

Longing for Transcendence: Cyborgs and Trans- and Posthumans

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Abstract

Technology is transforming the human body into a cyborg by making it a part of cyber networks. Transhumanists and posthumanists argue that technology will enable humans to overcome bodily limitation by reaching a technological immortality. The authors discuss recent literature on anthropological approaches and ethical implications about this technological promise. They suggest that the “Body of Christ” metaphor—by emphasizing embodiment, sacramentality, difference, and solidarity—can guide our reflection on corporeality and on the human because this metaphor refers not just to the human body of Jesus Christ but also to the Eucharist, the church, and the eschatological Body of Christ in creation.

Keywords

anthropology, Body of Christ, cyborg, ethics, Internet, posthuman, sacramentality, solidarity, technology and body, transhuman

The 2014 Hollywood movie *Transcendence* had what was needed to succeed: a very popular and highly paid star (Johnny Depp), a good supporting cast, a winning director, and a captivating plot. The ticket office’s global flop, however, suggested that technological ways of transcending ourselves are not so appealing—at least to moviegoers.

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In *Transcendence*, Dr. Will Caster (Depp) is a world-renowned expert in artificial intelligence. Well advanced in producing a computer that combines every bit of information with a full array of human emotions, he is targeted by antitechnology extremists. In a desperate attempt before his death, his wife, with the help of a friend and colleague researcher, successfully uploads his mind into the experimental computer. The now-transcendent Will begins to acquire a never-ending thirst for knowledge and energy. Will's technological power also expands exponentially, becoming unlimited and unstoppable: the blind can see, the lame can walk, all diseases are healed, and human strength becomes inestimable. But the changes come at a price: the healed are technological hybrids and part of Will's computer network. Their will and ability to make decisions can be overridden by Dr. Casper's will. The drama ends with the once-considered "bad guys"—the extremist antitechnology group—becoming the "good guys" who save the planet from the inexorable and inhuman power of the transcendent Will.

In the movie, the concept of transcendence and the biblical healing imagery evoke their profoundly theological matrix. But the divine and the human are both replaced by technology's power and control. Technology's promise of transcendence, by technologically resurrecting mind and body, as well as radically benefiting human life on the planet, hides the computer's uncontrollable will to power that points toward the destruction of human existence on earth.

In what follows we discuss the increasing ubiquity of cybertechnologies and trans- and posthumanism by attending to interrelated anthropological-ethical concerns that have been addressed theologically.¹

Cyber-Anthropologies

Cybertechnology refers to various devices employed for computing and communications: hand-held devices, personal computers, mainframe computers that connect multiple users, and the Internet itself. The Internet and the ongoing microelectronic revolution—with increasingly smaller devices—have brought about radical changes in our relation with machines and communication technologies. Ingrid Richardson, who studied the bodily incorporation of mobile phones,² attributes people's more intense relationship with cell phones to their pervasive presence near the body as well as to their greater somatic involvement through hearing, vision, and touch. Mobile phones not only enhance but also alter the user's sense of being. They connect us with people far away wherever we and they are. When employed as a navigational device,

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1. In his 2011 essay on cybertheology, Antonio Spadaro, S.J., limiting his attention to systematics and biblical theology, focuses on the many ways the electronic media and the Internet could influence theological reflection. While Spadaro privileges the Internet, our essay deals with cybertechnology in a broader sense and discusses ethical-anthropological issues. Antonio Spadaro, "Verso una 'cyberteologia'? L'intelligenza della fede nel tempo della rete," *La Civiltà Cattolica* I.3853 (2011) 15–27.
 2. Ingrid Richardson, "Pocket Technospaces: The Bodily Incorporation of Mobile New Media," *Continuum: Journal of Media & Cultural Studies* 21 (2007) 205–15.

they provide the user with a “God’s eye view” of the digital map.³ Because digital media has increasingly become part of the body, we first elaborate on anthropologies focused on the body–new media connection and their ethical implications.

The Internet and the Virtual Being as Bodiless

In the Silicon Valley of the early 1990s, the merging of spirituality with new media technologies stressed that salvation occurred by departing from the body (or the “meat”) and joining the “immaterial sphere” of cyberspace.⁴ Referred to as cybergnosis, the virtual space was perceived as a sacred sphere where people, transformed into virtual beings, can escape the mortal body and triumph over alienation.⁵

Gnostic New Agers see the person as basically spiritual and the Internet as a tool to discover truth within the inner sanctum of the self, to turn the world into a paradise, and to connect all reality. The Internet is like a magical medium that assists the spiritual transformation of humanity.⁶ Dorien Zandbergen studied New Edge, a cybergnostic community, whose goal was to transform knowledge through information technology to “escape from physical limitations,” whether through “re-embodiment” or by fleeing “from the bounds of the earth,” sometimes by creating an alternative community and culture.⁷

While the Internet can indeed be a tool for personal and social transformation, it is very far from being a space for utopia. The virtual world reflects too well the dominating social structures present in society. Second Life, which exemplifies real virtuality, is one of the most successful role-playing games, in which users interact with one another through their avatars. Its residents socialize, build, and market virtual property as well as trade services. According to Manuel Castells, one of foremost theorists of cyberculture, what is striking is the users’ “inability to create Utopia, even in the absence of institutional or spatial limitations.”⁸ Aggression and rape are among the many pitfalls replicated in Second Life. The emancipatory dimension of the Internet as a bodiless sphere also celebrates the machines instead of their users and betrays a romantic view of the nonhuman.⁹ For Jean Baudrillard, the danger is to idealize

3. Another example is the development of ambient intelligence, which will allow computing everywhere through microprocessors inserted into clothes, vehicles, furniture; pervasive communication via stronger wireless networking technology; and the use of “smart” objects that could respond to individual needs more naturally. See Vincent Miller, *Understanding Digital Culture* (London: Sage, 2011).

4. Dorien Zandbergen, *New Edge: Technology and Spirituality in the San Francisco Bay Area* (Leiden: F&N Boekservice, 2011) 7.

