

# *Transhumanism*

with Hava Tirosh-Samuels, “*Transhumanism as a Secularist Faith*”; Robert M. Geraci, “*Video Games and the Transhuman Inclination*”; James J. Hughes, “*The Politics of Transhumanism and the Techno-millennial Imagination*”; and Ronald Cole-Turner, “*The Singularity and the Rapture: Transhumanist and Popular Christian Views of the Future*”

## VIDEO GAMES AND THE TRANSHUMAN INCLINATION

by Robert M. Geraci

*Abstract.* Video games and virtual worlds play substantial roles in contemporary transhumanism. Many transhumanists appreciate the freedom and power that accompany these digital landscapes and recognize that they can promote transhumanist ways of thinking beyond the borders of explicitly transhumanist groups. Video games and virtual worlds enable transcendence through their design and contribute to transhumanism through the options they enable and the influence they have. Because of their significant place in transhumanism, video games and virtual worlds are thus important to the study of religion and science in the twenty-first century.

*Keywords:* *Deus Ex; Gears of War; Mass Effect; religion; science; Second Life; technology; transhumanism; video game; virtual world*

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Transhumanism is a pervasive religious system in modern life, operating across a wide array of cultural domains, both implicitly and explicitly. In order to fully understand its presence and possibilities, we must appreciate how transhumanist discourses operate in video game culture. Designers often build video games according to transhumanist fantasies, and transhumanists hope that the games can help reshape our reality. While we do not know if such fantasies will be made into reality, the very process by which transhumanists hope it might be possible is a novel element in the impact of religion upon science and technology.

In order to understand digital and transhumanist fantasies, we should begin with a story from one of the twentieth century’s most important fantasists: Jorge Luis Borges.<sup>1</sup> In his story “*Tlön, Uqbar, Orbis Tertius*,” Borges describes how a few individuals’ fantasies can rework the entire world (Borges 2007, 3–18). It is the story of an imaginary land (Uqbar), wherein legends were purported to exist of another mythical region (Tlön).

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In the absence of a real Tlön, one character recommends that he and his companions write the history of it; and so a group of conspirators compose Tlön's history, sciences, literature, et cetera. Their collected works, *The First Encyclopedia of Tlön*, are then released on Earth, whose inhabitants begin reshaping the planet and its culture in the image of the imaginary Tlön. Borges writes:

The contact and habit of Tlön have disintegrated this world. Enchanted by its rigor, humanity forgets over and again that it is a rigor of chess masters, not angels. Already the schools have been invaded by the (conjectural) "primitive language" of Tlön; already the teaching of its harmonious history (filled with moving episodes) has wiped out the one which governed my childhood; already a fictitious past occupies in our memories the place of another, a past of which we know nothing with certainty—not even that it is false. Numismatology, pharmacology and archeology have been reformed. I understand that biology and mathematics also await their avatars . . . . A scattered dynasty of solitary men has changed the face of the world. (*ibid.*, 18)

I shall argue throughout this paper that Borges's fantasy can help us understand how many transhumanists use and perceive video games and virtual worlds. I am not going to offer any conspiracy theories, but rather a suggestion that a few individuals' technological fantasies (hope that technology will permit human transcendence) borrow from twentieth-century technofantasies (popular science promises that we shall become cyborgs or upload our minds into virtual reality) and are rapidly becoming one of the foci of transhumanism's eschatological hopes. That is, some transhumanists hope to rework reality in accordance with a vision—played out in video games—of a fantastic realm of the imagination.

While in Borges's fantasy, the reworking of the world comes through literature, transhumanists aspire to use technology, especially digital technologies, to accomplish this end. By its very nature, technology is about transcending our limits, but video games work much better than other technologies as an illustration of our human potential. Consider nuclear power: while Spider-Man might be an enviable apocalyptic outcome of nuclear power, mostly we just expect death from exposure to radiation. In games, however, we always come back to life, and thanks to what we learn in the process, we come back better than before.

Almost every virtual world is, by definition, an opportunity to transcend our biological limits. Thanks to Internet connections, they allow human beings to join one another across great distances. Because entrants desire something beyond the pale of the ordinary, programmers provide superhuman abilities: flight, teleportation, extraordinary tools for creating, and magical fighting prowess. Virtual world residents live in a magical place infused with meaning and power; rather than waiting for a traditional religious afterlife to acquire such transcendence, they can log on to their computers. Long before the video game explosion, mid-twentieth-century advocates had already infused the earliest visions of computer technology with utopian promises (Turner 2006), and these promises

were eagerly adopted by both designers and users who craved a modern version of “sacred space” (Wertheim 1999). This digital soteriology depends upon the treatment of information and materiality in the development of cybernetics and has undergone several decades of interpretation and engagement in literature (Hayles 1999); to a great extent, then, video games and virtual worlds thus provide the latest—and the most compelling—instantiation of the search for technological transcendence through computers.

Video games, thanks to the transcendent benefits accrued in them (including the simple fact that they are fun), provide eminently desirable spaces. In a survey of *EverQuest* players, Edward Castronova found that 22 percent would choose to live in its fictional world if possible (Castronova 2005, 59). Sociologist William Bainbridge notes, “I would consider a continued existence for my main [*World of Warcraft*] character, behaving as I would behave if I still lived, as a realistic form of immortality” (Bainbridge 2010, 62). While Bainbridge acknowledges his own transhumanist leanings, *World of Warcraft* players who are not committed to transhumanist groups also see the appeal of living on in it. In interviews conducted among *World of Warcraft* players, even skeptics told me, “It is attractive, sure” (Dallben 2011) and “If one could have confidence in the system, it could be tempting” (Telera 2011). Among actual transhumanists, the numbers of those who would like to upload their minds into *World of Warcraft* or a similar game are even higher: 51 percent of transhumanists in a recent survey would find it appealing.<sup>2</sup>

The combination of cyberpunk science fiction and popular science robotics in the 1980s and 1990s brought mind uploading and transhumanist salvation to a broad audience. Science fiction books—such as Vernor Vinge’s *True Names* ([1981] 2001), William Gibson’s *Neuromancer* (1984), and Neal Stephenson’s *Snow Crash* (1992)—created enormous enthusiasm for computer technologies, especially virtual reality. Pop science books—beginning with Hans Moravec’s *Mind Children* (1988) and *Robot* (1999), but culminating in the widely read *Age of Spiritual Machines* (1999) and *The Singularity Is Near* (2005) by Ray Kurzweil—provided a scientific explanation for how it might one day be possible to copy human minds into virtual reality environments, where we would become immortal software entities. The combination of pop science and science fiction in the spread of transhumanism was persistent throughout most of the twentieth century (see Geraci 2011), and it has been critical to the belief that we might one day upload our minds into virtual worlds, perhaps even environments such as *World of Warcraft* or *Second Life*.

Whether digital technologies can live up to their utopian promises is an open question, and not one subject to empirical analysis. Although advocates of mind uploading and other technologies rely upon what they see as unassailable guarantors, such as evolution or a law of accelerating returns (see Kurzweil 1999, 33; Kurzweil 2005, 7–21; Moravec 1999,

165–7), the only actual test for the hope that technology can eradicate human finitude will be for that event to actually come about. As such, this paper is emphatically *not* about whether transhumanists are right or wrong, whether their fantasies are grounded in reality or delusion. Rather, this paper is a cultural study, an attempt to understand what is at stake in the modern world: how it is that video games are part of transhumanist thought and practice.

