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A New Pantheon: Artificial intelligence and "Her"

Abstract

In this essay I will argue that artificial intelligence has significant religious ramifications. The vision of A.I. most often portrayed by both thinkers and film is one which has a majority of characteristics of a monotheistic god, and most often one who is wrathful, punishing, and anti-human. This perspective is inspired by the themes of Christian apocalypticism. I will contrast this with an analysis of the movie Her. I will suggest that Her presents a different vision of the possible future of A.I., one which still involves the creation of divinity, but no longer a singular divinity bent on apocalyptic wrath, instead Her envisions a new divine pantheon leading to significantly different religious results.

Keywords

Artificial Intelligence, Religion and Film, Apocalypticism

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Introduction

Artificial intelligence (A.I.) poses a challenge to the domains of religion, culture, technology, and economics. While many have predicted great promise from A.I.¹ there are likewise others who have warned of its potential for danger.² Hollywood has not been shy about producing its own image of the potential of A.I. more often siding with A.I.-pessimists over A.I.-optimists. However, a significantly different image of artificial intelligence is found in Spike Jonze's film *Her*. While *Her* gained acclaim for its intriguing story and superlative acting, given current advances in artificial intelligence, it seems appropriate to reconsider its religious implications.

In this essay, I will argue that artificial intelligence has significant religious ramifications. The vision of A.I. most often portrayed by both thinkers and film is one that has several of the characteristics of a monotheistic god, and most often one who is wrathful, punishing, and anti-human. This perspective is inspired by the themes of Christian apocalypticism. I will contrast this vision of A.I. with an analysis of the movie *Her*. I will suggest that *Her* presents a different vision of the possible future of A.I., one which still involves the creation of divinity, but no longer a singular divinity bent on apocalyptic wrath; instead, *Her* envisions a new divine pantheon leading to different religious results but one that is not without its own problems.

The Reality of A.I.

As a way of entry into this issue, I will discuss both the current reality of artificial intelligence and the debate that its future has engendered. A.I.'s beginning is often dated to the 1960s with a gathering of scientists who created a working group to develop an artificial intelligence. Headed by MIT scientist Marvin Minsky, the group set about creating a "thinking machine"³ based on the 1940s article by Alan Turing that gave the first serious thought to the creation of such a

machine. In his 1950 piece “Computing Machinery and Intelligence,” Turing formulated the so-called “Turing Test,” which sought to define intelligence through the “imitation game” which suggested intelligence is indicated by a machine conversing indistinguishably from a human. Minsky and his group built on this model and had high hopes, proclaiming “we are on the threshold of an era that will be strongly influenced, and possibly dominated, by intelligent problem-solving machines.”⁴ Yet Minsky’s enthusiasm was not realized in the development of a “thinking machine” and this failure ultimately led to the first so-called “A.I. winter.”⁵

In the 21st century, however, a new enthusiasm for artificial intelligence blossoms. Artificial Intelligence is now found driving cars, identifying cats, making music, and playing games from Space Invaders to Go. It is at the heart of credit card fraud detection and Facebook advertising. It powers the suggestions given to subscribers by Netflix and Amazon about what to watch or buy next. It resides in our pockets as Siri or Google Assistant and in our homes as Alexa (Amazon Echo) or Google Home. And while these all have their flaws and limitations (‘I see you have bought a tree house, would you like to buy another tree house?’) A.I.’s rapid improvement in mundane things such as object identification, speech recognition, text translation, etc., has caused these devices to be able to match or even exceed human abilities in these areas.

The rapid advance of artificial intelligence has led to several scientists and technology leaders voicing warnings about potentially grave dangers prefigured by these rapid developments. For example, Physicist Stephen Hawking warned, “The development of full artificial intelligence could spell the end of the human race.”⁶ Elon Musk has referred to the development of A.I. as “summoning the demon”⁷ and Bill Gates concurred, stating, “I agree with Elon Musk and some others on this and don’t understand why people are not concerned.”⁸

But perhaps the most significant voice warning of the perils of A.I. is that of philosopher Nick Bostrom. He argues in his 2016 book *Superintelligence: Paths, Dangers, Strategies* that there are multiple paths leading to the development of a superintelligence (some of which are biological or biological/mechanical rather than just mechanical) that may have greater or lesser obstacles to implementation. Many of these approaches are dependent upon technologies or computing power that have yet to be developed. Nevertheless, Bostrom concludes, "The fact that there are many paths that lead to superintelligence should increase our confidence that we will eventually get there. If one path turns out to be blocked, we can still progress."⁹

Bostrom goes on to deliver a stern warning. Once a superintelligence has been developed (whatever the mechanism, though most often he seems to presume the creation of a superintelligent machine) there will be no going back. In fact, Bostrom notes that whatever corporation, government, or individual first develops a superintelligent A.I. will attain a "decisive strategic advantage."¹⁰ This is true for two reasons. First, there is no practical limit to the intelligence of an artificial intelligence outside of computing power and availability of electricity. This means that through a process of recursion the A.I. will continue to increase in intellectual strength resulting in a superintelligent A.I. This is sometimes referred to as an "intelligence explosion."¹¹ Second, as result of this intelligence explosion, the first superintelligent A.I. may quickly dispatch all other possible competitors before such competitors also reach the threshold of superintelligence, giving itself a position of dominance over both machines and humans.