5. Stef Aupers and Dick Houtman, “‘Reality Sucks’: On Alienation and Cybergnosis,” *Concilium* 1 (2005) 81–89.

6. Douglas E. Cowan, *Cyberhenge: Modern Pagans on the Internet* (New York: Routledge, 2005) 58–59.

7. Zandbergen, *New Edge* 86.

8. Manuel Castells, *Communication Power* (New York: Oxford University, 2009) 69.

9. Klaus Wieglerling, “The Superfluous Body: Utopias of Information and Communication Technology,” *Concilium* 2 (2002) 19–28, at 26.

Internet simulations and prefer them to the more messy and complex actual life, thereby functioning as a distraction or an alibi.¹⁰

Human as Cyborg

An alternative anthropological approach, which was also initially developed in California's information technological mecca, conceives the person as a "cyborg" (short for cybernetic organism, a hybrid of machine and organism).¹¹ Human beings in whom devices have been implanted to recuperate loss of function or to enhance bodily functionality and/or performance (e.g., strength and endurance of artificial limbs in future supersoldiers)¹² have been called "cyborgs."

Don Ihde, a philosopher of technology, highlights two aspects of human interaction with technology that are relevant in thinking of the human as cyborg.¹³ The first is embodiment. When humans use tools, the tool is no longer an object used but becomes incorporated into the body and the person's identity. The second aspect is hermeneutical: the tool becomes the lens through which the person experiences the world. Hence, in perceiving the human as cyborg, technology becomes an extension of the self.¹⁴ In Haraway's words, "The machine is us, our processes, an aspect of our embodiment."¹⁵

For Haraway, the cyborg, as a hybrid creature, can support transgressing the boundary between male and female.¹⁶ Female embodiment has traditionally been identified with the organic and with mothering skills. As cyborgs, however,

10. Jean Baudrillard, *The Gulf War Did Not Exist* (Sydney: Power, 1995).

11. The term was coined by Manfred Clynes and Nathan Kline and first appeared in "Cyborgs and Space," *Astronautics* (1960) 26–27, 74–75. They advocated for technologically transformed human bodies to explore outer space. Donna Haraway, a pioneer in cyborg theory, used the term by pointing to the many ways technology has been employed to fix and alter the human body: Donna J. Haraway, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century," in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991) 149–81.

12. See James F. Keenan, "Enhancing Prosthetics for Soldiers Returning from Combat with Disabilities: Theological Ethical Considerations on the War Industry's Impact on Bioethics," *ET-Studies: Journal of the European Society for Catholic Theology* 4.1 (2013) 69–88. Keenan shows how prosthetics research of the US Defense Advanced Research Projects Agency (DARPA) is dual purpose: while maimed US veterans returning from Iraq and Afghanistan greatly benefit from this advanced technology, progress is made in developing and testing technology aimed at creating future "supersoldiers."

13. Don Ihde, *Technology and the Lifeworld: From Garden to Earth* (Bloomington: Indiana University, 1990).

14. See Judith Schossböck and Günther Friesinger, *The Next Cyborg* (Wien: Mono/ Monochrom, 2014); Dierk Spreen, "Der Cyborg: Diskurse zwischen Körper und Technik," in *Die Figur Des Dritten: Ein kulturwissenschaftliches Paradigma*, ed. Eva Esslinger et al. (Berlin: Suhrkamp, 2010) 166–79.

15. Haraway, "A Cyborg Manifesto" 180.

16. *Ibid.* 149–81.

women can use new communications media to recreate themselves and go beyond previous constraints imposed on them by society.¹⁷ They should not feel threatened by machines; rather, they should appropriate and incorporate them.¹⁸ Haraway hoped that the cyborg—both a material reality and a product of the imagination—could contribute to the blurring of “borders” of a racist male-dominated capitalist order.¹⁹

Haraway, however, does not see the cyborg as intrinsically liberating.²⁰ She speaks of “scary new networks” or “informatics of domination” that employ the latest scientific methods and technologies. In cyborg society, forms of domination, such as classism, sexism, racism, and ethnocentrism, are not necessarily dissolved but are instead rearticulated into new forms.²¹ Excluded from cyberspace are the “nobodies” or those in urban and rural regions who are on the other side of the “digital divide,”²² and often

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17. Ibid. 164. See Marisa Belausteguigoitia, “On Line, Off Line, and In Line: The Zapatista Rebellion and the Uses of Technology by Indian Women,” in *Native on the Net: Indigenous and Diasporic Peoples in the Virtual Age*, ed. Kyra Landzelius (New York: Routledge, 2006) 97–111. The book contains essays on cyberactivism on the Net of indigenous peoples from Ghana, Burundi, Palestine, and Iraq. In *Feminist Cyberethics in Asia*, ed. Agnes M. Brazal and Kochurani Abraham (New York: Palgrave MacMillan, 2014); see: Virginia Saldanha, “Digital Revolution—Creating a Flat World for Indian Women?” 47–60; Kochurani Abraham, “Women in Cyberspace: A New Key to Emancipatory Politics of Location” 61–76; Gemma T. Cruz, “For Better or for Worse? Migrant Women Workers and ICTs” 95–118; Sharon A. Bong, “Sacralizing Time and Space through an Epistemology of Peace: A Feminist Reading of Disciple SFX of Malaysia” 119–40.
 18. Haraway, “A Cyborg Manifesto” 180. Veronika Schlör speaks of cyberfeminist counter-movements on the Internet, composed of cybergirls who display their technological skills (not usually associated with girls and women) in order to protest, network, and empower women. Veronika Schlör, “Cyborgs: Feminist Approaches to the Cyberworld,” *Concilium* 1 (2005) 60–67. See also Radhika Gajjala and Yeon Ju Oh, eds., *Cyberfeminism 2.0* (New York: Peter Lang, 2012).
 19. Haraway, “A Cyborg Manifesto” 150. See Belinda du Plooy, “The Cyborg in Africa: Of Any Use for African Feminisms?,” *Agenda: Empowering Women for Gender Equity* 19.65 (2005) 130–36.
 20. While the cyborg as a hybrid of human and technology is not necessarily inert, it is on the human that Haraway imputes intentionality and ethical responsibility. Donna J. Haraway, *How Like a Leaf: An Interview with Thyrza Nichols Goodeve* (New York: Routledge, 2000) 134. For a bibliography on the cyborg as reinforcing traditional power structures, see Sarah Cohen Shabot, “Grotesque Bodies: A Response to Disembodied Cyborgs,” *Journal of Gender Studies* 15.3 (2006) 223–35. See also Danielle Devos, “Rereading Cyborg (?) Women: The Visual Rhetoric of Images of Cyborg (and Cyber) Bodies on the World Wide Web,” *CyberPsychology and Behavior* 3 (2000) 835–45.
 21. See Shirley Soh, “Reading the Cyborg in Singapore: Technology, Gender, and Empowerment,” in *Feminist Cyberethics in Asia* 35–46, at 38.
 22. “Digital divide” refers to people’s unequal ability to maximize the use of technology to better their lives because of economic, technical, or socio-cultural status that limits people’s access to and usage of computer-mediated communication.