Increasingly, in order to understand transhumanism one must understand transhumanists' influence upon and through virtual worlds and video games. Through specific design features and the intent of some designers, games engage transhumanist promises and hopes. As a consequence, many transhumanists have adopted video games and virtual worlds as spaces for preparation, participation, and evangelization.

#### DATA COLLECTION

In order to appreciate how transhumanism and game design intertwine, I have tracked gamers and transhumanists through web forums and e-mail listservs; conducted interviews with game designers, transhumanists, and players; and conducted a small survey of opinions held by avowed transhumanists with an interest in virtual worlds and video games.<sup>3</sup> As a consequence, the data contained in this essay result from several years of working with transhumanist groups. The survey, which was distributed through two transhumanist e-mail listservs, also included space for commentary. Throughout this paper, quotations taken from survey comments and some of the interviewees will be given pseudonyms from a once-popular children's fantasy series to maintain anonymity while also distinguishing among different individuals. Other interviewees agreed to have their names published, and so will be cited by their names.

Only a few specific video games and virtual worlds will be described here, but there are literally hundreds of video games that take on transhumanist themes. Obviously, any game involving space or time travel does so, as do games that involve heroes enhanced through exoskeletons, cybernetics, or genetic enhancement. When heroes, villains, or friends upload their minds into machines or were intelligent machines to begin with, games mirror promises transhumanists have made for decades. From *Space Invaders* (1978) and *Metroid* (1986) to *Final Fantasy VII* (2007) and *Singularity* (2010), games play with transhumanist technologies and outcomes. There will not be room to discuss every possible transhumanist intervention in game design, however, so a few key games will take pride of place.

#### TRANSCENDENCE BY DESIGN

Transcendent design takes place through three primary paths: (1) the presence of explicitly religious ideas in games, (2) the use of transhumanism in games, and (3) transhumanist beliefs held or interrogated by designers.

Although the first of these bears upon transhumanism only lightly, it is nevertheless a part of the intersection between gaming and human transcendence. More importantly, however, games both implicitly and explicitly engage transhumanism. By their nature, every game permits transhuman possibilities, and there are games whose narratives and play revolve around specifically transhumanist themes. While the former concern is a by-product of the technology, it is important to note that the latter is a result of deliberate choices made by designers who wish to engage their players in debates about transhumanism.

Video game design often includes religious elements that help create storylines, produce interesting environments, or offer a commentary about contemporary culture. Mythologies both real and imagined are effective ways of producing immersive gaming environments (see Krzywinka 2006; Love 2010) and can be built into landscapes through architecture, symbolism or textual references. In the *Halo* (2001–2010) series, for example, the alien invaders are part of an alliance called the Covenant, which is on a holy war to exterminate humanity. Similarly, Greek and Norse mythologies provide ready-made story environments for many games, such as *Viking—Battle for Asgard* (2008). In producing its Northrend continent for *World of Warcraft* (2003), Blizzard Entertainment also relied heavily upon Norse mythology, which the designers reworked to provide the basis for many of the characters and storylines. There are, of course, many ways in which religious stories, characters, and themes can be and are integrated into video games, but these provide only minimal access to transcendent experiences or states of being, even when the games are specifically religious, as in the Christian games *Bible Adventures* (1991) or *Left Behind: Eternal Forces* (2006).

There is a genre in which gamers play toward traditionally religious states of being. Of course, *Left Behind* and its Christian salvation is one example of this, but so is the revolutionary *Ultima IV: Quest of the Avatar* (1985), in which the protagonist undertakes a mission to become the “Avatar,” a figure who excels in the three virtues of the game (honesty, compassion, and valor). In other games, a player can begin as a god, such as in *Black & White* (2001), or work toward becoming one, such as in *Populous: The Beginning* (1998). Thus, mythical elements and traditional religion in a game story can serve as the backdrop against which players may strive to attain a new level of being. These games explicitly describe how characters possess or acquire traditional modes of transcendence, but games also enable nontraditional modes of transcendence that are closely aligned or identical with transhumanist thought.

Transhumanism appears both implicitly and explicitly throughout video games: first, games enable transhumanist states of being, and second, they explore transhumanist ideas. The first is general to all video games and virtual worlds; they allow users to do things that would be impossible in ordinary life. They allow us to inhabit magical environments where we

acquire tremendous powers and raise ourselves up from the dead at those moments where our powers or our skills are inadequate to the task at hand. One transhumanist not only sees a connection between transhumanism and gaming, but even equates them:

In a sense transhumanism is gaming. It is the same idea that you can become something more than yourself. Thus, anytime you build a character and go “in-world” you have created an idealized or specialized extension of your own being. . . . Video gaming most closely mirrors [transhumanism] because of the added technological elements that allow one to change the self easily and quickly. Much like the freedom one might have if you could delve one’s mind into the computer. (Gwydion 2012)

Likewise, when I asked Sheldon Pacotti, the lead writer on *Deus Ex* (2000) and *Deus Ex: Invisible War* (2003), if video games were inherently transhumanist, he told me, “Transhumanism is just another expression of power, like magic in a fantasy story or a double-jump in Mario. Games give players the power to do things—sometimes extraordinary things—they would not do in ordinary life. I think it’s pretty savvy to realize that all games share this same mechanism . . . and it all could be called transhumanism, since it takes the audience beyond their mundane lives” (Pacotti 2012). Joshua Ortega, writer for *Gears of War 2*, agrees, averring that “all virtual life is essentially a step towards joining ‘the Matrix,’ or giving up the physical world for the virtual” (Ortega 2012).

Games provide transhuman experiences: they empower players and provide an arena in which transhuman growth becomes possible. Although winning is, of course, a key goal in gaming, growth and development are actually more important to their appeal. Players have either magic or powerful technologies (or both) at their disposal within video game worlds, and both are consistent with transhumanist outcomes of surpassing the limits of human life. But the presence of powers is, itself, less reflective of transhumanism than the possibility of ongoing self-improvement. It is the process that matters, rather than the acquisition. In games, players evolve. They gain access to new, often more glamorous equipment, and they earn achievements and accolades, which are often maintained in lists visible to other players and rewarded with moments when the player sees a banner on the screen announcing the achievement.

An opportunity to become more powerful, to grow beyond ourselves, is something that all human beings desire, and it is at the core of transhumanism. Consider, for example, comments made in a recent compilation of essays about transhumanism: (1) “Utopia is not so much a place as a direction, a good direction” (Rothblatt 2011, 113); (2) The movie *Gattaca*’s protagonist is a transhuman hero—despite lacking any typical transhuman augmentations—because he overcomes his limits using technology (Marson 2011, 91); and (3) “Transhumanists maintain that we can legitimately reform ourselves and our natures” (Bostrom 2011, 57). Such attitudes have been common, even emphasized, among transhumanist

groups, but all of these recent statements were probably influenced by the Extropy Institute, a transhumanist movement from the 1980s and 1990s. The first principle of Extropy is perpetual progress. Extropians aspired toward “perpetually overcoming constraints on our progress and possibilities as individuals, as organizations, and as a species, growing in healthy directions without bound” (More 2003).

