


Article

‘Things Greater than Thou’: Post-Apocalyptic Religion in Games

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Abstract: In the literature on religion in games, two broad types of religion have been depicted: on the one hand, historical religions—Christian, Muslim and Buddhist narratives, tropes and symbols—and, on the other hand, fiction-based religion, referring to fantasy, myth and popular culture. In this article we aim to describe, analyze and explain the emergence of a new, unacknowledged repertoire. Building on two case studies—*Fallout 3* and *Horizon: Zero Dawn*—we argue that modern technology (computers, AI, VR, and androids) itself is becoming a sacred object of veneration in fiction, specifically in post-apocalyptic games that imagine man-made annihilation. Although the themes and topics differ, this emergent form of techno-religion in game narratives is generally located in a post-apocalyptic setting. Although they are fictitious, we conclude that such narratives reflect developments in real life, in which technology such as artificial intelligence is feared as an increasingly powerful, opaque force.

Keywords: post-apocalypse; video games; religion in games; *Horizon: Zero Dawn*; *Fallout 3*

Aloy: “Why are the lands beyond Nora territory called ‘tainted’?”

Teersa: “Is it not obvious? Our land is sacred. We live in sight of the one Goddess, All-Mother—source of all that lives. Beyond her sight lies a vast fallen land, spiritually tainted. That is why it is against tribal law to leave. But this blessing will protect you.”

1. Revelations of a New World

Video games allow us to imagine worlds beyond our own. Much like religions have offered us the ability to think beyond our mundane daily lives, turning on our computers or consoles can offer us a different world. The elective affinity between religion and games has not gone unnoticed in academia. On the one hand, it has been widely argued that games *function* as religion since, as Huizinga argued, “into the confusion of life it brings a temporary, limited perfection” (Huizinga 1970, p. 12). On the other hand, game texts are brimming with religious narratives, symbols, tropes and plots and are as such encoded with ‘ultimate meanings’ that are negotiated, reconstructed and reversed while playing (Schaap and Aupers 2017).

The traditional function of religion—ultimate meaning-making in the face of this-worldly illness, suffering and death (Weber 1948; Berger 1967)—thus becomes an important asset in game design (cf. Wagner 2012; Leibovitz 2014). Not always are game worlds and the narratives they display hopeful, however. This paper considers the case of the ‘post-apocalyptic’ game genre. How is such a deeply religious concept—the end of the world most closely associated with the eponymous New Testament book—made into a genre for entertainment, and what place does religion have within the post-apocalyptic worlds portrayed? Prompted by previous theorizations of religion in fictional media, we propose that in order to understand the way the post-apocalypse is treated in video games, we must

turn to ‘science fiction-based’ religion, a category of religious representation that falls beyond the scopes of history- and fiction-based religion. That is, while ample academic scholarship reflects on games’ representation of Biblical, Islamic and other historical religions, as well as on the fictional religions of *Skyrim* or Tolkien that are based on the fantasy genre, there is little attention given to a new kind of religiosity around technology, specifically in its dystopian, sometimes fearful guise (cf. Geraci 2012). Given the explorative nature of this study, we focus on game texts as source material, before looking at their players or developers: a game-immanent approach rather than an actor-centered one (Heidbrink et al. 2014; Zeiler 2018; Aupers et al. 2018; cf. De Wildt and Aupers 2018). By highlighting *Fallout 3* and *Horizon: Zero Dawn* as two popular, theoretically relevant case studies from the past 10 years, this paper will explore whether and how religion is represented in a world where society and humanity have been nearly, if not completely erased. In short, we will ask: How do video games present religion in the post-apocalypse and, particularly, how is religion positioned vis-à-vis future technologies in the game world?

2. Religion in Games: History, Fantasy and Future

Overall, the research on religion in games is concerned with recognizing religious beliefs in games: how religious beliefs occur; how ‘superempirical’ gods (and other entities) and their followers are represented; and how religious elements and narratives are incorporated in interactive worlds. In other words, ‘religion in games’ research studies the occurrence of religion in the narrative or representative content of games—or the “narratological” layer of games, for lack of a better term (cf. Aarseth 2001; Frasca 2003; Murray 2005; cf. De Wildt 2014; e.g., Bosman 2016). Examples abound. Scholars such as Vit Šisler employ cultural approaches to religion in order to identify how the Islamic faith and its followers have been represented differently in Western and Middle Eastern games (Šisler 2006, 2008, 2009); whereas Masso and Abrams have done the same for Judaism (Masso and Abrams 2014). Other research has focused more directly on how narratives from world religions are incorporated and changed by game designers, such as Robert W. Guyker’s analysis of *Journey*’s use of shamanistic tropes recurring throughout pre-modern and non-Western religions (Guyker 2014); and Bosman and Poorthuis’ tracing of the occurrence and adaptations of Lilith and the Nephilim (Judeo-Christian mythological characters) throughout Judaic, Christian, Islamic and occult literature as well as various games, each considered equally (Bosman and Poorthuis 2015).

While these research examples and their case studies draw on what Davidsen calls “history-based” religion, or conventional world religions that “claim to refer to events that have taken place in the actual world” such as the Christian Gospels (Davidsen 2013, p. 386), most games rely instead on fictional religions. We use the term “fiction-based” here as opposed to “history-based,” where the latter refers to long-standing religious practices such as Christianity, Islam, Hinduism and the other big world religions. The conceptualization of “fiction-based” and the contrast with history-based religions springs from the sociological literature on contemporary religious practices around modern fiction, such as Tolkien-based religions, Jediism, Matrixism and so on (Davidsen 2013; cf. Possamai 2005). Although this distinction is empirically and theoretically problematic from some societal perspectives, such as those that regard the Bible as potentially fiction just as much as other fiction is potentially sacred (cf. De Wildt and Aupers 2017), the distinction is helpful as an analytical construct. That is, it allows us to differentiate between established traditions vis-à-vis those religions that were made up for a modern fictional work, without diminishing how meaningful either can be.

2.1. Fantasy Fiction-Based Religion: A Strong Bias

Fiction-based religion is a staple in video games and provides frequent narrative background and ludic contexts to make games meaningful for players. Research by Tanya Krzywinska, for example, shows through a combination of ethnography and content analysis that the different fictional religious traditions in *World of Warcraft*—invented belief systems ranging from the monotheistic “Church of the Holy Light” to the kinds of totemic and animistic nature worship organized around fictional

deities—provide invaluable drama and cosmological conflict through the beliefs of non-playable characters and the narrative backgrounds of players' characters (Krzywinska 2006). More radically, Markus Wiemker and Jan Wysocki argue that 'god' games—where players take the position of the omniscient, powerful God of a society—draw from a wide array of cultural influences to shape their own alternative belief systems based on game-specific own morals, miracles and divine manifestations (Wiemker and Wysocki 2014).