bypassed by information and communication technologies, which Castells refers to as the “fourth world.”²³

Furthermore, masculinist interests and stereotypes create a distinct digital gender divide. In the developing world, women are nearly 25 percent less likely to use the Internet than men.²⁴ However, future Internet services and technology will nonetheless target populations with already high-speed Internet connection, ignoring those who neither produce nor consume. Paradoxically, cyber-exclusion will become a structural feature of the global capitalist network society where networks aim for market dominance.²⁵

Pornography, pedophilia, hate sites, and other forms of commodified violence likewise morph online. Women’s bodies are produced, reproduced, and recolonized in virtual space.²⁶ White supremacist groups increasingly occupy the Internet to disseminate their advocacy for supremacy and to recruit supporters,²⁷ even given the initial expectation of a future with less racism because of the possibility of communicating anonymously beyond racial divides.

The Spirit of and in the Network and the Cyborg

Other authors focus on the Internet as cyborg because of the unity it creates between humans and things. They rely on the metaphor of the “spirit” to describe this

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23. Manuel Castells, *End of Millennium*, 2nd ed. (Oxford: Blackwell, 2000) 68–168. See also Radhika Gajjala, ed. *Cyberculture and the Subaltern: Weavings of the Virtual and Real* (Lanham, MD: Lexington, 2013). According to the 2013 World Internet Usage and Population Statistics study, only 39 percent of the population of the world is wired. Access to the Internet in North America is almost four times that of Africa. See “Internet World Stats: Usage and Population Statistics,” <http://www.Internetworldstats.com/stats.htm>. All URLs cited herein were accessed October 25, 2014.
 24. See “Women and the Web: Bridging the Internet Gap and Creating New Global Opportunities in Low and Middle-income Countries” 10, <http://www.intel.ph>.
 25. See Castells, *Communication Power* 25–26.
 26. See Jeane C. Peracullo, “Resistance/Collusion with Masculinist-Capitalist Fantasies? Japanese and Filipino Women in the Cyber-Terrain,” in *Feminist Cyberethics in Asia* 15–34; Jeane C. Peracullo, “Phenomenological Reflections on Power and Vulnerability in Cyber Space by Filipino Youth: Implications to Church in Dialogue with Digital Culture,” *Asian Horizons: Dharmaram Journal of Theology* 7 (2013) 771–85; Ceylan Ertung, “Bodies That (Don’t) Matter: Feminist Cyberpunk and Transgressions of Bodily Boundaries,” *Edebiyat Fakültesi Dergisi* 28.2 (2011) 77–93. On the replication of gender stereotypes and violence, even in purely text-based channels, which some assert is a gender-neutral medium of exchange, see Anne Balsamo, “Forms of Technological Embodiment,” in *The Information Society Reader*, ed. Frank Webster (New York: Routledge, 2004) 237–53, at 248.
 27. See Colin Beckles, “Black Struggle in Cyberspace: Cyber-Segregation and Cyber-Nazis,” *Western Journal of Black Studies* 21 (1997) 14–16; and Jessie Daniels, *Cyber Racism: White Supremacy Online and the New Attack on Civil Rights* (Lanham, MD: Rowman & Littlefield, 2009).

cyber-network of people and things. Mark Coeckelbergh, for example, defines this spirit in three ways.²⁸ First, it is the spirit *of* the Internet as a whole, as a network of people and things. As soul or spirit arises from the brain with its intricate connections, in the same way, a spirit can emerge from the World Wide Web considered as an enormous mind. Second, the spirit can emerge *in* particular networks of people and things.²⁹ Third, there is the spirit *of* individual things and individual humans.

This network of humans and things, Coeckelbergh points out, can likewise be conceived as a cyborg, which is already a unity of the human and nonhuman, matter and spirit. A dimension highlighted in this concept of human as cyborg but not mentioned in the previous model is that humans and things are separable and can *reconnect* as cyborg without the loss of individual distinctness.

The metaphor of a spirit emerging in the network resembles some East Asian animism. In ancient Japan, many tools were given the owner's name and the date of first use to mark the time when the tool appropriated the owner's spirit. The spirits of tools were expected to live harmoniously with humans. Naho Kitano argues that today's successful development of robotics in Japan, which is now hailed as "Robot Kingdom," is partly founded on animism.³⁰ Furthermore, the Japanese ethics called "Rinri," which means a reasonable way toward a harmonious relationship, promotes robotics. As the robot closely serves the owner everyday for many years, its spirit harmonizes with that of the owner. This identification of robots with their owners lasts only while the owners use them.³¹

28. Mark Coeckelbergh, "The Spirit in the Network: Models for Spirituality in a Technological Culture," *Zygon* 45 (2010) 957–78, at 971–74.

29. This model draws from Bruno Latour's actor network theory, which conceives the social world as a network of human and nonhuman "actants" that are linked and do things together. A simple example of a network of human and nonhuman actants is the car, which has both a driver and multiple nonhuman actants as electronic and mechanical components. Bruno Latour, *We Have Never Been Modern* (Cambridge, MA: Harvard University, 1993); Latour, *Reassembling the Social: An Introduction to Actor–Network Theory* (New York: Oxford University, 2005). Agency here is situated neither in humans nor nonhumans but in their relation in the network. This approach has been criticized as imputing intentionality on nonhumans. See Langdon Winner, "Upon Opening the Black Box and Finding It Empty: Social Constructivism and the Philosophy of Technology," *Science, Technology, & Human Values* 18 (1993) 362–78. Scholars of actor–network theory counter that agency is not equivalent to intentionality, which actor–network theorists ascribe only to humans.