Games, too, are places of reform, where we become more than we were. Nearly every video game includes opportunities for players to attain higher levels, gain new and varied powers, even acquire new ranks or states of being. Thus, progress is inherent in the fun of gaming. Bonnie Nardi goes so far as to mark a Victorian sense of character development as one of the chief pleasures of *World of Warcraft* (Nardi 2010, 13), and it may be that this sense is broadly present in much of gaming culture. Exemplifying this idea, one transhumanist says, “Video games provide a setting in which self-actualization and self-improvement are strongly encouraged (as exemplified by the concept of ‘leveling up’) . . . . Essentially, transhumanism can be seen as general approval of improvement of everything without artificial boundaries” (Eilonwy 2012). Clearly, the video game environment is one that enables transhuman experiences—the player gains transcendent powers and a potential for continual growth.

The implicit transhumanism in gaming works in conjunction with explicitly transhumanist themes. Philip Hefner speaks of “lower-case transhumanism” and “upper-case Transhumanism” as a distinction between an implicit but pervasive cultural desire to remain healthy and young forever, and explicit awareness of and acceptance of transhumanism as a philosophical or religious undertaking (Hefner 2009). We have already seen how video games offer an implicitly transhumanist experience for gamers, but at the same time there are games where players must explicitly wrestle with transhumanist themes and future possibilities through the narratives and mechanics of particular games.

Many game designers are aware of transhumanist promises, which percolate throughout contemporary tech culture. Writer Joshua Ortega, who worked on the popular *Gears of War 2* (2008), as well as writing *Gears of War* comics and consulting for the film and novel, told me that transhumanist ideas come to video games “mostly through fiction and pop culture. Kurzweil too, for those who delve a little deeper. The influences of transhumanism are found everywhere in games, and I do believe it has currency in video game circles. It is a fascinating and important subject to address now rather than later” (Ortega 2012).

Given the cultural relevance of transhumanism (see Geraci 2010a, 2010b; Hefner 2009; Tirosh-Samuelson 2011), and the frequency with which transhumanist ideas circulate in tech circles (Lanier 2010, 25), it should come as no surprise that some games explicitly engage transhumanism, encouraging players to embrace or at least wrestle with transhumanist ideas. The teaser trailer for *Deus Ex: Human Revolution*

(2011), for example, pans over a topographically obscure landscape while the voiceover dramatically states, “For centuries man has struggled to understand his true nature. What is it that makes us who we are? Soon, one answer will override all others.” At the end, one sentence is left for the viewer to read: “Who we are is but a stepping stone to what we can become” as the camera pans out to reveal that the landscape is a cybernetic baby (IGN 2011). Similarly, the introductory movie to *EVE Online* (2003) asserts, “You are about to become what all men should fear. You will roam the heavens commanding the most powerful machines ever built, so unbound that not even death itself can claim you. For you are immortal, with all eternity to seize a destiny that is yours to define. But you are not alone with such power; other demigods roam these stars as well. . . . What you dare to become rests on your will to be bold” (CCP 2009). Such explicit claims of godhood, immortality, and a transhuman future enfold players in a vision informed by transhumanist promises and subsequently force players to grapple with what those promises mean for humanity.

The *Deus Ex* franchise does not force players into sympathy with transhumanism, but rather it provides opportunities for the players to reflect on it and forge their own paths. In each of the games, forces array against one another, either in opposition to or advocacy of human augmentation, and the players can choose which factions to support. In doing so, they can think about the issues on their own terms, though the games appear to be “loaded” in favor of particular (but certainly not all) possible transhuman futures. To promote player thoughtfulness, the games’ protagonists begin as blank slates, ignorant of the debate over augmentation and therefore able to change per the players’ interests. Mary DeMarle, the lead writer for *Deus Ex: Human Revolution*, says that Adam, the protagonist, “gets exposed to the full brunt of prejudice on both sides. Since you are playing Adam, you get to experience this firsthand as well. Thus, how Adam’s perspective changes over the course of the game really depends on how your perspective shifts. You’re the one playing him. You are the one making choices and witnessing the consequences” (in Munkittrick 2011). According to the game’s lead designer, Jean-François Dugas, “The point of the game is not to make a statement or be moralistic. This game is about being able to explore a world, to show where humanity might be going and what it might mean, and to allow players to make their own decisions as a result” (in Leijon 2011). This attitude reflects a fundamental aspect of the *Deus Ex* franchise. Sheldon Pacotti, lead writer for *Deus Ex* and *Deus Ex: Invisible War*, began the series with a very similar ethic. In an interview with me, he described two of the possible outcomes for the game in the context of the larger goal of providing player opportunities:

To be worthwhile, a game story has to allow [a] spectrum of contradictory viewpoints. . . . In *Deus Ex*, the player who lusts for power can cross all the way



over to the machine world, merging with the Helios AI into a god-like machine intelligence, imposing order on the planet. Or he might recoil from the command of the transhumanists, who created augmentations as a means of control, and plunge the world into a dark age incapable of such magic. My goal as a writer for the game was to put both ideas and many viewpoints into “play,” so that players could decide for themselves what to make of this possible future. (Pacotti 2012)

While they may be a minority among the hundreds of games that depict transhuman technologies, explicitly transhumanist games are an important subset of the game world. The original *Deus Ex* won literally dozens of “Game of the Year” awards and is on several significant lists of the “Greatest Games of All Time” (see Wikipedia 2012). It spawned two sequels, and the franchise may have more to come. Meanwhile, the *Deus Ex* franchise is not the only one to work through transhumanist themes; quite a few other games include human enhancement, cyborgs, and artificial intelligence. Perhaps the most financially successful of these is the *Mass Effect* franchise, which reflects a real social pattern in the way the human race gradually accepts transhumanist outcomes over the course of several games.

The *Mass Effect* sequence mirrors the adoption of biotechnologies during the twentieth century, and perhaps beyond. Over the course of three *Mass Effect* games, from 2007 to 2012, players fight against aliens using technologies opposed in most of their forms by the government. Political resistance to AIs and human augmentation gives way to cyborg resurrection of the hero after the character’s death in between the first and second installments of the game, and by the third game, the player relies upon an AI companion to help her fight and explore. Although the game world description reveals that human leaders object to most forms of genetic engineering, the player is always augmented, even prior to his or her techno-resurrection. By the final game, a ban on AIs carries little weight, and the player depends upon one . . . and may even form an emotional attachment to it. What was once anathema becomes permissible. *Mass Effect* is, of course, a game, but just as augmentation seems increasingly acceptable in the series, we have adopted technologies that we once felt unacceptably amoral or unnatural. Bioethicist Leon Kass defines the “wisdom of repugnance,” more commonly called the “yuck factor,” as our innate disapproval of certain biotechnologies (Kass 1997) and believes that we should forego any “repugnant” technologies. Yet, without doubt the twentieth century shows that what was once repugnant (e.g., in vitro fertilization) can easily become routine. Kass himself vilified Robert Edwards and Patrick Steptoe in the 1970s and now accepts IVF as a legitimate reproductive technology. Likewise, the technologies outlawed early in *Mass Effect* become commonplace by the third installment.