However, as these and other case studies show, much work about in-game religion that is not grounded in established, history-based religions, is about fiction-based religion in games, particularly of the fantasy genre (e.g., Aupers 2007; Bainbridge 2013; Copier 2005; Fine 1983; Gregory 2014; etc.). In his essay "On Fairy Stories," the 'Father of Fantasy' J.R.R. Tolkien argues that there is a fundamental human need to imagine alternative fantasy worlds. In this essay, as much as through his own fictional work, Tolkien expresses a need for fiction to "enchant" us, to grant us recovery, escape and consolation from our daily lives (Tolkien 1939; cf. Curry 1999). Fantasy fiction-based religion in media texts—films, series and games—may be considered a product of the romantic imagination. Born from the work of Tolkien, fantasy can be categorized as "deeply nostalgic [. . .] an emotionally empowering nostalgia" (Curry 2005, p. 126) or an "archaic nostalgia" (Jameson 1975, p. 161) for a world that is infused with spiritual values, meaning, magic and enchantment. Indeed: the imaginary past in which fantasy fiction-based religion is set, presupposes the omnipresence of religion, magic, and beliefs in spiritual forces in nature. Alongside historical religions, fantasy thus also presents religious worlds as something romantic, and deeply nostalgically associated with rural, pseudo-medieval and magical pasts.

Tolkien practiced what he preached. Middle Earth, the location of his trilogy *Lord of the Rings*, which was first published in 1954, is both fantastic and realistic, both mythical and rational, and is by far the most influential work in the fantasy genre. Its main narrative—featuring creatures like hobbits, elves, and wizards as main protagonists—is mainly based on Norse mythology and embraces a "polytheistic-cum-animist cosmology of 'natural magic'" (Curry 1998, p. 28). These 'pre-modern' religious worldviews are, Tolkien felt, important since "the 'war' against mystery and magic by modernity urgently requires a re-enchantment of the world, which a sense of Earth-mysteries is much better placed to offer than a single transcendent deity" (Curry 1998, pp. 28–29). Middle Earth, in short, was in part invented to counter modern processes of disenchantment but, ironically, became fully embraced by the modern world since the 1960s. The literary work and mythopoeic approach of Tolkien also spilled over to the game industry and became, as such, a typical example of a "transmedial" phenomenon (Jenkins 2006). Myth-making, in the context of computer games, became a matter of technical design. Turkle argues: "The personal computer movement of the 1970s and early 1980s was deeply immersed in Tolkien and translated his fantasy worlds into hugely popular (and enduring) role-playing games" (Turkle 2002, p. 18). Indeed, Tolkien died in 1973, but around that same time his enchanting world was reproduced in cyberspace. In 1976 a Stanford hacker, Donald Woods, and a programmer, Will Crowther, developed *Adventure*, the first text-based role-playing game on the computer. *Adventure* "turned out to be one of the most influential computer games in the medium's early history" (King and Borland 2003, p. 31). An important shift came in the 1980s when Trubshaw and Bartle developed the 'Multi-User Dungeon' (MUDs) that made it possible to collectively explore this textual world. Between the end of the 1970s and the beginning of the 1990s, text-based role-playing games and MUDs were booming. Some examples that are directly derived from the work of Tolkien are *The Shire* (1979), *Ringin* (1979), *Lord of the Rings* (1981), *LORD* (1981), *Ring of Doom* (1983), *Ringmaster* (1984), *The Mines of Moria* (1985), *Bilbo* (1989), *The Balrogonian trilogy* (1989) and *Elendor* (1991). In 1996 and 1997, respectively, *Diablo* and *Ultima Online* were launched on the Internet—the latter generally understood as the first three-dimensional Massively Multiplayer Online Role Playing Games. In the last decade such fantasy games became immensely popular, whether multi- or single-player. Well-known examples are *Everquest* (1999), *Asheron's Call* (1999), *Dark Age of Camelot* (2001), *World of Warcraft* (2004), *Lord of the Rings Online* (2007), *The Elder Scrolls* series including the hit *Skyrim* (2011) and the MMO *TES:O* (2014), the *Dragon Age* series, most recently titled *Inquisition* (2014), and so on—all

of which, without exception, harken back to a faux-medieval Tolkienesque fantasy world of religion and enchantment.

2.2. Science Fiction-Based Religion: A Blind Spot

The focus on fantasy in academia, we argue, blinkers other, unacknowledged genres that constitute fiction-based religion in games. As opposed to fantasy fiction, science fiction narratives present futuristic universes devoid of religious meaning. Indeed: tapping into current trends and extrapolating these to the future, sci-fi worlds *seem* to be dominated by scientific reasoning instead of faith and technological practices, methods and artefacts instead of magic. More than anything else, science fiction would seem to exemplify the “disenchantment of the world” (Weber 1948). To paraphrase Max Weber, like in the real world, in futuristic sci-fi universes such as *Star Trek*:

“One need no longer have recourse to magical means to master or implore the spirits, as did the savage, for whom such mysterious powers existed. Technical means and calculation perform the service” (Weber 1948, p. 139)

Such (evolutionary) arguments about rationalism, science, and technology as an “irreligious power” (Ibid., p. 142), are deeply institutionalized in the social sciences, and may account for the fact that debates on fiction-based religion generally show a bias towards the fantasy genre and a blind spot for the sci-fi genre.

Notwithstanding countless recent studies showing that the dichotomy science/technology versus religion is theoretically and empirically problematic (e.g., Latour 2012; Noble 1999; Davis 1998), particularly since the cultural logic of modernization spawns its own religions, spiritualities and magical re-enchantments (Aupers and Houtman 2010), there are ample indications that the science fiction genre is infused with religion, myth and magic. Much of the golden age of sci-fi between the 1930s and the 1970s was utopian, informed by a typical modern belief in scientific progress, space exploration and technological control over nature; if religion was mentioned, it was generally depicted as an outdated, irrational uncivilized worldview (Bleiler 1990; Fitting 2010). The genre of cyberpunk—allegedly pioneered by Philip K. Dick in the 1970s (Davis 1998), and developed by Vernor Vinge, William Gibson and Neal Stephenson in the 1980s and 1990s (Cavallaro 2000), we argue, exemplifies an important shift in which science fiction opens up to religion, magic and enchantment. More fundamentally, we theorize, science fiction-based religions indicate a radical and unacknowledged ontological shift in the perspective on religion: religious, spiritual or occult phenomena are no longer located in nature (as in history- or fantasy-based religion), but in the man-made technological world.