30. Naho Kitano, "'Rinri': An Incitement towards the Existence of Robots in Japanese Society," *International Review of Information Ethics* 6.12 (2006) 79–82. See also Robert M. Geraci, "Spiritual Robots: Religion and Our Scientific View of the Natural World," *Theology and Science* 4 (2006) 229–46, at 235–40.

31. Coeckelbergh notes that in the shift from a religious to a scientific understanding of the world, the Western industrial capitalist societies experienced the disenchantment of nature. Instead of resorting to a reenchantment of nature, the West, he contends, possesses other resources such as the creationism metaphor of parent–child in humans' relationship with technology and the "Spirit of and in the network and the cyborg" ("The Spirit in the Network" 968–71).

Transhumanism and Posthumanism

Together with the rapidly increasing computing capabilities and new developing technologies (e.g., nanotechnologies), the Internet will also be part of “the next stage of human evolution.”³² For transhumanists, technology needs to be used to transform the human body and human nature. Technological developments will help transition toward a new humanism,³³ “to transcend the limitations of human life”³⁴ and to become a *post*-human civilization. Posthumanism is “the belief that, through a union of human technical ability and human will, human beings will progress toward (or be the progenitors of) the next stage of human evolution, resulting in the posthuman.”³⁵ Hence, posthumanism³⁶ is the ultimate goal for both single individuals and society as a whole.³⁷ Singularity will make possible the transition from transhuman to posthuman.

In his 1958 posthumous “The Computer and the Brain,” mathematician John von Neumann compared computers’ calculating capacity to the human brain’s computing ability, and estimated the amount of computing speed needed to match the brain’s abilities. For his colleague Stanislaw Ulam, it was von Neumann who advanced the hypothesis of singularity, of “the ever accelerating progress of technology”³⁸ that will lead to a level of artificial intelligence able to exceed human intellectual capacity and control.

Because of computers’ rapidly increasing performance, singularity is becoming more than mathematical speculation. It is finding enthusiastic supporters well beyond Hollywood screenwriters: from the classrooms of the Singularity University in California’s NASA Research Park launched in 2009 by the engineer/inventor Ray Kurzweil, to the research strategies of the successful and expanding American multinational corporation Google.³⁹

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32. Michael W. DeLashmutt, “A Better Life through Information Technology? The Theological Eschatology of Posthuman Speculative Science,” *Zygon* 41 (2006) 267–87, at 273.
 33. See Matthew Eppinette, “Human 2.0: Transhumanism as a Cultural Trend,” in *Everyday Theology: How to Read Cultural Texts and Interpret Trends*, ed. Kevin J. Vanhooser et al. (Grand Rapids, MI: Baker Academic, 2007) 191–207, at 194. See also Heidi A. Campbell, “Postcyborg Ethics: A New Way to Speak of Technology,” *Explorations in Media Ecology* 5.4 (2006) 279–96, at 65.
 34. Robert M. Geraci, “There and Back Again: Transhumanist Evangelism in Science Fiction and Popular Science,” *Implicit Religion* 14.2 (2011) 141–72, at 142.
 35. DeLashmutt, “A Better Life” 273.
 36. “The term ‘posthumanism’ was first coined in the Josiah Macy Foundation conferences on cybernetics (1946–1953) in New York” (Hava Tirosh-Samuels, “Transhumanism as a Secularist Faith,” *Zygon* 47 [2012] 710–34, at 711).
 37. Because “transhuman” refers solely to a transitory stage of human evolution that will culminate in “the posthuman,” the two terms are often used as synonyms.
 38. Stanislaw Ulam, “John Von Neumann 1903–1957,” *Bulletin of the American Mathematical Society* 64.3 (1958) 1–49, at 5; cited (modified) by Ray Kurzweil, “Foreword to the Third Edition,” in John Von Neumann, *The Computer and the Brain* (New Haven, CT: Yale University, 2012) xi–xxxi, at xxx.
 39. See Carole Cadwalladr, “Are the Robots About to Rise? Google’s New Director of Engineering Thinks So . . .,” *Observer*, February 14, 2014. Kurzweil is Google’s new director of engineering.

The trust in the possibilities of science to transform humanity and human society can be traced back to the late 19th- and early 20th-century utopians as well as to the 1930s futurists. Recent decades have seen this trust further consolidated.⁴⁰ Since the 1980s, the Extropy Institute has been a venue for transhumanist ideas.⁴¹ In 1998, the World Transhumanist Association (WTA) was founded by two British philosophers, Nick Bostrom and David Pearce, to coordinate transhumanist groups, spread their ideas, and make transhumanism an academic discipline. The following year, the WTA started publishing its own scholarly peer-reviewed *Journal of Evolution and Technology*. Currently, the WTA has been replaced by Humanity+, an organization that gathers the leaders of transhumanism.⁴² Among the key figures are roboticist Hans Moravec, mathematician Frank Tipler, and Ray Kurzweil.⁴³

Posthumanists believe that “there is no stable, fixed human essence (i.e., ‘human nature’), that the human species is no more than a ‘work in progress,’ and that humans can redesign themselves in order to overcome biological limitations.”⁴⁴ They “also welcome a future in which the boundaries between humans and machines or humans and animals will be blurred and cherish cyborgization.”⁴⁵ Furthermore, they “entertain the possibility of delinking sex and reproduction and seek the self-destruction of the embodied human. As a result, [they] envision *the eventual obsolescence of the human species*.”⁴⁶ Finally, technologies will help “eliminate aging and . . . greatly enhance human intellectual, physical, and psychological capacities.”⁴⁷ Life will be radically extended, and death will be postponed, while the genetic makeup of future generations will be redesigned as well. Transhumanists encourage taking any necessary step for self-enhancement by relying on any available technology.

For transhumanists, from whom Haraway dissociates herself,⁴⁸ the cyborg is an expression of a stage of the transformation of the human condition. The cyborg has

40. See Tom Koch, “Enhancing Who? Enhancing What? Ethics, Bioethics, and Transhumanism,” *Journal of Medicine and Philosophy* 35 (2010) 685–99, at 687. For a historical analysis of futurist ideas, figures, and groups in the recent decades, see James J. Hughes, “The Politics of Transhumanism and the Techno-Millennial Imagination, 1626–2030,” *Zygon* 47 (2012) 757–76, at 762–63. In his *New Atlantis* (1626), Francis Bacon described what, for Hughes, is a “proto-transhumanist utopia without slavery or poverty, governed by a religiously tolerant scientific elite and focusing on research with the goal of ‘effecting all things possible’” (ibid. 759).