Many players follow the progress from repugnance to acceptability and appreciate how transhumanism is thereby normalized in *Mass Effect*. Comparing the role of transhumanism in console games and massively

multiplayer online games (MMORPGs), one player writes, “I . . . believe games like *Mass Effect*, despite being single player, are doing a much better job at making people consider the consequences of transcending biology, as they at least touch the subject in narrative” (Adaon 2012). Just as avowed transhumanists appreciate the presence of augmentation in the franchise, players explicitly reference it and seek more. The games spawn Internet discussions that cross dozens of posts in which players debate the meaning of being human, the nature of the transhuman, and the role of both in the games. “I wish there was *more* of a transhumanist flavor in [*Mass Effect 2*],” writes one Internet poster, “especially for human characters” (LookingGlass93 2010, emphasis added). Thus, while transhumanism is not remotely camouflaged, the choice to make it merely implicit in the game did not sit well with some players, who sought to see it better elaborated.

There is power, however, in the approach taken by the *Mass Effect* design team. As one player describes it, “I like the subtlety in *Mass Effect* as much as I like the head-on approach in *Deus Ex*” (Madisk 2010). Another poster, also putting *Mass Effect* into conversation with *Deus Ex*, reflects positively on the differing approach: “Now that a new *Deus Ex 3* trailer is out, that’s probably where all the h+ (transhumanist) discussion is heading. But I like the ME universe’s treatment of it as something not directly tied into the main arc of the plot” (Aleph-0 2010). For these players, whether transhumanism is thrust into the foreground or merely constitutive of game play and the narrative arc matters less than whether or not the game explicitly engages transhumanist thinking and enables player introspection. “The topics really do not need to be understood as Transhumanism and Singularity for their moral conflicts to feel prescient. These are issues that humanity will have to face someday, and the narrative accepts that” (AtlasMickey 2012).

Games provide opportunities for reflecting on transhumanism because there are game designers who find the debate interesting. It is important to note that transhumanist games are not universally the outcome of transhumanist evangelism on the part of the designers, but they occasionally do emerge out of this. In interviews, game designers almost universally express skepticism about the possibility of transhumanist predictions, and yet still find those predictions compelling and interesting and worthy of debate.

In the *Deus Ex* franchise, both Pacotti and DeMarle are interested in transhumanism, though neither describes himself or herself as a devotee. Pacotti says that, “I was personally aware of Kurzweil and Moravec when I wrote the script for *Deus Ex*, but I have always been a skeptic, aware of just how neatly their futurist timelines align with their own life expectancies” (Pacotti 2012). DeMarle, who had to research transhumanism when she joined the *Deus Ex* team, reports:

In the process, I've seen the potential and the incredible allure of human augmentation. . . . I think augmentation can be both a positive and a negative thing. . . . Individuals should be able to decide what is good for them as individuals (so long as their choice doesn't harm others), and if the technology progresses enough, it may very well make sense for people to choose to replace a fully functional natural limb with a cybernetic one. I, however, would probably choose not to. (in Munkittrick 2011)

Thus, commitment to transhumanist outcomes is not an essential ingredient to writing games that engage it but a healthy appreciation for the possibility that such futures can be integrated into the story and design options.

Not all designers of games that employ transhumanist themes are sympathetic to the movement, however. By reducing the question of transhumanism to immortality, indie game developer Jason Rohrer created a binary opposition between death and life. In his game *Immortality* (2007), players can choose immortality and then build with blocks until they grow so bored that they quit voluntarily by choosing death. If they choose neither, they can build until five minutes have elapsed, at which point the character collapses dead, having used up its allotted lifespan. "I am a total transhuman skeptic. . . . It's the same old snake oil," Rohrer told me, but *Immortality* plays with such faith (Rohrer 2012). In his description of the game, Rohrer writes, "We generally assume that immortality is good, just as we assume that death is bad. Of course, universal immortality (all six billion of us) would be physically impractical. But what about individual immortality? What about for you? If you could become immortal, would you?" (Rohrer 2008). His game, rather than advocacy or policy exploration, is a "thought experiment. . . it was challenging some of those people who would want to live forever, or think they're going to, about whether they really would want to and what that would really mean" (Rohrer 2012).

*Immortality* spawned discussion and debate on the Internet site, The Escapist, where it was released; and despite Rohrer's own distaste for transhumanism, many of the players approve of the movement. One person even believes that the game itself "*strongly supports* the decision of immortality," and suggests that the game's mechanic—through which blocks are stacked and a vine can climb up them—provides a sense of purpose that encourages players to stick with it (JJ10DMAN 2008, emphasis original). Most commentators, however, found that *Immortality* failed to fully illustrate the many options that might be available to those with eternal youth, and a considerable majority declared that as their preference. Among the 38 posts in which a position on immortality was taken, 28 favored it (The Escapist 2008).

Whether or not mind uploading or transhumanist immortality is a realistic possibility, transhumanist aspirations do appear to have been at the core of at least one game-like environment: the virtual world *Second*

*Life* (2003).<sup>4</sup> *Second Life* designer Philip Rosedale has asserted that “to be stuck in a skeleton . . . it’s not a good outcome, not a good situation” (in Au 2008, 233), and while demurring on whether mind uploading might be possible he also suggested that “all we have to do now is figure out how to escape death” (*ibid.*, 232). With reservations, he appears to accept the basic premise of mind uploading when he acknowledges that “regardless of what we build with technology, it seems hard to imagine that each of our living physical bodies will not die at some point—at least those of us alive today” (Rosedale 2011). His implication that in the future it might be possible to radically extend human life spans and his hope that we might overcome death reflect Rosedale’s willingness to believe that some transhumanist dreams might come true. At some point, we might reach an end to this world of mortality, and enter a new realm of glorious potential. In keeping with this, in an interview with the journalist Tim Guest, Rosedale claimed, “There’s a reasonable argument that we’ll be able to leave our bodies behind by uploading into virtual reality” (in Guest 2007, 273). We should not, then, be surprised that Rosedale appeared in Kurzweil’s biographical documentary *Transcendent Man* (2009) or that Kurzweil was the keynote speaker for the 2009 *SL* Community Convention.

Former employees at Linden Lab, which produces *Second Life*, confirm that transhumanism filtered through the company’s environment. John Lester, known as “Pathfinder Linden” when he worked on *Second Life*, reports that the employees “really did think about things like transhumanism and everyone had read Kurzweil and really thought about how this technology was something that was not just going to improve the way human beings did things in one particular fashion, but how it was going to change how people did things, how it would change lives . . . There were lots of conversations about transhumanism and . . . where this would go” (Lester 2011). Likewise, Wagner James Au, Linden Lab’s “embedded journalist,” told me, “When I was at Linden Lab, 2003–2006, the topic of uploading our consciousness into *SL* definitely came up on occasion” (Au 2011). It is not a far leap from such conversations to Linden Lab’s eventual mission statement: “To connect everyone to an online world that improves the human condition.”<sup>5</sup>

There is a rich variety in the transcendent design of video games, from religious stories, themes, or images to the presence of transhumanism in games through empowerment and explicitly transhumanist storylines and even, occasionally, the transhumanist interests of the developers. All by themselves, the latter two considerations make game design an integral part of the transhumanist world. After all, in my survey of transhumanists with an interest in gaming, approximately half of the respondents indicated their belief that transhumanist ideas about humanity and technology influence the design and play of video games. But by taking the analysis one step further, we can see how transhumanists themselves welcome

gaming into their communities and look upon it as a part of contemporary transhumanism.