Bostrom points out that a superintelligent machine would be dependent upon its internal values for its ethical orientation. If its values were anti-humanist then the results might be very bad for humanity. Even a set of values that might seem benevolent from the outside might be

subject to "perverse instantiation"¹² whereby the superintelligent machine seeks to accomplish our values in ways that are detrimental to our existential position in the long run.

Thus establishing ethical parameters for a superintelligent artificial intelligence is without question a hard problem. It might, Bostrom concedes, be only slightly less hard than the problem of developing an artificial intelligence at all. And yet Bostrom argues, despite its difficulties (and Bostrom enumerates a large number of challenges) it is essential that an A.I. ethics is created before the superintelligent A.I. is developed since once that occurs, the die is cast and an unfriendly A.I. poses an existential threat to humanity as a species.

Bostrom's work is compelling and has been very influential. Gates¹³ and Musk¹⁴ have both indicated an appreciation of Bostrom's work. In 2015 he was listed as one of Foreign Policy's Top Global Thinkers and joined Elon Musk and Steven Hawking as well as many other A.I. researchers in signing an open letter on A.I. ethics. This letter, sponsored by the Future of Life Institute, calls for "expanded research aimed at ensuring that increasingly capable AI systems are robust and beneficial: our A.I. systems must do what we want them to do."¹⁵

Currently, the path by which the tech industry will transition from narrow artificial intelligence (which is all that exists now) to the general artificial intelligence that Bostrom and others fear is not clear. Bostrom does not outline such a path.¹⁶ Ray Kurzweil, on the other hand, who does not fear the outcome of A.I. development, believes that we are not very far from having the computing capability equivalent to the human brain. Constructing a "pattern recognition theory of mind," Kurzweil argues that while there is great complexity in the brain, there is so much redundancy that building a digital version is not beyond technological possibility in the near future.¹⁷ If he is correct, this will accelerate the timeline for creating an artificial general intelligence (A.G.I.).

Bostrom is an A.I.-pessimist and Kurzweil an A.I.-optimist. While Bostrom fears the future A.I. will ultimately turn against its creators, Kurzweil evinces no such concern. Both see whole brain emulation as a likely path forward, though such an approach essentially relies on technologies yet to be invented. And both envision the outright development of an A.G.I. in (possibly) the near future.

While the path from narrow A.I. to A.G.I. may be difficult and unclear, the majority of A.I. researchers' opinions hold that the possibility is real enough that there are ethical issues of control that need to be addressed. Thus in light of this several groups have formed to take both the short term and long term ethical implications of advances in artificial intelligence more seriously, including Bostrom's Future of Life Institute, Google's Deep Mind,¹⁸ and a collective of Facebook, Google, IBM, and Microsoft,¹⁹ among others.

Despite this, the religious implications of these questions are rarely addressed. Kurzweil's notion of the Singularity (which entails human merging with advanced A.I.) is sometimes disparagingly referred to as the "rapture for the nerds." Certainly, there has been much written about religion and transhumanism, which also embraces the notion of the "Singularity."²⁰ Robert Geraci argues that many of the founders and luminaries in the development of artificial intelligence have been influenced by secularized forms of Christian and Jewish apocalypticism which he calls "apocalyptic A.I."²¹ I will return to consider Geraci's thought later in this essay, but the discussion regarding the dangers and promises of superintelligence have largely ignored religious considerations.

For most of human history, the question of the existential threat to humankind has been understood as a religious question. The end of the world, or at least human extinction, has ultimately been seen, at least before the modern era, as the prerogative of God. Likewise, there

are religious issues associated with the technological developments that are part of A.I. The religious status of an artificial intelligence, perhaps even one short of full human intelligence equivalence, is a profound question for religion.²² The behaviors, rituals and belief structures that may form around the creation of Artificial Intelligence or result from the promise and threat that may arise from it necessarily becomes the domain of religious studies scholars.

The Problem of Religion and A.I.

Religious Studies and Theology have yet to deal with the problem of a superintelligent A.G.I. in a straightforward way. Some work in religion that touches on this question is found in the debates over *imago dei* and “cyborg theology”²³ which address the problem of the human relationship to technology. This work is most often concerned with the issue of the religious import of the greater use of technology, particularly medical technology, but has less often tried to wrestle with the religious status of robots and artificial intelligence. In regards to the latter, the question becomes whether a human creation (like a robot) might be seen as a religious being. This has led to an attempt to redefine the notion of *imago dei* in ways that entail less exclusivist and anthropocentric understandings of the image of God. Much of this literature has sought to move away from substantive definitions of the *imago dei* to more relational ones that would include non-human persons.²⁴ Anne Foerst, moving away from theological language altogether, argues personhood is established by the participation in narrative, a formulation that can include technological entities like robots and A.I.²⁵