41. See <http://www.extropy.org>.

42. See “Transhumanist FAQ 3.0,” <http://humanityplus.org>.

43. For a descriptive and critical portrayal of these three relevant figures, see DeLashmutt, “A Better Life” 274–84.

44. Tirosh-Samuelson, “Transhumanism” 715.

45. Ibid.

46. Ibid., emphasis original.

47. Ibid. 716.

48. Haraway dislikes the transhumanist/posthumanist fascination with techno-enhancement by any means, to do away with the body, pain, and suffering. Nicholas Gane, “When We Have Never Been Human: What Is to Be Done? Interview with Donna Haraway,” *Theory, Culture, and Society* 23 (2006) 135–58, at 146, 151. Haraway does not flee from suffering

moved from a science fiction icon to what will be the emerging posthuman as the next stage of human evolution. Human beings are already cyborgs and will become more and more so because of the continuing and increasing appropriation and incorporation of technologies into the human body and life.

Transhumanists are not a large group—about 5,000 people worldwide—but the Internet gives their ideas virtual ubiquity.⁴⁹ Moreover, “Transhumanism is experiencing solid, if not rapid, growth in membership and the number of believing communities.”⁵⁰ Its growing cultural popularity is bolstered by science fiction, video games,⁵¹ and movies like *Transcendence*.

Three assumptions call for ethical assessment. First, transhumanists presuppose that “technology is inherently good and that it holds the solution to all of our problems, and the resulting belief that whatever can be done must be done.”⁵² A select number of sciences that assure us of undisputable certainty (e.g., physics, chemistry, biology, logic, and mathematics) reveal reality as it is and how it functions, while allowing us to modify and to shape it.

Second, technology affords us the freedom of manipulating the human body⁵³ by aiming at an infinite malleability and fluidity.⁵⁴ Our bodies become software. As Kurzweil put it,

Up until now, our mortality was tied to the longevity of our hardware. . . . As we cross the divide to instantiate ourselves into our computational technology, our identity will be based on our evolving mind file. *We will be software, not hardware.* . . . As software, our mortality will no longer be dependent on the survival of the computing circuitry. . . . Our immortality will be a matter of being sufficiently careful to make frequent backups.⁵⁵

bodies, but embraces the flesh and its “vulnerability and pain.” Donna J. Haraway, *How Like a Leaf: An Interview with Thyra Nichols Goodeve* (New York: Routledge, 2000) 86. Moreover, though she uses the term “post-gender” in “A Cyborg Manifesto,” she does not take its meaning in a “utopian beyond-masculine-and-feminine-sense” (Donna J. Haraway, *The Haraway Reader* [New York: Routledge, 2004] 329).

49. See Tirosh-Samuelson, “Transhumanism” 717.

50. Robert M. Geraci, “The Popular Appeal of Apocalyptic AI,” *Zygon* 45 (2010) 1003–20, at 1010.

51. See Tirosh-Samuelson, “Transhumanism” 714; Geraci, “There and Back Again” 166; and Robert M. Geraci, “Video Games and the Transhuman Inclination,” *Zygon* 47 (2012) 735–56, at 747, 751.

52. Eppinette, “Human 2.0” 204–5.

53. See Heather G. Bradshaw and Rudd ter Meulen, “A Transhumanist Fault Line around Disability: Morphological Freedom and the Obligation to Enhance,” *Journal of Medicine and Philosophy* 35 (2010) 670–84, at 671.

54. Alexander Darius Ornella, “Posthuman Pleasures: Transcending the Human–Machine Boundary,” *Theology & Sexuality* 15 (2009) 311–28, at 323.

55. Ray Kurzweil, *The Age of Spiritual Machines: When Computers Exceed Human Intelligence* (New York: Penguin, 1999) 129, emphasis original; cited in Noreen Herzfeld, “Terminator or Super Mario: Human/Computer Hybrids, Actual and Virtual,” *Dialog: A Journal of Theology* 44 (2005) 347–53, at 350.

Hence, for him, future humanity will be made of “software-based humans.”

Ultimately software-based humans, albeit vastly extended beyond the severe limitations of humans as we know them today, will live out on the web, projecting bodies whenever they need or want them, including virtual bodies in diverse realms of virtual reality, holographically projected bodies and physical bodies comprised of nanobot swarms, and other forms of nanotechnology.⁵⁶

According to Kurzweil, this evolution is possible because of exponential and accelerating technological progress.⁵⁷ Because he relies on “Moore’s Law,”⁵⁸ Kurzweil anticipates that in 2050 “accelerating innovation in genetics, robotics, and telecommunications will make possible technologies such as nanorobotic brain–machine interfaces . . . radical longevity, uploading of consciousness, and a cure for social problems like hunger and climate change.”⁵⁹

Third, a longing for a transcendent immortality⁶⁰ and achieving it by making humans software through computer circuitry indicate that “whatever can be done not only should be done, but in fact must be done.”⁶¹ There are no boundaries to one’s personal autonomy, to one’s ability and right to plan one’s life in light of one’s utility.⁶² Everyone can decide which technologies to apply.⁶³

56. Ray Kurzweil, “The Evolution of Mind in the Twenty-First Century,” in *Are We Spiritual Machines? Ray Kurzweil vs. the Critics of Strong AI*, ed. George Gilder and Jay Richards (Seattle, WA: Discovery Institute, 2002) 12–55, at 51–52; cited in Thomas A. Shannon, “The Human Person: Franciscan Perspectives on Contemporary Discussions,” in *Moral Action in a Complex World: Franciscan Perspectives*, ed. Daria Mitchell (St. Bonaventure, NY: Franciscan Institute, St. Bonaventure University, 2008) 29–65, at 37.