#### TRANSCENDENCE BY DESIRE

Transhumanists recognize the connection between gaming and transhumanism, and actively pursue opportunities to realize their eschatological hopes through games. Games are playgrounds for the imagination, and as we have already seen, they can fruitfully engage transhumanist ideas and aspirations—by their very nature, they are attuned to the transcendent imagination. There is, as one transhumanist puts it, a “very clear and positive relationship” between video games and transhumanism (Rhun 2012).<sup>6</sup> As a result, many avowed transhumanists see video games and virtual worlds as ideal locations to prepare for transhuman futures and to evangelize for them.

It is precisely because the design of games and game-like environments enable transhuman experiences that the games provide such efficient preparation for a transhuman future. As one *Second Life* transhumanist says, “*SL* and other efforts are in part the foundation for eventual upload existence” (Seraph 2010). *Second Life* provides new ways of communicating, new ways of shaping the body, and powerful tools to shape one’s environment. These combine to make it a particularly compelling location for transhumanism. Natasha Vita-More, longtime advocate and current president of Humanity+, the world’s largest transhumanist organization, believes that “there is an interdependent relationship between the metaverse and the field of human enhancement in that both incite plasticity” (Vita-More 2010, 71).

The tools for building, for example, allow residents to shape *SL* as they see fit, and thus perhaps foretell what the future might be like if nanotech cheerleaders are correct in their predictions of forthcoming “utility fog” technology (see Hall 1993). The very idea that the world can be remade into something wondrous can pass from *Second Life* into the conventional world. As Colin Milburn explains, “In living their ‘second lives,’ residents inhabit the virtual dimension of nanotechnology, playing out its core concepts and conforming to its dreams, enflashing it, adopting its modes of operation as a durable habitus, and thereby bringing it forth into the world, into real life, contained inside themselves—whether they know it or not” (Milburn 2008, 71). By residing in *SL*, living its ways and using its capacities, players gain a sense of being that aligns with the nanotech dreams of transhumanism—they can then log off, potentially keeping that sense of action in the world and thus participating in the transhumanist dream.

Likewise, *SL*’s freedom in avatar design means that residents can become the people (or animals or robots or whatever else) that they’ve always

wanted to be, and shape their personalities in new ways. As such, *SL* corroborates well with transhumanist goals. From Sherry Turkle (1996) to Richard Bartle ([2003] 2004, 163), many observers of cyberspace, virtual worlds, and video gaming see them as places where individuals can be who they truly wish to be. Realizing such dreams in video games can thus be implicitly transhumanist whether or not those who work with new identities see themselves as part of a broader philosophical or religious movement.

While *Second Life* meshes well with transhumanist goals, the genuine games that incorporate transhumanism also act as preparation for possible transhuman futures. An Internet thread on *Deus Ex: Human Revolution*, for example, ran to sixteen pages of commentary on transhumanism in the game (RPG.net 2011) and included some thoughtful debate on the risks and benefits associated with human augmentation and transhuman futures. Many posters were impressed by the degree to which the game engages technology and allows players to think through it. “*Human Revolution* feels very applicable to current issues,” one writes, “and that’s what great art should do, make you think about things in real life” (CowboyEnergy 2011). As forum posters considered the ramifications of human augmentation, both for individuals and for society, they worked through issues of class struggle and equity, of individual freedom, and of corporate politics. By engaging such issues through the game, players prepared for political concerns that may dominate the middle of the twenty-first century and beyond.

Ultimately, while games like those in the *Deus Ex* franchise provide players with grist for the mill, avowed transhumanists see those games as clearly preparing for the future. One survey respondent wrote that, “I think that video games and virtual worlds represent an early form of cyber-transhumanism” (Gwydion 2012). Another answered similarly, with a precise explanation of how this could be:

As for videogames in general, and particularly MMORPGs, you almost always have an avatar, a digital representation of you that you pilot around the world, projecting your identity onto this (almost) blank canvas. The avatar is sort of you and, at the same time, sort of somebody else. It could be that increasingly sophisticated avatars will act as a kind of bridge easing humans into a future in which brains can be scanned, mapped, and reconstructed digitally: Uploads, in other words. (Taran 2012)

While *Deus Ex* and others may be “just games,” they are serious business in transhumanist circles, working as the template for the future. Every player who acclimates to operating within virtual worlds, controlling a character that is simultaneously both identical to and distinct from herself, moves a tiny step toward a future in which mind uploading looks both more reasonable and more plausible.

As a result, many transhumanists see evangelical possibilities in video games. Although science fiction and popular science have been the

traditional genres for transhumanist evangelism (see Geraci 2011), video games may well overtake them. For some transhumanists, the connection between games and their beliefs is simply too strong to ignore. As one reports, “transhumanism and video gaming became my lifetime project a few years ago. I plan to release my first game in a year or so” (Coll 2012). Specifically, by making games that expose players to transhumanism, some advocates hope they can advance their agendas in the public marketplace of ideas, changing our world and our culture.

Already, virtual worlds and video games are part of transhumanist communities; they provide communication channels that solidify the current membership, but also help to grow it. Under Natasha Vita-More’s leadership, Humanity+ has begun meeting in *Second Life*; but the value of *SL* and other platforms to transhumanism is more than serving as a glorified telephone. In keeping with this, she has told me that she thinks using *SL* could lead a resident toward a positive vision of transhumanism, in particular because “there are many avatar designers who have an incredibly sophisticated sense of design” and she “would like to encourage them to work with transhumanists to build exciting environments” (Vita-More 2011). Perhaps unsurprisingly, 90 percent of survey respondents believe that virtual worlds and video games can be used for transhumanist community building.

On listservs, transhumanists have explicitly debated using video games as a tool for transhumanist evangelism. In 2010, the Order of Cosmic Engineers, a transhumanist group founded by William Bainbridge, Giulio Prisco, and others, debated gaming technologies, with many authors thinking about how to produce a game that would advance transhumanism. One member suggested that a game could include mind uploading in order to “introduce the ‘hip young crowd’ to the idea” (Suntzu 2010). Others applauded the idea but despaired over the difficulties of getting the funding necessary to launch one. Although the OCE became less active, several of its members reformed as the Turing Church, and the conversation over games eventually resumed. In a debate over how to bring more people into a positive vision of transhumanism, one member stated, “We have today the tools that may improve strongly our own ‘engineered beliefs’ by immersing us deeply in some virtual worlds where our beliefs may change and our behavior may be modified. Gaming. Gaming creates fanaticism . . . . Gaming also facilitates the adoption of ‘artificial beliefs’” (Sussan 2010). Although logistical problems stand in the way of Turing Church members producing an evangelical game, there are others with more resources at their disposal.

Alex Peake, an advocate for hacker culture and science activism, uses contemporary transhumanists and their ideas in his game *Code Hero*, which is an educational game for learning to program in Javascript. Although the game is not an explicit plea for conversion, Peake has included important members from real-life transhumanist communities in the game, giving

players a pathway to involvement. In a self-introduction sent to the artificial intelligence subset of the Lifeboat Foundation, Peake writes that, “We already have the friendly AI in the story, Pro, namedropping Eleizer [Yudowski] and Singularity Institute as one of the real-world groups whose work is behind its design” (Peake 2012). So the player, ostensibly just seeking to learn some programming, and thereby empower herself in the contemporary world (where so much of our surroundings is coded), ends up learning a bit about contemporary transhumanism as well.