What, then, was the role of the cyberpunk genre in the formation of science fiction-based religion? It is already a mainstay in literature that cyberpunk both reflected emergent technologies in the 1980s—information and communication technology, virtual reality, Artificial Intelligence—and influenced it (Dery 1996). The key element is virtual reality. Inspired by observations in an arcade hall and predating the World Wide Web, William Gibson dubbed the term ‘cyberspace’ in his novel *Neuromancer* (1981) to signify a digital space opened up by connected computers or, rather: “a tailored hallucination” promising the “bodiless exultation of cyberspace” to its consumers. Alternatively called “the Other plane” (by Vernor Vinge in 1981) and “the metaVerse” (by Neal Stephenson in 1993), the man-made ontology of cyberspace became the pinnacle of the religious imagination in cyberpunk and beyond. As an immaterial space beyond time and place, it was considered in the 1990s as “metaphysical space” (Heim 1993), “new Jerusalem” (Benedikt 1992, p. 14) and a “paradise where we will be angels” (Stenger 1992, p. 52). As one of the protagonists in Gibson’s later novel *Mona Lisa Overdrive* speculated about the omnipresence and opacity of cyberspace: “Is the Matrix God?”

This religious imaginary is not restricted to the ontology of cyberspace. At the heart of the cyberpunk narratives, we find the assumption that our human life-world, including our virtual environment, is totally permeated with autonomous technologies to the extent that people can no

longer make valid distinctions between reality and fantasy; humans and AI; technology and magic. “Cyberpunk,” Cavallaro argues in this respect, “charts an ambivalent mythopoeia in which new forms of life are seen to emerge from technology and, at the same time, the digital universe is permeated by mysticism and occultism” (Cavallaro 2000, pp. 53–54). Characters in cyberpunk novels constantly encounter creatures and entities that may be either artificially intelligent or spiritual. Case, the protagonist of Gibson’s *Neuromancer*, for instance meets ‘Flatliner’—a deceased hacker haunting cyberspace—and his digitally reincarnated girlfriend Linda. Gibson’s second novel, *Count Zero*, introduces the Loa—voodoo-gods that appear, send messages and disappear again. Are they Gods or malicious programmes? Indeed: in Neal Stephenson’s *Snowcrash*, artificial intelligences are ‘speaking in tongues’—instigating religious viruses amongst the passive population.

This hovering between technology and spirituality—or more specifically the framing of powerful and opaque technologies as themselves religious or enchanting—is a key feature of cyberpunk novels in the 1980s and 1990s. This science fiction-based religion has gone mainstream ever since. Hollywood blockbusters—from *The Lawnmower Man* (1993), *ExistenZ* (1999), *The Matrix* (2000) to *Transcendence* (2014), increasingly feature the message that, while nature may be under the control of humans, “technology is God” (Dinello 2005).

3. Post-Apocalyptic Religion

Science fiction-based religion, then, from cyberpunk novels to Hollywood blockbusters, seems to indicate an ontological turn from the sacred situated in nature to the sacred situated in technology. Notwithstanding the ‘disenchantment of the world,’ omnipotent and opaque technology invokes religious imaginary that is by and large unacknowledged in the literature. This brings us to our case-studies. If the cyberpunk of the 20th century dealt with 20th-century concerns of ‘virtual reality’ and computer viruses in a religious-spiritual way, how does the science fiction of the 21st century deal with 21st-century concerns about technology? This paper selects two case studies featuring a post-apocalyptic world: the 1950s ‘atompunk’ setting of *Fallout 3* and the faux-prehistorical ‘stonepunk’ of *Horizon Zero Dawn*. The analysis is guided by the question: How do video games present religion in the post-apocalypse and, particularly, how is religion positioned vis-à-vis future technologies in the game world?

The question is motivated by two concerns, based on the theoretical framework above. First of all, science fiction-based religion places the sacred in an often dystopian future, rather than in a fantastical or historical past. Secondly, science fiction-based religion places the sacred into the technological, rather than the (super)natural. As a consequence, these dystopian futures are often motivated by a fear of the potential of technology. In line with this, post-apocalyptic games such as *Fallout* and *Horizon* invariably show a world destroyed by man-made technological disaster. *Fallout 3*, released by Bethesda in 2007 to great acclaim, shows a world destroyed by the atomic bomb, filled with robots still running (over 200 years after being manufactured) on atomic energy, but with only small pockets of humans left to inhabit the earth alongside them. *Horizon: Zero Dawn* takes place 1000 years after the invention of ‘Biomatter Conversion’—the ability for machines to infinitely reproduce and fuel themselves by consuming grass, humans and other animals—causes the apocalypse, in which small tribes populate an earth dominated by self-reproducing robots and rare wildlife. Both games revolve around humans, including the player, coping with the dominance of these technological inventions in a world where humans face near-extinction.

3.1. *Fallout 3*: “Why Do You Worship the Bomb?”

Confessor Cromwell: “The Church of the Children of Atom is based on the idea that each single atomic mass in all of creation contains within it an entire universe. When that atomic mass is split, a single universe divides and becomes two—thus signifying the single greatest act of Atom’s creation.

Occasionally, a divine event occurs and trillions upon trillions of new universes are created. The last such event took place here, 200 years ago. Where most of the lost children of Atom see that event as simple war and devastation, we see creation and unification in Atom's Glow."

Lone Wanderer [Player-character]: *Why do you worship the bomb?*

Confessor Cromwell: *"Those who were called to Atom during the Great Division were very fortunate. They were permitted to aid in the process of Atom's creation. We seek the same, both in symbol and in fact and the 'bomb,' as you call it, represents Atom's capacity for creation. We kneel before it and ask that Atom call us to aid him. We pray that out of our meager bodies, he will create new life."*

The year is 2277 AD. Exactly 200 years ago, the United Nations was dissolved, China occupied Alaska and the USA have annexed Canada. The year 2077 brings about a worldwide nuclear war that destroys most of the important human settlements around the world. The *Fallout* series is staged in an alternative historical timeline after the fallout of a nuclear war between China and the USA. The sociocultural context surrounding this war is that of a society that has kept the culturally conservative aesthetic of the 1950s but developed different technology with the help of its newly found nuclear energy supply. The envisioned world places uranium at the center of societal change, as the most important human resource and the main reason for a full-scale global conflict.

In this context, the game assigns two key figures as symbols of the world's technological advancement: artificial intelligence (especially robots) and the atomic bomb. The *Fallout* games develop these technological artifacts and weave them into their main storylines, where they come to take completely different positions in society. While both robotic developments and missiles are created with the help of nuclear power, the rocket symbol attains a more sacralized position in this society's post-apocalyptic development. Most typically, we see this in the emergence of the "Church of the Children of Atom." Their worship of atomic energy is not ostensibly a religion rooted in a long tradition, but is fundamentally part of a traumatizing contemporary reality: an undetonated warhead in a world destroyed by atomic bombs.