57. See Ray Kurzweil, “Progress Accelerates Exponentially,” in *The Way We Will Be 50 Years from Today: 60 of the World’s Greatest Minds Share Their Visions of the Next Half Century*, ed. Mike Wallace (Nashville: Thomas Nelson, 2008) 33–38. See also Ronald Cole-Turner, ed., *Transhumanism and Transcendence: Christian Hope in an Age of Technological Enhancement* (Washington: Georgetown University, 2011) 789.

58. In computer science, Moore’s Law states that the number of transistors on integrated circuits (i.e., on computer chips) doubles every 18 months. See Ray Kurzweil, *The Singularity Is Near: When Humans Transcend Biology* (New York: Penguin, 2005) 56–72.

59. Hughes, “The Politics of Transhumanism” 763–64.

60. See Shannon, “The Human Person” 44.

61. Eppinette, “Human 2.0” 198.

62. The transhumanist movement “seeks to develop the self only, to seek self-perfection as an end in itself, and to free oneself from the shackles of finite, material creation” (Shannon, “The Human Person” 51–52).

63. Even in civil society, transhumanist ideas are influencing decisions concerning research investments and funding. See William Sims Bainbridge and Mihail C. Roco, *Managing Nano-Bio-Info-Cogno Innovations: Converging Technologies in Society* (Dordrecht: Springer, 2006); Mihail C. Roco and William Sims Bainbridge, *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology, and Cognitive Science* (Boston: Kluwer Academic, 2003); and United States Congress, Committee on Science, *The Societal Implications of Nanotechnology*:

This “ethics of control” and of technological manipulation is not limited to one’s life; it includes death. Everyone should have the right to choose how to die. There is no accountability to anyone other than one’s self; the pursuit of happiness is individual.⁶⁴ This posture is well summed up by Michael DeLashmutt’s observation:

Posthuman speculative science reflects an implied reductionistic philosophical anthropology. The complexity of the human subject—one’s spirituality, materiality, and sociality—is perceived as being reducible to a collection of patterns that can be decoded and reembodyed in whatever substrate a given future technology provides.⁶⁵

Artifacts

The posthumanist anthropological understanding of the human body and mind concerns bioethicists. The ethical problem lies neither in the current insertion of technological artifacts (e.g., pacemakers, valves, eye and cochlear implants, prosthetic hips and knees), nor in more embedded technology that will be available in the near future (e.g., the insulin pump and the artificial heart). These technological artifacts become integrated into one’s body; with the appropriate psychological accompaniment and necessary training, the person incorporates the technology. One’s self might be neither threatened nor diminished by these devices.

True, the self is malleable and adaptable—as transhumanists rightly affirm—but only up to a point. Human beings are capable of experiencing technology as an aid to the self, to one’s identity and being, but there is neither confusion nor replacement; technology is merely part of the body and accepted as such. In these situations, technological tools are perceived as neither challenging nor compromising one’s identity. As DeLashmutt puts it, “Technologies are tools that extend human agency and will while remaining ontologically differentiated from human being.”⁶⁶

Technological incorporation can also be resisted and rejected by both individuals and communities, as the reception of the movie *Transcendence* shows. Hence, a critical hermeneutic and even a possible strategy of resistance might be identified. Not everyone is ready to welcome embedded technology, not even in the form of an artificial hip or a prosthetic arm; some might perceive technology as a threat to their identity. Technological devices might be feared and experienced as a menace. The presumption is that tech tools will affect, modify, and potentially harm the self in

Hearing before the Committee on Science, House of Representatives, One Hundred Eighth Congress, First Session, April 9, 2003 (Washington: U.S. G.P.O., 2003) 17–48.

64. “To live a life of true happiness is, therefore, to pursue various technologies and work toward becoming posthuman” (Eppinette, “Human 2.0” 200).

65. DeLashmutt, “A Better Life” 268.

66. *Ibid.* 269. See also Franck Damour, “Le cyborg est-il notre avenir?,” *Études* 411 (2009) 475–84; Raúl Cuadros Contreras, “Ontología y epistemología cyborg: Representaciones emergentes del vínculo orgánico entre el hombre y la naturaleza,” *CTS: Revista iberoamericana de ciencia, tecnología y sociedad* 7.19 (2011) 131–41.

irretrievable ways. The expected gains (e.g., reduced pain, acquired mobility, and independence) do not seem to match up with what is felt as a Faustian bargain; one's being is at stake, and a heightened protective stance ensues.

Enhancement

Frequently, in bioethical discourse, discussions on technological incorporation have been formulated in terms of the distinction between therapy and enhancement. As this dyad goes, at least in most cases,⁶⁷ therapies should not raise ethical concerns, because they aim at healing and restoration of one's former capabilities. Enhancement, on the other hand, requires more careful discernment. Which type of enhancement is ethically acceptable? Which is ethically sound for enhancing one's height, muscular strength, or immune system? Can enhancement be medically indicated or even required? The ethical conversation on enhancement includes many relevant contributions, both philosophical⁶⁸ and theological.⁶⁹ Despite diversified and constructive contributions, a theoretical malaise and a practical difficulty characterize the distinction between therapy and enhancement, and, in particular, the concept of enhancement.

In dealing with transhumanism and posthumanism, however, the reflection concerning embodied technological artifacts and the effort of distinguishing between therapy and enhancement might not be so successful after all. Trans- and posthumanists neither linger on how people respond to embedded artifacts nor pay attention to sorting out what might be therapeutic or enhancing. They squarely and resolutely advocate for the

67. A comprehensive and careful analysis would study futile and overzealous treatments. Moreover, further reflection would evaluate treatments that benefit individuals by assessing how they fit with rationing and allocating limited healthcare resources.

68. See Allen E. Buchanan, *Beyond Humanity? The Ethics of Biomedical Enhancement* (New York: Oxford University, 2011); Bert Gordijn, *Medical Utopias: Ethical Reflections about Emerging Medical Technologies* (Dudley, MA: Peeters, 2006); Bert Gordijn and Ruth Chadwick, eds., *Medical Enhancement and Posthumanity*, vol. 2 (New York: Springer, 2008); Jürgen Habermas, *The Future of Human Nature* (Cambridge, UK: Polity, 2003); Michael J. Sandel, *The Case against Perfection: Ethics in the Age of Genetic Engineering* (Cambridge, MA: Belknap of Harvard University, 2007); and Julian Savulescu and Nick Bostrom, eds., *Human Enhancement* (New York: Oxford University, 2009).