Of course, games like *Deus Ex* also work this way. Just as OCE and Turing Church members would hope, the franchise has brought players into the transhumanist fold. “I played the first one nine years ago,” writes one player. “Great game, and it definitely had strong transhumanist themes in it. Really, it was a great introduction into the movement for young, mainstream people” (funkervogt 2011). *Deus Ex: Human Revolution* even has a Transhumanist “achievement” that players can earn, giving them an opportunity to deliberately strive—in game—to become transhumanists. Over the course of the franchise history, popular Internet forums such as RPG.net, GiantBomb, Darkness, and Gamefaqs included threads engaging transhumanism; while not all readers will end up transhumanists from reading such forum postings, they will unquestionably be introduced to the movement, and vastly more report favoring augmentation on such threads than opposing it. In a perfect illustration that these games—and the Internet conversations that they spawn—can influence players, one responded to a thread on transhumanism in *Deus Ex* by saying, “Very cool subject, I’d never really heard of this before . . . Can’t wait to hear more” (Adorned 2011).

There are, indeed, conversion experiences narrated on the web, revealing the potential of games to spread transhumanism. One *Mass Effect* player, for example, writes, “I was happy to see transhumanism get a shout-out in ME1 . . . and I’m glad to see more material for discussion was included in ME2. I had my interest in transhumanist thought sparked by playing *Deus Ex*/Sid Meier’s *Alpha Centauri* almost ten years ago; it’s exciting to see new games come out with similarly thought-provoking material” (Aleph-0 2010). Games can spread ideas, and they can give players an opportunity to think about the world, themselves, and the future in new ways. In doing so, they can convert players to new ways of thinking and new religio-political causes. Through their operation in game franchises like *Mass Effect*, transhumanist themes of augmentation or artificial intelligence underscore the naturally transhuman experience of playing video games as an empowered superhero. Experiencing this combination, players can become explicitly transhumanist in their self-identification.

While the writers and designers in the *Deus Ex* and *Mass Effect* franchises may not think of their work as direct evangelism for transhumanism, many transhumanists do. Among my survey respondents, 67 percent believe that



video games incline a player toward accepting basic transhumanist goals of overcoming human limitations through technology, and 69 percent believe that video games incline players toward a transhuman sense of self. From the examples above, it is clear that there are particular ways in which transhumanists would like to employ video games as evangelism or in which the games already serve that purpose. Engrossing narratives, symbolic languages, and the transhumanist nature of the video gaming all serve as tools for evangelism. The entire culture of many games, including the play within them and the Internet activity that surrounds them, engages transhumanist themes and possibilities. It is no wonder that transhumanists believe that video games incline players toward transhumanism: the games emphasize growth and empowerment, and many of them explicitly work through transhumanist ideas.

### CONCLUSION

Over the course of this paper, I have argued that video games are now influential technologies in transhumanist communities. Designers, though not always transhumanist, produce games with transhumanist features, and transhumanists themselves actively desire to use video games in evangelical contexts. Video games are by their nature implicitly transhumanist, but there are explicitly transhumanist enterprises flowing through and of them; indeed, as video gaming is on the leading edge of technological progress, it might even be that video games are actually moving society forward toward explicitly transhumanist technologies. The transhumanist design features of video games operate on two levels. The first, implicit way in which games are the product of a transhumanist design ethic is that they empower users and provide them opportunities for growth, new senses of self, wondrous new capacities, and a general transcendence over daily living. The second element of transhumanist design is explicit, when designers give players transhumanist themes and storylines to work through and contemplate as they determine their own positions. Running in parallel with these design intentions are the evangelical hopes of transhumanists themselves. Many transhumanists appreciate video games as places for community building and for inspiring young people to commit to transhumanist thought and practice; as a result, they see the games as efficient platforms that can be helpful to them through both accident and intent.

Particularly, but not exclusively, due to the relationship between video gaming and transhumanism, we cannot ignore the importance of video games in the study of religion and science. Video games have proliferated rapidly, overtaking all other media in the entertainment industry. As the games have evolved over the past few decades, they have expanded their narrative and symbolic reach, which now extends across the religious

landscape. The commentaries and contributions that video games make to the world of religion go far beyond the simplistic—and oft-derided—theologies of evangelical Christian games like *Left Behind: Eternal Forces*;<sup>7</sup> video games now exercise influence upon players by providing them with new opportunities to think and act religiously, particularly with regard to transhumanism. Objects, such as games, are not neutral intermediaries that simply pass along messages, but mediators that reshape messages and, through them, the objects' users (see Latour 2005). Insofar as games produce conversions to, or even simply understanding or appreciation of, transhumanism, then they are important players in religious thought and practice.

If we return to the story of Tlön, by now we see how wonderfully video game technologies mirror the virtual world produced by Borges's characters. Though they use a somewhat older technology (the written word, which might be considered transhumanist itself), they produce a world of the imagination that then imposes itself upon Earth. Or, rather, readers of the *First Encyclopedia of Tlön* use it and work with it to reshape their planet. At least one commentator already believes that video game players will attempt to reinvent social structures on Earth to match those they find in their games (Castronova 2007); perhaps this will be the case with transhumanism, as the movement's devotees would like. Transhumanists desire to build a new world, and many hope that video games will do that kind of work. Indeed, games already have done it in many of their lives, prompting conversions and providing opportunities for reflection. If the analogy to Borges's story is legitimate, then perhaps Eliza, the artificial intelligence of *Deus Ex: Human Revolution*, is correct when it tells the protagonist, "This isn't the end of the world, but you can see it from here."

## NOTES

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1. Another key figure worth mentioning in this context is E. Gary Gyax, the creator of *Dungeons & Dragons*. The game has not only occupied many hours of players' leisure and thought for decades, but directly inspired video game culture (e.g., see Bartle [2003] 2004, 71–3; Cortinas 2010; King and Borland 2003, 21, 27; Rolston 2009, 119). One of Gyax's most important contributions was to synthesize ancient myths and modern fiction into a system of play. Among contemporary authors who clearly influenced Gyax's work, we must include Fritz Leiber, J.R.R. Tolkien, and Jack Vance, among others.

2. It is important to remember that there are many different kinds of transhumanism, and not all transhumanists desire to upload their minds. For example, Gregory Stock argues that people will prefer cybernetic enhancements to their biological bodies over uploading their minds (Stock 2003).

3. Actually, two respondents to the survey declared themselves to be not at all transhumanist, and thus their data were excised from the totals. Overall, thirty-five respondents took the survey, of which 33 acknowledged considering themselves “definitely” or “somewhat” transhumanist. I am grateful to all respondents, and to the operators of the Order of Cosmic Engineers and Turing Church listservs, on which the survey was posted.

4. Whether or not to consider *Second Life* a game is the subject of considerable debate. Many residents and scholars of *SL* roundly reject the game label, preferring the term *virtual world* (e.g., see Boellstorff 2008, 16–24). I include *SL* in this analysis not because I wish to take a position on its status as game or not-game, but simply because it is unquestionably a part of the game design world. Boellstorff also sees virtual world research as integrally tied to game studies, even though *SL* is not, strictly speaking, a game (*ibid.*).

5. Linden Lab’s mission statement has gone through several iterations after this one, which was discarded as the company sought to broaden its offerings beyond *Second Life*.

