was striking, however, is that this architect of much of our contemporary technological experience, with its immanent frame, should have reached such a perennial conclusion about the value of death and the awareness of death.

Conclusion

Catholic culture has already proven to be a fruitful context for developing external HBEs, but perspectives on internal HBEs are neither clear-cut nor easy to establish. A prerequisite of progress is to understand what is meant by flourishing in a Catholic worldview, the central principle of which is second-person relatedness to God, culminating in divine friendship. On this account, flourishing as a person relating to God and other persons has a rather complex relationship with flourishing in mind and body, the main focus for proponents of HBEs.

[36] Stanford University, "Text of Steve Jobs' Commencement Address (2005)," Stanford News, June 14, 2005, https://news.stanford.edu/2005/06/14/jobs-061505/.

What can be said is that it is unlikely that internal HBEs will ever offer a short cut to virtue, and even speculative work on HBEs presents some moral hazard insofar as it can foster pride. Moreover, as has already happened with smartphones, there is also a risk that some kinds of HBEs, especially if they are deeply addictive, may offer cognitive distractions that impede the sustained, thoughtful attention that is important for spiritual and moral growth. As for the conquest of biological death, one does not have to take a theological perspective to understand that such a development would cause immense problems for societies and will plausibly fail to make the deathless happy, leading to a state that may in practice prove unbearable.

Despite these considerable hazards, a general expansion of human powers by internal HBEs may nevertheless provide some eventual benefits for theologically-grounded flourishing. Such benefits would ultimately have to be assessed, however, relative to their ability to support second-person relatedness with God and other persons. Measures of success will include sustaining thoughtful attention and enhancing the capacity to receive experiences that can sanctify the mind, being wholesome in themselves and possible objects of prayerful and creative thought.[37]

[37] We thank Michael Burdett, Victoria Lorrimar, and Susan Frank Parsons for their helpful comments on a draft version of this article.