69. See James F. Keenan, "'Whose Perfection Is It Anyway?': A Virtuous Consideration of Enhancement," *Christian Bioethics* 5 (1999) 104–20; James F. Keenan, "Perfecting Ourselves: On Christian Tradition and Enhancement," *Southern Medical Journal* 100.1 (2007) 96–97; Karen Peterson-Iyer, *Designer Children: Reconciling Genetic Technology, Feminism, and Christian Faith* (Cleveland: Pilgrim, 2004) 170–210; Lisa Sowle Cahill, *Theological Bioethics: Participation, Justice, and Change* (Washington: Georgetown University, 2005) 235–39; Cole-Turner, *Transhumanism and Transcendence: Christian Hope in an Age of Technological Enhancement*; Brent Waters, *From Human to Posthuman: Christian Theology and Technology in a Postmodern World* (Burlington, VT: Ashgate, 2006); and Brent Waters, *Christian Moral Theology in the Emerging Technoculture: From Posthuman Back to Human* (Burlington, VT: Ashgate, 2014).

manipulation of body and mind, arguing that this manipulation will allow us to reshape our body, to upload our mind in a computer, and even to overcome the mortal condition by aiming not only at a longer life expectancy, but also at a virtual cybernetic immortality. Hence, while for transhumanists there might be “a moral obligation to adopt enhancements,”⁷⁰ with Thomas Koch we can reply that “there is no doubt that adequate nutrition, proper housing, and universal medical care would do more to advance human potential than any microchip or program of genetic enhancement and selection.”⁷¹ In other words, what is morally compelling and urgent is the rediscovery of what it means to be human, and by promoting that in a humanly and socially centered healthcare practice that contributes to personal and social flourishing.⁷²

Furthermore, the social impact of the proposed gradual but radical transhuman transformation might be limited, affecting only those who will have access to the needed technological tools.⁷³ The whole vision of the person and of society that transhumanists advocate, however, raises ethical concerns. In particular, transhumanism proposes a technologically based understanding of human life, nature, and identity, as well as health and well-being, that appears to be grossly mechanistic and deterministic.

Moreover, transhumanists do not account for the social components and determinants of personal and social health. Hence, the transhumanist ability to address concrete and pressing bioethical challenges is utterly maimed. By being solidly rooted in a humanist tradition that critically welcomes technological developments, theological bioethics evaluates the expectations and goals of transhumanism by maintaining a robust social justice agenda that relies on virtues, values, principles, and rights for the sake of human and social just flourishing. Conceptually, methodologically, and pragmatically current trans- and posthumanist proposals seem unsuitable and ethically inappropriate for addressing any present and future health-related bioethical challenge.

The (Cyber-)Body of Christ

As David Cunningham aptly articulated it, for Christians the Body of Christ “should be the central image that gives meaning to the word ‘body.’”⁷⁴ The “Body of Christ”

70. Hughes, “The Politics of Transhumanism” 768.

71. Koch, “Enhancing Who?” 696–97.

72. In Roman Catholic theological ethics, the promotion of the common good expresses personal and social flourishing. See Lisa Sowle Cahill, “The Global Common Good in the Twenty-First Century,” in *Moral Theology: New Directions and Fundamental Issues: Festschrift for James P. Hanigan*, ed. James Keating (New York: Paulist, 2004) 233–51; and David Hollenbach, *The Common Good and Christian Ethics* (New York: Cambridge University, 2002).

73. Elaine Graham warns of how the transhumanist anthropological vision may “leave some people unrepresented altogether” (“‘Nietzsche Gets a Modem’: Transhumanism and the Theological Sublime,” *Literature and Theology* 16 [2002] 65–80, at 77).

74. David S. Cunningham, *These Three are One: The Practice of Trinitarian Theology* (Oxford: Blackwell, 1997) 300, cited by Robert Song, “Genetic Manipulation and the Body of Christ,” *Studies in Christian Ethics* 20 (2007) 399–420, at 415.

refers not just to the human body of Jesus Christ, but also to the Eucharist, to the church in a metaphorical way, and to the eschatological Body of Christ in creation. Hence, in the cyber era this image could guide our reflection on the human and on our corporeality, by focusing on embodiment, sacramentality, difference, and solidarity.

Embodiment

Christians should oppose conceptions of the body that separate it or dichotomize it from the whole self.⁷⁵ The image of the Body of Christ can be brought to bear on the notion that our virtual life and actions can be totally separated from our embodied selves, and this on two levels. First, the suffering body of Jesus on the cross challenges those who wish to disengage themselves from suffering by fleeing into the Internet or creating the posthuman. While Jesus' suffering and human suffering in themselves are not God's will,⁷⁶ God is present in the liberating struggles of the "nobodies," those in the "fourth world." Second, the resurrected Body of Christ is a symbol of God's vindication of Jesus' mindfulness of and solidarity with those who are excluded in the first-century social world of Palestine. In the risen Body of Christ, the marks of the wounds (Jn 20:24–26) further highlight Christ's continuing solidarity with suffering humanity.⁷⁷ In his apostolic exhortation *Evangelii gaudium*, Pope Francis warns against the image of the "purely spiritual Christ, without flesh and without the cross" in a digital age and encourages Christians "to run the risk of a face-to-face encounter with others, with their physical presence which challenges us, with their pain and their pleas."⁷⁸

Sacramentality

The cosmic Christ that spans the universe is the Christ that is present in all bodies,⁷⁹ humans, nonhumans, and therefore even cyborgs. The Eucharist as the Body of Christ highlights this transformation of material elements as embodiment of the sacred. Elaine Graham points out that "sacraments have the potential to sanctify the human

75. See James F. Keenan, "Roman Catholic Christianity—Embodiment and Relationality: Roman Catholic Concerns about Transhumanism," in *Transhumanism and the Body: The World Religions Speak*, ed. Calvin R. Mercer and Derek F. Maher (New York: Palgrave MacMillan, 2014) 155–71.

76. Edward Schillebeeckx, *Christ: The Experience of Jesus as Lord* (New York: Crossroad, 1993) 724–30.

77. Anthony Kelly, "The Body of Christ: Amen! The Expanding Incarnation," *Theological Studies* 71 (2010) 792–816, at 808.