6. It is important to note that some transhumanists do have reservations about video games, though these never constitute rejections. One respondent to my online survey feels that despite the potential of gaming, “at this moment most avid users of video games are motivated by a wish to escape reality, which I do *not* consider as a good thing (though they often have valid reasons)” (Rhun 2012), and another is concerned that a good game might be a “serious threat to transhumanist goals, as people like me who are prone to playing [massively multiplayer online games] won’t be doing anything useful when they’re engaged and possibly even addicted to such gaming activities” (Kaw 2012).

7. For cogent criticisms of *Left Behind*, see Hayse 2010 and Newgren 2010.

## REFERENCES

- Adaon. 2012. Respondent to Online Survey on Transhumanism and Video Games.
- Adorned, Odin. 2011. Posting on “Transhumanism—Religion & Philosophy” Thread at Darkness.com (August 28). <http://forum.darkness.com/topic/117699-transhumanism/>.
- Aleph-0. 2010. Posting on ME2 and Transhumanism Thread at BioWare Social Network. <http://social.bioware.com/forum/1/topic/105/index/1556956/1>.
- Atlas, Mickey. 2012. Posting on “Mass Effect 3 Story and Campaign Discussion” at BioWare Social Network. <http://social.bioware.com/forum/1/topic/355/index/10782781/4>.
- Au, Wagner James. 2008. *The Making of Second Life: Notes from the New World*. New York: HarperCollins.
- . 2011. Personal E-mail to the Author (September 6).
- Bartle, Richard A. 2004 [2003]. *Designing Virtual Worlds*. Berkeley, CA: New Riders.
- Boellstorff, Tom. 2008. *Coming of Age in Second Life: An Anthropologist Explores the Virtually Human*. Princeton, NJ: Princeton University Press.
- Borges, Jorge Luis. 2007. *Labyrinths: Selected Stories and Other Writings*. New York: New Directions Books.
- Bostrom, Nick. 2011. “In Defense of Posthuman Dignity.” In *H±: Transhumanism and Its Critics*, eds. Gregory R. Hansell and William Grassie, 55–66. Philadelphia, PA: Metanexus Institute.
- Castronova, Edward. 2007. *Exodus to the Virtual World: How Online Fun Is Changing Reality*. New York: Palgrave Macmillan.
- CCP. 2009. “Eve Online Game Introduction Movie.” Available at [http://www.youtube.com/watch?v=\\_jffKSIqkvM](http://www.youtube.com/watch?v=_jffKSIqkvM).
- Coll. 2012. Respondent to Online Survey on Transhumanism and Video Games.
- Cortinas, Marty. 2010. “The Story So Far: Inside the Mind of Blizzard’s Creative Godfather, Chris Metzen.” *World of Warcraft Official Magazine* 1(3):22–33.
- Cowboy Energy. 2011. Posting on “[Debates on Transhumanism] *Deus Ex* Really Nailed It . . .” thread at RPG.net (September 17). <http://forum.rpg.net/showthread.php?593205-Debates-on-Transhumanism-Deus-Ex-HR-really-nailed-it/page2>.

- Dallben. 2011. E-mail Interview with the Author (December 6).
- Eilonwy. 2012. Respondent to Online Survey on Transhumanism and Video Games.
- The Escapist. 2008. Comment thread on "Game Design Sketchbook: *Immortality*." <http://www.escapistmagazine.com/forums/read/6.61887-Game-Design-Sketchbook-Immortality?page=3>.
- Funkervogt. 2011. Posting on "A Transhumanist Game: *Deus Ex*" thread at KurzweilAI.net. <http://www.kurzweilai.net/forums/topic/a-transhumanist-game-deus-ex>.
- Geraci, Robert M. 2010a. *Apocalyptic AI: Visions of Heaven in Robotics, Artificial Intelligence and Virtual Reality*. New York: Oxford University Press.
- . 2010b. "Popular Appeal of Apocalyptic AI." *Zygon: Journal of Religion and Science* 45(4):1003–20.
- . 2011. "There and Back Again: Transhumanist Evangelism in Science Fiction and Popular Science." *Implicit Religion* 14(2):141–72.
- Gibson, William. 1984. *Neuromancer*. New York: Ace.
- Guest, Tim. 2007. *Second Lives: A Journey through Virtual Worlds*. New York: Random House.
- Gwydion. 2012. Respondent to Online Survey on Transhumanism and Video Games.
- Hall, J. Storrs. 1993. "Utility Fog: A Universal Physical Substance." In *Vision 21: Interdisciplinary Science and Engineering in the Era of Cyberspace*, ed. G. A. Landis, 115–26. Lewis Research Center: NASA.
- Hayles, N. Katherine. 1999. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago, IL: University of Chicago Press.
- Hayse, Mark. 2010. "*Ultima IV*: Simulating the Religious Quest." In *Halos and Avatars: Playing Video Games with God*, ed. Craig Detweiler, 34–46. Louisville, KY: Westminster John Knox Press.
- Hefner, Philip. 2009. "The Animal that Aspires to Be an Angel: The Challenge of Transhumanism." *Dialog: A Journal of Theology* 48(2):164–73.
- IGN. 2011. "*Deus Ex: Human Revolutions* – Official Teaser Trailer." Available at <http://www.youtube.com/watch?v=EBsHm4Ccz5c>.
- JJ10DMAN. 2008. Comment on "Game Design Sketchbook: *Immortality*." The Escapist (June 22). <http://www.escapistmagazine.com/forums/read/6.61887-Game-Design-Sketchbook-Immortality?page=3>.
- Kass, Leon. 1997. "The Wisdom of Repugnance." *The New Republic* 216(22):17–26. Reprinted by the Catholic Education Resource Center. Available at [http://www.catholiceducation.org/articles/medical\\_ethics/me0006.html](http://www.catholiceducation.org/articles/medical_ethics/me0006.html).
- Kaw. 2012. Respondent to Online Survey on Transhumanism and Video Games.
- King, Brad, and John Borland. 2003. *Dungeons and Dreamers: The Rise of Computer Game Culture from Geek to Chic*. New York: McGraw-Hill/Osborne.
- Krzywinska, Tanya. 2006. "Blood Scythes, Festivals, Quests, and Backstories: World Creation and Rhetorics of Myth in *World of Warcraft*." *Games and Culture* 1(4):383–96.
- Kurzweil, Ray. 1999. *The Age of Spiritual Machines: When Computers Exceed Human Intelligence*. New York: Viking.
- . 2005. *The Singularity Is Near: When Humans Transcend Biology*. New York: Viking.
- Lanier, Jaron. 2010. *You Are Not a Gadget: A Manifesto*. New York: Alfred A. Knopf.
- Latour, Bruno. 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. New York: Oxford University Press.
- Leijon, Erik. 2011. "The Transhuman Factor." *Montreal Mirror* (August 18). <http://www.montrealmirror.com/wp/2011/08/18/cover-the-transhuman-factor/>.
- Lester, John. 2011. Skype Phone Interview with the Author (December 6).
- LookingGlass93. 2010. Posting on "*ME2* and Transhumanism" thread at BioWare Social Network. <http://social.bioware.com/forum/1/topic/105/index/1556956/1>.
- Love, Mark Cameron. 2010. "Not-So-Sacred Quests: Religion, Intertextuality and Ethics in Video Games." *Religious Studies and Theology* 29(2):191–213.
- Madisk. 2010. Posting on *ME2* and Transhumanism thread at BioWare Social Network. <http://social.bioware.com/forum/1/topic/105/index/1556956/3>.
- Marsen, Sky. 2011. "Playing by the Rules—or Not?: Constructions of Identity in a Posthuman Future." In *H±: Transhumanism and Its Critics*, eds. Gregory R. Hansell and William Grassie, 84–93. Philadelphia, PA: Metanexus Institute.