Nuclear power, deified as Atom, is worshipped to have destructive and metamorphic, cleansing properties: "We must suffer to truly feel Atom's embrace, to lay broken before Him, and feel the gentle wash of the Glow." While the pre-existing, pre-apocalyptic religions are practically extinct, the Church of the Children of Atom is a post-war religious cult that worships 'Atom' as their singular divine agent, which is omnipresent, omniscient and omnipotent. Atom is everywhere, knows everything, and has the power to affect the properties of different bodies in the world. As the game's loading screen—which acts as a type of narrator, normally dispensing game-play tips and lore from an extra-diegetic, objective perspective—occasionally explains: "The Church of the Children of Atom believe the war of 2077 was actually a great holy event perpetuated by their god, Atom."

Starting with *Fallout 3*, the player is introduced to Church of the Children of Atom in Megaton—not coincidentally also the name for an explosive measurement unit. The town, which is likely one of the first that players encounter (cf. [Bainbridge 2016](#)), is host to an undetonated atom bomb, discovered by survivors in the wasteland of what was formerly Washington, D.C. Megaton was built around the bomb, which the inhabitants came to fear, respect and eventually worship (Figure 1). The centrality of this religion to Megaton can most literally be seen through its map location, at the center of the settlement (Figure 2). Town and Church are effectively led by Confessor Cromwell, who can be seen in Figure 1 preaching Atom's power to all who can hear:

"Give your bodies to Atom, my friends. Release yourself to his power, feel his Glow and be Divided.

Yea, your suffering shall exist no longer; it shall be washed away in Atom's Glow, burned from you in the fire of his brilliance.

Come forth and drink the water of the glow. For this ancient weapon of war is our salvation, it is the very symbol of Atom's glory. Let it serve as a reminder of the division that has occurred in the past."

Here, Atom is said to come and divide our cells, ending our earthly suffering. Atom is present anywhere, from the "infinite worlds" inside our every cell, to the huge radiation storms, powerful ecological consequences of the nuclear fallout that plagues the wasteland. Thus, the Church was created and fortified in Megaton where its first settlers took shelter in the crater in the 23rd century—and it has spread across the United States since then, as the appearance of the Church attests to in various places in *Fallout 4*, which takes place barely 10 years later.



Figure 1. Confessor Cromwell preaching and praying next to the atom bomb.



Figure 2. Megaton's map (*Fallout* Wikia n.d.).

Fallout 3 presents a world in which the near-complete destruction of human civilization means that most scientific and traditional institutions have disappeared. After the apocalypse, the raw power of nuclear energy can only be understood as phenomenal. Additionally, the disappearance of any necessary knowledge of nuclear power—most appliances from before the apocalypse still work—makes it into a magical, incomprehensible power. Its destructive potential can only be imagined, while its altering effect on mutated humans and animals can still be seen. While the Church of the

Children of Atom deifies this potential, *Fallout 3* contrasts it with another religious institution, that of a more romantic spiritual cult, the Treeminders. The Treeminders are a community in Oasis—an immediate visual opposite to Megaton: verdant, sprawling and multi-levelled. It can only be accessed through an arduous and hidden mountain path. There, rather than a loudly preaching Confessor Cromwell at the center of Megaton, stands a soft-spoken Tree Father Birch, who guards the entrance and invites the player inside. The two religions even act as symmetrical gameplay options, in that the player has the option to fully destroy either town (cf. Bosman 2017), Oasis and Megaton, to violently erase the worship of these antithetic gods (destruction vs. creation).

As opposed to Atom, the Treeminders deify nature, embodied in the shape of ‘The Great One,’ a talking tree. The Great One—or as he’s also called The Lord, Him, The One Who Grows, Gives, and Guides, and The Talking Tree, or simply Harold – is the product of a retrovirus exposure that was supposed to create resistance to radiation but instead created mutated humans. The retrovirus’ effect on Harold is that a tree started growing out of him until he became one with it (Figure 3).

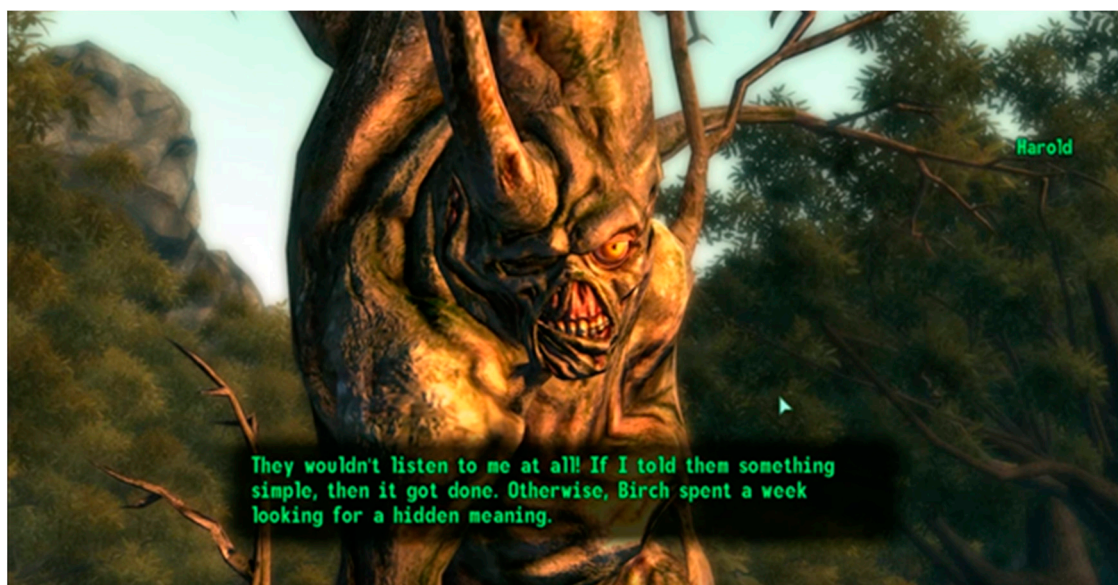


Figure 3. Harold, The One Who Grows, Gives and Guides, talking to the player.

Harold, however, has no pretensions of being a god and is not happy with the cult’s veneration of him. His mutations gave birth to the entire forest of Oasis, an achievement considered a miracle in the destitute Wasteland. On a ludic level, the player can decide to let the tree die (a wish expressed by Harold as well) and completely destroy the last kernels of this spiritual and romantic cult; or instead to let him selflessly live to create new forests. Whereas nature was killed by the atom bomb (the god of the Children of Atom), the initial retrovirus that was supposed to make humans resistant to Atom’s radiation fights back through Harold.