78. Francis, *Evangelii gaudium* (2013) no. 88, http://w2.vatican.va/content/francesco/en/apost_exhortations/documents/papa-francesco_esortazione-ap_20131124_evangelii-gaudium.html.

79. Sallie McFague, *The Body of God: An Ecological Theology* (Minneapolis: Fortress, 1993) 183–85.

capacity for tool-making and world-building by identifying cultures and artifacts, and not simply ‘natural’ processes or phenomena as potential epiphanies of the sacred.”⁸⁰ The cyborg as a network of relations can be animated by the Spirit of Christ if peoples of good will promote inclusivity and peaceful relations among various social bodies.⁸¹

Moreover, the Christian communion is not only a partaking in the Body of Christ and a symbol of the unity of Christians, but maybe, as Coeckelbergh has noted, it is “taking another body as part of one’s own body.”⁸² Hence, sacramentality can allow the symbolization of the fusion of human and nonhuman technologies in the cyborg.

Difference and Solidarity

The “Body of Christ” image suggests the plurality and diversity of members and, at the same time, their unity in Christ. The praxis of Jesus, especially in his table fellowships, exemplifies this inclusivity of “others.” Similarly, in Galatians 3:27–28, Paul taught that differences in gender, ethnicity/race, and social class are to be reevaluated or relativized.⁸³ In the (cyber-)Body of Christ, these differences should be transcended toward a “solidarity of others” or the “mutual solidarity of those who are different.”⁸⁴ Cyborgs can use the new media to offer counterdiscourses so that the Internet does not continue to be a means where difference becomes a basis for inequality.

Within the New Testament, Paul’s metaphor of the Body of Christ denounces asymmetrical power relations in society. Paul criticizes the Corinthians’ celebration of the Lord’s Supper because it perpetrates the Roman class distinctions, with the “haves” going ahead with their own supper and getting drunk, while others go hungry. Such disordered celebrations shame those who have nothing as well as the church itself, because they fail to proclaim the gospel that transcends social divisions.⁸⁵

In this same spirit, solidarity in the (cyber-)Body of Christ entails addressing the problem of the digital divide. In “Ethics in Internet,” the Pontifical Council for Social Communications emphasized that it is both a matter of justice and the responsibility of public institutions to close the digital divide, including the associated gender divide, and to provide a free “resource of comprehensive information and services available

80. Elaine Graham, “In Whose Image: Representations of Technology and the ‘Ends’ of Humanity,” *Ecotheology* 11 (2006) 159–82, at 177.

81. See Agnes M. Brazal, “A Cyborg Spirituality and Its Theo-Anthropological Foundation,” in *Feminist Cyberethics in Asia* 199–220.

82. Coeckelbergh, “The Spirit in the Network” 974.

83. David Horrell, *Solidarity and Difference: A Contemporary Reading of Paul’s Ethics* (Bloomsbury: T. & T. Clark, 2005) 126.

84. See Anselm Kyongsuk Min, *The Solidarity of Others in a Divided World: A Postmodern Theology after Postmodernism* (Bloomsbury: T. & T. Clark, 2004).

85. See 1 Corinthians 11:21–22; and James M. Hamilton Jr., “The Lord’s Supper in Paul: An Identity-Forming Proclamation of the Gospel,” (2010), <http://jimhamilton.files.wordpress.com>.

without charge to all, and in a wide range of languages.”⁸⁶ The Pontifical Council echoed John Paul II’s earlier call to help people in the weaker social sectors not only to access information but also to participate in generating media content and in shaping effective social communication polices and structures.⁸⁷

Conclusion

New ways of imagining the body—from the cyborg to the trans- and posthuman—have arisen in the context of highly technological communities in touch with the latest developments in new communications media and biotechnologies, as well as from first-world discourses on the relationship between technology and spirituality.⁸⁸ These images have anthropological and ethical implications for both individuals and society. They express and articulate contemporary ways of longing for transcendence. Quite often they depend heavily on theological discourse, images, and symbols and demand earnest moral discernment.⁸⁹

Discernment can lead both to selected strong critical stances and to chosen constructive engagements. On the latter, the Christian metaphor of the Body of Christ is a biblical and theological resource that provides ways for adjudicating or contributing to enhancing cyber-conceptions of the body toward solidarity by avoiding cyber-exclusion. By emphasizing the importance of embodiment, this metaphor implies a rejection of cybergnostic anthropologies that would separate the body from the self or foster fleeing from suffering bodies. Sacramentality in both the cosmos and the Eucharist as expression of the Body of Christ allows us to identify possible instances of sacralization or animation by the Holy Spirit within the individual cyborg and cyborg society.

Lastly, difference and solidarity in the Body of Christ highlight not only the diversity of cyborgs but also their fundamental unity with the rest of humankind; both demand avoiding replication on the Internet of any social structure of domination. At the same time, embodied views of the Internet, such as Haraway’s cyborg as well as the spirit of and in the network and the cyborg, point to our symbiotic link to new media. The human longing for transcendence in today’s cyberworld might not need to

86. Pontifical Council for Social Communications, “Ethics in Internet” (2002), no. 10, http://www.vatican.va/roman_curia/pontifical_councils/pccs/documents/rc_pc_pccs_doc_20020228_ethics-internet_en.html.

87. See John Paul II, “Internet: A New Forum for Proclaiming the Gospel” (2002), http://www.vatican.va/holy_father/john_paul_ii/messages/communications/documents/hf_jp-ii_mes_20020122_world-communications-day_en.html; and Benedict XVI, “New Technologies, New Relationships: Promoting a Culture of Respect, Dialogue and Friendship” (2009), http://www.vatican.va/holy_father/benedict_xvi/messages/communications/documents/hf_ben-xvi_mes_20090124_43rd-world-communications-day_en.html.

88. See Mercer and Maher, *Transhumanism and the Body*.

89. See Paolo Benanti, *The Cyborg: Corpo e corporeità nell’epoca del post-umano: Prospettive antropologiche e riflessioni etiche per un discernimento morale* (Assisi: Cittadella, 2012).

be fulfilled by a Hollywood movie, but by creative and imaginative ways to discern the presence of the Spirit and strengthen it within the Body of Christ in just relationships.

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