- Milburn, Colin. 2008. "Atoms and Avatars: Virtual Worlds as Massively-Multiplayer Laboratories." *Spontaneous Generations* 2(1):63–89.
- Moravec, Hans. 1988. *Mind Children: The Future of Robot and Human Intelligence*. Cambridge, MA: Harvard University Press.
- . 1999. *Robot: Mere Machine to Transcendent Mind*. New York: Oxford University Press.
- More, Max. 2003. "Principles of Extropy." Extropy Institute. <http://www.extropy.org/principles.htm>.
- Munkittrick, Kyle. 2011. "I Would Hope that Saner Minds Would Prevail': *Deus Ex: Human Revolution* Lead Writer Mary DeMarle on the Ethics of Transhumanism." Science Not Fiction—*Discover Magazine* (August 12). <http://blogs.discovermagazine.com/sciencenotfiction/2011/08/12/i-would-hope-that-saner-minds-would-prevail-deus-ex-human-revolution-lead-writer-mary-demarle-on-the-ethics-of-transhumanism/>.
- Nardi, Bonnie. 2010. *My Life as a Night Elf Priest: An Anthropological Account of World of Warcraft*. Ann Arbor: Michigan University Press.
- Newgren, Kevin. 2010. "BioShock to the System: Smart Choices in Video Games." In *Halos and Avatars: Playing Video Games with God*, ed. Craig Detweiler, 135–44. Louisville, KY: Westminster John Knox Press.
- Ortega, Joshua. 2012. E-mail Interview with the Author (June 2).
- Pacotti, Sheldon. 2012. E-mail Interview with the Author (April 15).
- Peake, Alex. 2012. E-mail to the Lifeboat AI listserv (February 4).
- Rhun. 2012. Respondent to Online Survey on Transhumanism and Video Games.
- Rohrer, Jason. 2008. "Game Design Sketchbook: *Immortality*." *The Escapist* (June 13). Available at <http://www.escapistmagazine.com/articles/view/columns/gamedesignsketchbook/4966-Game-Design-Sketchbook-Immortality>.
- . 2012. Personal Skype Interview with the Author (April 26).
- Rolston, Ken. 2009. "My Story Never Ends." In *Third Person: Authoring and Exploring Vast Narratives*, eds. Pat Harrigan and Noah Wardrip-Fruin, 119–24. Cambridge, MA: MIT Press.
- Rosedale, Philip. 2011. Personal E-mail Correspondence with the Author (April 7).
- Rothblatt, Martine. 2011. "From Mind Loading to Mind Cloning: Gene to Meme to Beme A Perspective on the Nature of Humanity." In *H±: Transhumanism and Its Critics*, eds. Gregory R. Hansell and William Grassie, 112–119. Philadelphia, PA: Metanexus Institute
- RPG.net. 2011. "[Debates on Transhumanism] *Deus Ex* Really Nailed It . . ." RPG.net (September 16). <http://forum.rpg.net/showthread.php?593205-Debates-on-Transhumanism-Deus-Ex-HR-really-nailed-it>.
- Seraph, Serendipity. 2010. Personal E-mail Correspondence with the Author (November 13).
- Stephenson, Neal. 1992. *Snow Crash*. New York: Bantam.
- Stock, Gregory. 2003. *Redesigning Humans: Choosing Our Genes, Changing Our Future*. New York: Houghton Mifflin Company.
- Suntzu, Khandrea. 2010. Electronic Mail Contribution to the Cosmic Engineers listserv (September 20).
- Sussan, Remi. 2010. Electronic Mail Contribution to the Turing Church listserv (April 26).
- Taran. 2012. Respondent to Online Survey on Transhumanism and Video Games.
- Teleria. 2011. E-Mail Interview with the Author (December 9).
- Tirosh-Samuelson, Hava. 2011. "Engaging Transhumanism." In *H±: Transhumanism and Its Critics*, eds. Gregory R. Hansell and William Grassie, 19–52. Philadelphia, PA: Metanexus Institute.
- Turkle, Sherry. 1996. "Rethinking Identity Through Virtual Community." In *Clickin In: Hot Links to a Digital Culture*, eds. Lynn Hershan Leeson, 116–122. Seattle: Bay Press.
- Turner, Fred. 2006. *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism*. Chicago, IL: University of Chicago Press.
- Vinge, Vernor. [1981] 2001. "True Names." In *True Names and the Opening of the Cyberspace Frontier*, eds. James Frenkel. New York: Tor.
- Vita-More, Natasha. 2010. "Epoch of Plasticity: The Metaverse as a Vehicle for Cognitive Enhancement." *Metaverse Creativity* 1(1):69–80.
- . 2011. Personal E-mail Correspondence with the Author (September 22).

Wertheim, Margaret. 1999. *The Pearly Gates of Cyberspace: A History of Space from Dante to the Internet*. New York: W.W. Norton & Company.

Wikipedia. 2012. "Deus Ex." Wikipedia.com. Accessible: [http://en.wikipedia.org/wiki/Deus\\_ex](http://en.wikipedia.org/wiki/Deus_ex).

## MEDIA REFERENCES

- Bible Adventures*. 1991. Wisdom Tree.
- Black & White*. 2001. Lionhead Studios.
- Deus Ex*. 2000. Ion Storm, Inc.
- Deus Ex: Human Revolution*. 2011. Eidos Montreal, Square Enix, Nixxes Software, and Feral Interactive.
- Deus Ex: Invisible War*. 2004. Ion Storm, Inc.
- EVE Online*. 2003. CCP Games.
- Final Fantasy VII*. 2007. Square Product and Development Division 1.
- Gears of War 2*. 2008. Epic Games.
- Halo*. 2001. Bungie Studios.
- Halo 2*. 2004. Bungie Studios.
- Halo 3*. 2007. Bungie Studios.
- Halo 3: ODST*. 2009. Bungie Studios.
- Halo: Reach*. 2010. Bungie Studios.
- Immortality*. 2007. Jason Rohrer.
- Left Behind—Eternal Forces*. 2006. Inspired Media Entertainment.
- Mass Effect*. 2007. BioWare.
- Mass Effect 2*. 2010. BioWare.
- Mass Effect 3*. 2012. BioWare.
- Metrod*. 1986. Nintendo (R&D1/Intelligent Systems, Retro Studios, and Nintendo Software Technology Corporation).
- Populous: The Beginning*. 1998. Bullfrog Productions.
- Singularity*. 2010. Raven Software.
- Space Invaders*. 1978. Taito Corporation.
- Transcendent Man*. 2009. Ptolemaic Productions and Therapy Studios.
- Ultima IV: Quest of the Avatar*. 1985. Origin Systems.
- Viking—Battle for Asgard*. 2008. The Creative Assembly.
- World of Warcraft*. 2004. Blizzard Entertainment.