In the more recent *Fallout 4*, the Church of the Children of Atom is now present in a totally irradiated environment, The Glowing Sea (Figure 4). Upon meeting the leader of the cult’s base in the Glowing Sea, players may ask “Holy Ground? Atom? What’s going on here?” The explanation is that “Atom reached out and touched this world, bringing his Glow to us. It remains to this day, a reminder of his promise. Infinite worlds through division.” The survival of the cult in the normally instantly fatal environment is rationalized as being a supernatural gift:

“That is Atom’s unique gift to us, the true believers.

He has brought us here to this place, a place that cannot harm us, so that we may worship him. So that we may spread his word to others.

That is our calling. To deliver Atom's message to a world that does not wish to hear it. To show Atom's power to all."



Figure 4. Atom's place of worship, next to a radiated water crater, in the Glowing Sea.

In the *Far Harbor DLC*, players can join the church after completing a quest that resembles an initiation ritual, to seek the "Sacred ELEMENTS, guide to Atom's HOLY word" (Figure 5), which turns out to be the Periodic Table (Figure 6). Upon doing so, players meet The Mother of the Fog, the Children's spirit leader sent from Atom to guide them. The MoThEr (Figure 7) spirit is the figure shrouded in mist (atomic glow) who passes down Atom's will and guides the player to the periodic table, their Bible.

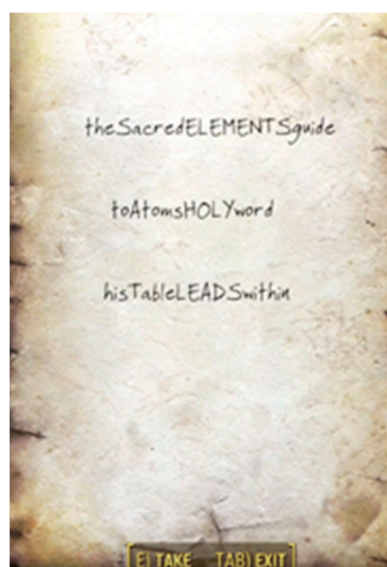


Figure 5. The scroll that guides believers to Atom's "HOLY word."

In all, the *Fallout* games imagine a world destroyed by nuclear war in which previous institutions, religious and otherwise, have been destroyed. In this context, one of the first settlements the player of *Fallout 3* encounters is Megaton, where one religious group is central. This group, the Church of the Children of Atom, worships Atom: a masculine, incomprehensibly opaque deification of atomic power. Atom is presented as omnipresent, omniscient and omnipotent and is worshipped by building

a religion around an undetonated nuclear bomb (in *Fallout 3*) and later by expanding church sites to irradiated lands (*Fallout 4*). In its reverence of atomic power, exemplified through the glorification of the periodic table, ideas of division and theories of atoms found “within” everything, the Church presents a parody of a contemporary ‘science—religion’ divide in popular culture. Even its direct contrast, the religion of the Treeminders, which opposes the Children of Atom thematically (revering nature instead of science), should be seen as a way of dealing with the consequences of man-made nuclear fall-out through religious metaphors. Both, importantly, appear possible only against the background of the total erasure of previous historical religious institutions.

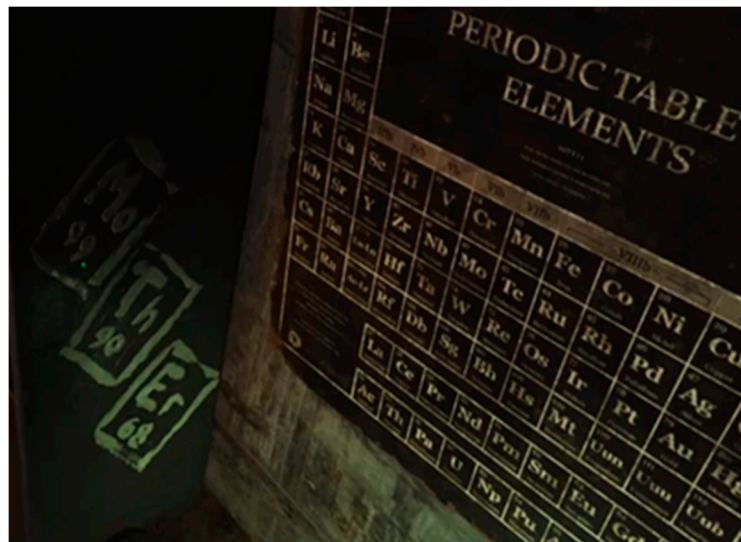


Figure 6. The Periodic Table that serves as the holy text of the Church of the Children of Atom.



Figure 7. The MoThEr aids the player in their quest to become a member of the Church of the Children of Atom.

3.2. Horizon: Zero Dawn, “Mother Nature as an AI and the Ultimate Killer App”

Elisabeth Sobeck: “What if we could give life—a future? What if we could build a kind of seed, from which, on a dead planet, life could blossom anew? This is the aim—the hope—of Project: Zero Dawn: to create a super-intelligent, fully-automated terraforming system—and bring life back from lifelessness. What would such a system require? At its core, it would need a true AI. Fully capable

of making the trillions of decisions necessary to reconstitute the biosphere. An immortal guardian, devoted to the re-flourishing of life. We call it GAIA. Mother Nature as an AI."

Another recent game that explores technology through several religious metaphors is *Horizon: Zero Dawn*. The storyline of *Horizon* revolves around a post-apocalyptic world set in the 31st century, wherein human life as we know it has gone extinct. The old civilization created (military) machines, technology, and AI that became uncontrollable, got corrupted, and went completely haywire thereby consuming biomass and destroying all life on earth in the process.

In a last attempt to save the earth, a small group of programmers, scientists and scholars developed an independent AI system called GAIA that is tasked with recreating a sustainable earth and biosphere. GAIA consists of several subsystems with names such as HADES, ARTEMIS, DEMETER, and so on, each with their own function to rebuild (human) life on earth in the future. The diegetic setting for the 31st century, however, is a world dominated and ruled by overdeveloped machines that are on top of the food chain and that become increasingly dangerous and destructive. Humans, on the other hand, find themselves somewhere at the bottom of the food chain. Once more they live in what appear to be 'pre-historic' tribes where they try to survive as hunters and gatherers. In this setting, the player controls and leads a young woman named Aloy through the game world to protect her tribe against hostile tribes and to unravel the truth about a long lost civilization, called the Old Ones – to be equated with current, contemporary American civilization (the game takes place more specifically around Colorado Springs).

Not only the living conditions of humans are reduced to pre-historic manners and lifestyles, some of the tribes also rely on rather primitive forms of religion. The religion of Aloy's tribe, which frames much of the game from beginning to end, is one of matriarchal monotheism centered around technology and AI. Unbeknownst to the fictional characters due to a total loss of knowledge regarding technology, what they are glorifying as a Goddess was once human-made. The tribe in question, the Nora, are controlled by matriarchs; whereas the primary antagonists make up a predominantly male, militaristic cult called the Eclipse, who fittingly worship a subsystem called HADES.

The Nora worship what they consider to be a goddess, namely "All-Mother." In the mission 'Mother's Heart,' however, it immediately becomes clear for the player and Aloy that All-Mother is nothing more than a huge mechanical door controlled by an AI that 'speaks' with a female-like computer-generated voice (Figures 8 and 9). To many modern players, the All-Mother immediately reminds them of our contemporary voice interfaces: not much more than a door-guarding version of Apple's *Siri* or Amazon's *Alexa*. The door is hidden deep within a mountain that is considered to be sacred ground and is therefore forbidden territory for all Nora except the matriarchs. Although Aloy understands at first glance that the goddess is a door, the matriarch accompanying her is convinced that the door is divine and cannot comprehend, nor is willing to believe, that her goddess is human-made.

The same counts for the Eclipse who worship the main antagonist of the game, a metal devil called "HADES" that communicates with a male-like computer-generated voice. In the mission 'Deep Secrets of the Earth' it is called "the ultimate killer app" by its maker as HADES' original function was to reset the earth in case GAIA's attempts of creating a new sustainable world resulted in failure: "HADES takes the biosphere back to 0, square one, a clean slate. [...] It is extinction on demand, death on speed dial." In the mission 'To Curse the Darkness' it is revealed that the Eclipse believe HADES is a god and, therefore, they execute his commands. These encompass the (re)assembly and the repair of killer machines; as well as the assassination of Aloy, making HADES the prime antagonist. In doing so, his cult-followers believe that HADES will eventually help the Eclipse in controlling and commanding the dangerous machines roaming the wildlands so they can use these machines to conquer the world. They do not realize that HADES controls and uses them with the goal of causing another apocalypse that will destroy humanity once and for all—including them.



Figure 8. Aloy tries to explain to a matriarch that All-Mother is actually a door.



Figure 9. Aloy in front of an activated “All-Mother”—a glorified, but artificially intelligent door lock.

Both the All-Mother and HADES, then, are confused for wise, utopian agents, even though their goals are clear and their algorithms do not encompass more than that. HADES is the “extinction failsafe protocol” for GAIA, the head AI charged with repopulation; the All-Mother is the Nora’s name for GAIA’s digital door-guard. Machines and extremely intelligent AI have thus become so incomprehensible for 31st-century humans that they are considered to be gods and goddesses and are worshipped with utter devotion.

The metaphor of gods and goddesses for AI and machines is taken one step further as the player discovers more of *Horizon’s* plot. As mentioned in the first paragraph, the previous civilization (Old Ones) realized that humanity would go extinct and, in one last attempt to save the earth and some form of life in the future, they created GAIA:

“A super intelligent, fully-automated terraforming system. [. . .] [a] true AI. Fully capable of making the trillions of decisions necessary to reconstitute the biosphere. An immortal guardian, devoted to the re-flourishing of life. We call it GAIA. Mother Nature as an AI.”

The religious metaphor already comes to the fore in the names given to GAIA's subsystems, all based on the names of ancient Greek gods and goddesses (Figure 10; Table 1): APOLLO, DEMETER, POSEIDON, and so on. Additionally, it is evident in their functions. For instance, in the mission 'The Heart of the Nora' the player and Aloy discover that after the apocalypse, humanity was recreated by one of GAIA's subsystems and machines in cradle facilities called ELEUTHIA, after the Greek goddess of childbirth and midwifery. In these facilities the genetic codes of the Old Ones are preserved and used to breed new human beings. The machines are programmed in such a way that they can nurture these new humans into fully-grown adults that are able to procreate themselves and the facilities are equipped with anything needed to sustain these new human beings ranging from food, toys, and even an internal educational system called APOLLO that was supposed to teach humans everything about the extinct civilization (Figures 11 and 12).

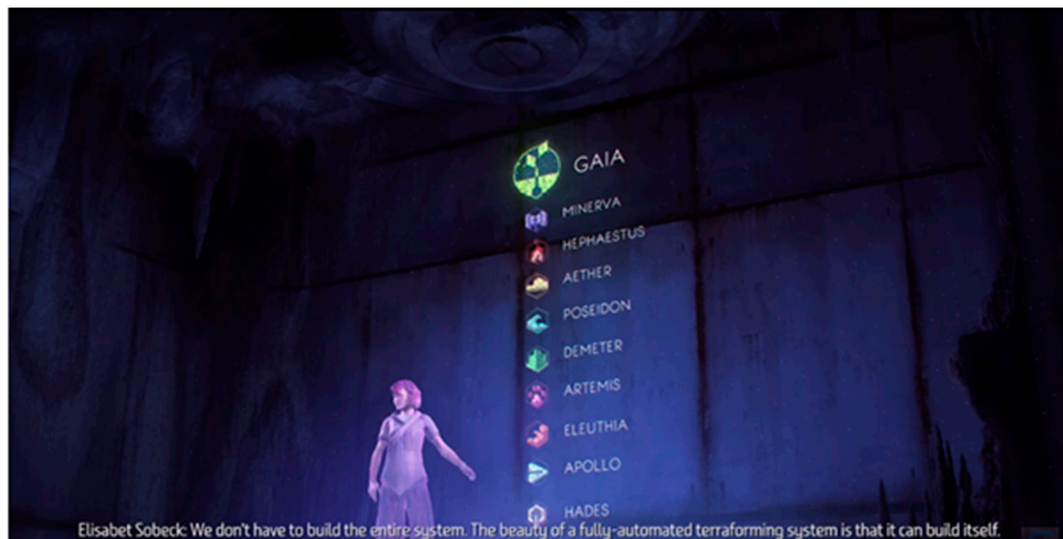


Figure 10. GAIA and her subsystems named after Greek gods and goddesses, and one Roman goddess.

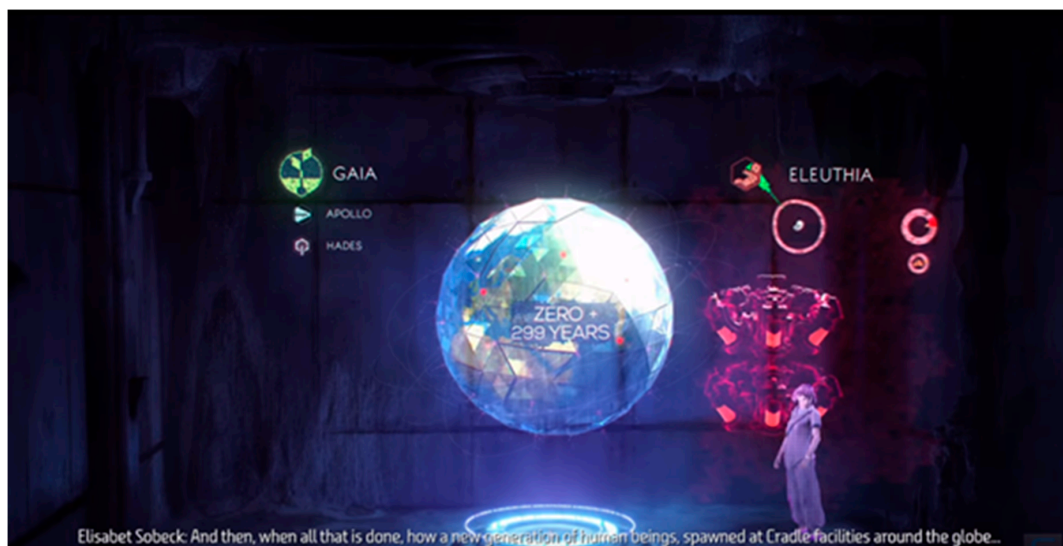


Figure 11. A hologram explains to Aloy and the player how cradle facilities (ELEUTHIA) work.

Yet, AI and machines are not only capable of assembling human beings and recreating the biosphere. Even before the apocalypse, the AI of machines was developed enough to learn how to make themselves more powerful and how to "procreate." As these systems were developed without a

backdoor in their programming, the Old Ones called destruction upon themselves as they could not stop the machines from reproducing, and feeding on bio-matter from plants to animals to humans. This process continues after the apocalypse. As a result, so-called “machine cradles” are scattered throughout *Horizon’s* game environment. These machine cradles function as factories wherein new machines are assembled and programmed. In this way, the survival of the murderous machine population is guaranteed.

Table 1. An overview of the most important AIs and their primary mythological origins (*Horizon Zero Dawn* Wikia n.d.; Smith 1872; Grimal 1996).

AI	Description	Mythology
AETHER	AETHER is the subfunction of GAIA dedicated to detoxifying the Earth’s ravaged atmosphere.	Personification of the upper sky.
APOLLO	APOLLO is the subfunction dedicated to the archival of human history and culture, and the education of new generations of humans born in Cradle facilities.	Greek god of the sun and light, music, truth and prophecy, healing, poetry.
ARTEMIS	ARTEMIS is the subfunction dedicated to the creation and reintroduction of animal life onto a newly-terraformed Earth.	Greek goddess of the hunt, wild animals, wilderness, childbirth, virginity and protector of young girls.
DEMETER	DEMETER is the subfunction dedicated to the replanting of the Earth from cryopreserved seed stocks.	Greek goddess of the harvest and agriculture
ELEUTHIA	ELEUTHIA is the subfunction dedicated to the cloning and raising of humans from genetic stock at specially designed and prepared Cradle facilities scattered across the Earth.	Greek goddess of childbirth and midwifery.
GAIA	GAIA is the main A.I. overseeing repopulation of the earth. GAIA and her subordinate functions are tasked with re-terraforming the Earth back to its pre-apocalyptic state.	Personification of the Earth.
HADES	HADES is the “extinction failsafe protocol”—the last resort for GAIA, which would allow it to destroy and reset the terraforming process when an undesirable outcome is detected.	Greek god of the dead, of the Underworld, darkness, the Earth, fertility, riches, mortality, afterlife and metal.
HEPHAESTUS	HEPHAESTUS is the subfunction dedicated to the construction of underground Cauldron facilities that would build the machines needed to complete the terraforming project.	Greek god of blacksmiths, metalworking, carpenters, craftsmen, artisans, sculptors, metallurgy, fire, and volcanoes.
MINERVA	MINERVA is the subfunction dedicated to the construction of massive communications arrays to broadcast the deactivation codes to the berserk apocalyptic robots.	Roman goddess of wisdom and strategic warfare.
POSEIDON	POSEIDON is the subfunction dedicated to detoxifying the Earth’s poisoned seas and oceans.	Greek god of the Sea and other waters; of earthquakes; and of horses.

Thus, machines and AI are not only incomprehensible and destructive, but also more powerful, productive, and creative than humans. The old civilization could not save itself from the machine-apocalypse and had to rely on AI, subsystems, and machines to safeguard the existence of a possible future humanity and to recreate life on earth. In the same way, humans in the 31st century are only able to exist because they were created by machines in special cradles facilities controlled by a powerful, overarching AI system and subsystems. In that sense, humans no longer dominate and control life, AI and the machines they once created and developed, but it is AI and machines that are in the position to sustain or destroy the biosphere and life in general.

Finally, although some humans like Aloy by accident come to use technological objects, it is a world that has fundamentally come to fear technology. At the same time, the name Aloy itself echoes an alloy, any combination of two metal materials—just as the player controls the cyborg combination

of Aloy's body and the technological projections of the 'focus'. A Focus is a small augmented reality device that Aloy finds at the beginning of the game, which can provide wearers with a multi-purpose 3D neural interface and communication possibilities (Figure 13). These small devices were developed by the Old Ones to simplify interactions between humans, and with machines, technology. They react to the voice and gestures of the person using the device—much like a fictionalized Google Glass. In one of the first playable parts of the game, Aloy finds a Focus in the ruins of what once used to be a workplace or bunker of the Old Ones. This little device is then used by Aloy and the player to discover relevant and interesting objects in the game environment, to scan documents and holograms left by the Old Ones, and to distinguish between friends and foes. However, as these ruins are considered to be cursed by the Nora, the little device is also seen as something dangerous. On the other hand, among the Eclipse, the Focuses have a divine connotation as these are given to them by HADES and the devices allow them to communicate with each other, as well as directly with HADES.



Figure 12. A hologram explains the educational APOLLO archive.



Figure 13. Aloy as a child with her "Focus" (the little triangular device above her ear).

Horizon: Zero Dawn thus portrays a post-apocalyptic world in which technology, machines, and AI are worshipped and feared by human tribes for two main reasons. On the one hand, AI, machines and technology are more intelligent, developed, creative, and powerful than humans. On the other hand, AI, machines, and technology are opaque and incomprehensible: humans lack the historical and technological knowledge to understand these inventions—resorting to worship their power in ignorance.

4. Conclusions

The fictional worlds of both *Fallout* and *Horizon* show similar imaginations of how to deal with technology: through metaphors of divinity. In the *Fallout* series, the Church of the Children of Atom substantially deifies the Atomic bomb, personifying it as a masculine god that is incomprehensible, everywhere, all-knowing and all-powerful. This “ancient weapon of war is our salvation,” and shall usher in a time through the “fire of his brilliance”—playing on both meanings of brilliance as intelligent and glowing—in which you may “release yourself to his power, feel his Glow and be Divided.” Rather than just being one possible imagination of religion in the post-apocalypse, the Children of Atom show a deeply familiar way for human societies to deal with the incomprehensible, omnipresent, omniscient and omnipotent nature of ‘Atom.’ This conception of Atom by the Church as such echoes many divine descriptions in the Bible such as Psalm 145:17, describing the god of Abrahamic traditions as “righteous in all his ways, and faithful in all he does.” It additionally mirrors the Biblical God’s supposed *omnipresence* (Psalm 139:7–10; Jeremiah 23:24; 1)—“Behold, heaven and the highest heaven cannot contain You, how much less this house which I have built” (Kings 8:27)—his *omniscience*—“His understanding is infinite” (Psalm 147:5) and he “knows all things” (1 Jn.3:18–20)—and his *omnipotence* (Rev.19:6; Eph.3:20):

“He is wise in heart and mighty in strength, who has defied Him without harm? It is God who removes the mountains, they know not how, when He overturns them in His anger; who shakes the earth out of its place, And its pillars tremble; who commands the sun not to shine, and sets a seal upon the stars; who alone stretches out the heavens and tramples down the waves of the sea; who makes the Bear, Orion and the Pleiades, and the chambers of the south; who does great things, unfathomable, and wondrous works without number.” (Job 9:4–10)

How similar in strength and scope is the discourse on Atom?

“Behold! He’s coming with the clouds! And every eye shall be blind with his glory! Every ear shall be stricken deaf to hear the thunder of his voice!

Each of us shall give birth to a billion stars formed from the mass of our wretched and filthy bodies.”

Even when we contrast the Church of the Children of Atom to their obvious counterpart, the role of religion in making sense of the post-apocalypse becomes clear. That is, whereas the Treeminders form a Church based on nature instead of science—worshipping a forest, rather than the periodic table—and on creation instead of destruction. Both are ways of coping with man-made disaster, and the atomic power that led to the barren post-apocalyptic wasteland of *Fallout*. More importantly, both are specifically new, uniquely technology-driven ways of coping with the apocalypse that are enabled only after the erasure of pre-existing institutions and traditions of worship after the fallout.

In *Horizon: Zero Dawn*, too, we see a similar situation. The Nora and Eclipse both worship and follow leftover, pre-apocalyptic inventions of Artificial Intelligence because they are incomprehensible to their primitive societies. They *seem* wise, but the game provides little reason for why the Nora and Eclipse started following them. Similarly to *Fallout*, these technological innovations are presented to post-apocalyptic humans as incomprehensible, destructive *and* creative, powerful *and* productive;

all of which seem to lead to no other choice within these fictional worlds than to worship them. The machines of *Horizon: Zero Dawn*, much like Atom and the Treeminders' deified Harold, were both misunderstood but nonetheless seen as creators and controllers of life: incomprehensible, omnipresent, omniscient and omnipotent.

We argue that these games show religious faith and worship applied not to historical, mythological gods or the natural world, but to the very technological innovations that brought on the apocalypse. *Fallout* and *Horizon* are far from the only games to employ metaphors of divinity in order to make sense of the destructive and awe-some power of technologies. Indeed, similar patterns can be found in a variety of post-apocalyptic games, from *NEO Scavenger's* Church of the Blue Frog, *Fallen Earth's* tech-obsessed religion, *Metro 2033's* cults and churches, *Final Fantasy X's* Yevon religion, the *Destiny* series' Traveller and its prophet the Speaker, *NieR: Automata's* devoutly religious "Machines," lead by Adam and Eve. Such post-apocalyptic games, we argue, exemplify the under-acknowledged alternative of "science fiction-based religion" next to the well-documented and commercially well-represented traditions of history-based and fantasy (fiction)-based religion. As opposed to those traditions' nostalgic framing of religion, science fiction-based religion has been represented since the 1980s as a way of making sense of technologies and their implications for humans. That is, technology is consequently framed as an opaque force with god-like powers—whether it is cyberspace, the matrix, the atomic bomb or self-reproducing artificial intelligence—these are 'things greater than thou.'

The religious imagery about such powerful technologies, we demonstrated, is perceived as highly ambivalent. They are potentially destructive and constructive; frightening and fascinating; divine and demonic. In the analysis of, what he calls, 'posthuman technologies' in contemporary science fiction, Daniel Dinello (2005) argues that this ambivalence is key. On the one hand, AI, biotech, VR or nanotechnology promise humans "techno-heaven"—engineered salvation from the biological body and even an "immortal mind" (Noble 1999). On the other hand, it may bring us 'techno-hell'—computers taking over and, ultimately, bringing about an apocalypse: the 'Singularity' (Kurzweil 2005), the "rapture of the nerds" (Popper 2012) or "apocalyptic AI" (Geraci 2012). From the academic perspective of religious studies and the sociology of religion, this ambivalence may be the core of the religious sentiment underpinning science fiction-based religion (Aupers 2009; Aupers et al. 2008). In *The Threshold of Religion* (Marett 1914), Robert Marett explained the birth of 'nature religion' by the fact that 'primitives' found themselves confronted with a natural environment they could neither understand nor control their natural environment; they therefore experienced it as an overpowering, mysterious force ('mana') that invoked the basic the basic religious emotion of 'awe,' a combination of fascination and fear: "of all English words awe is, I think, the one that expresses the basic religious feeling most nearly" (Ibid., p. 13). The theologian Rudolf Otto (Otto 1987), in turn, depicted the 'holy' as the Other—motivating a sense of 'fascinans' and 'tremendum.' Nowhere does this trembling awe and fascinated devotion—for Atom, for Artificial Intelligence—come together as obvious as in the genre of *Fallout* and *Horizon*. Not nature, but technology now seems to be the pinnacle of religious sentiments of 'awe'.

In conclusion, then, these two games typify a science fiction-based religiosity that reveres technology of the future—omnipresent, omniscient, and omnipotent technologies that invoke religious feelings of fear and fascination. Science fiction, however, feeds on science fiction: these texts about an apocalyptic world governed by technologies comment on, speculate about and make sense of emergent technologies in contemporary society—atomic bombs, AI and VR. More than that, they reproduce some of the dreams and nightmares formulated by technological pioneers in Silicon Valley—such as those of 'posthumanists' like robotics specialist Moravec (1988) or futurist Ray Kurzweil (2005), theorizing about AIs as 'mind children,' 'uploading consciousness' or the 'singularity.' By playing apocalyptic games *about* machines *on* machines, players inhabit digital worlds that imagine ways to deal with the super-humanly powerful and intelligent technologies that will surround us, or already do. The God metaphor, so it seems, plays an essential role in this imagination.

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