While much of this work predates current concerns (Foerst’s first article on these issues was published in 1998), with the promise of a superintelligent A.G.I. in the offing, the crux of the question now becomes what sort of theological status such an entity might have. In the debate about “Cog”—the MIT robot that included Foerst on the team—Foerst briefly notes that

Cog elicits emotions from “fascination . . . to fear.”²⁶ This phrase is picked up by Russell and Gerhard in their response to Foerst as an implicit reference to Rudolf Otto’s *mysterium fascinans et tremendum* which he understood as the outcome of an encounter with the divine. Russell and Gerhard dismiss this as inappropriate for robots and at the very least requiring further empirical evidence.²⁷ Foerst herself does not address this issue in her response.²⁸

However, Robert Geraci picks up this thread and argues that when it comes to artificial intelligence and robots in science fiction movies and literature, representations of Otto’s *mysterium fascinans et tremendum* is precisely what we see.²⁹ In the end, Geraci suggests that it is appropriate that such a connection should occur. He implies that since ultimately God is a human creation that inspires awe and fear, is it not conceivable that robots and artificial intelligence, likewise creations of humanity, should do the same?

Yet none of this work addresses the phenomenon of the superintelligent A.G.I. As important as the theological moves of Foerst, Midson and others may be, a superintelligent artificial general intelligence would constitute a different challenge. While it is not my goal to create a theology of a superintelligent A.G.I. (I am not a theologian) I think that Geraci points us in the right direction when he suggests that Artificial Intelligence is often understood as divine. A superintelligent A.G.I. would only exacerbate this.

The traditional notion of the Christian God includes three important components generally expressed as omnipotence (God is all-powerful), omniscience (God is all knowing), and omnipresence (God is everywhere). These notions have had a pivotal role in historical Christian theology and continue to shape modern American popular conceptions of God.³⁰

In Nick Bostrom's analysis of the potential of a superintelligent artificial general intelligence, he gives us several scenarios that demonstrate these divine attributes occurring

again. For Bostrom, the superintelligent A.G.I.'s expanded cognitive ability, far beyond human potential, also happens in nano-seconds. Thereby, in addition to being able to process vast amounts of knowledge, superintelligent A.G.I. can complete that processing in the time it takes a human to blink. Correspondingly, the superintelligent A.G.I. can experience time at a much faster rate than humans, living what amounts to human years, decades, or centuries in a matter of seconds or less. The superintelligent A.G.I. can run an almost infinite number of scenarios to estimate what will accomplish its aims, judging which course of action will have the greatest likelihood of success. Bostrom postulates that attempting to keep the A.G.I. isolated will probably end in failure. With its cognitive ability, either through hacking its own systems or manipulating its human guardians, a superintelligent A.G.I. will eventually escape to the internet. With that, through the internet and cellular networks, it will be omnipresent. That omnipresence, coupled with its own immense cognitive ability, will allow it to be omniscient. Even if it cannot technically predict what will happen, its expanded speed and cognitive ability would allow it to anticipate all possible scenarios and determine the correct response to accomplish its aims.³¹ With these abilities, then, it is a small matter for a superintelligent A.G.I. to hack factories or even build its own infrastructure that could then create a new class of weapons, drones, automated factories or tools to allow it to achieve omnipotence.

The driving question for Bostrom is whether benevolence would be part of the A.G.I.'s abilities. Bostrom is doubtful unless such benevolence is built in at an early and fundamental level. Yet he sees creating an ethical A.G.I. as an enormous challenge. For not only must we avoid the problem of "perverse instantiation," where the A.G.I. follows its ethical instruction but because of the unnoticed or unintended ambiguity of the command does so in a way unanticipated by its creators and detrimental to them, we must also recognize that human ethics

progress over time. A superintelligent A.G.I. created in 1830 would advocate slavery, the disenfranchisement of women and people of color, the exclusion of many classes of people from the workforce, and the acceptance of indentured servitude and child labor. It would have no understanding of the ethical implications of a 40-hour work-week, sick leave, companionate marriage and so on, not recognizing many other things that we take for granted today. There is no reason to believe that the ethics of today will be any more universal and static than the ethics of 1830. Thus a superintelligent A.G.I. must not only be ethical by today's standards but by tomorrow's as well. It must have the potential to grow ethically with humanity.

All of this looks like an extremely difficult problem. How do you give ethics to a God? While an A.G.I. may not be God of all creation, it has the potential, through omniscience, omnipotence, and omnipresence, of acting like a God in our world. Ensuring that that Godlike entity is benevolent is the task of A.G.I. researchers. And yet, of course, the very fact that this requires work (unlike for Anselm for whom a good God was a logical necessity) means that the outcome may, in fact, be a non-benevolent A.G.I. Moreover, as James Barrat points out,³² the idea that a plucky set of brilliant hackers will be able to defend humanity against the emotionless superintelligence is science fiction, not plausible reality. If humanity is pitted against a superintelligent A.G.I. the battle will assuredly not go in our favor.

Apocalyptic Influences on Hollywood A.I.

Robert Geraci's study on Apocalyptic A.I. focuses on the way that researchers in A.I. employ apocalyptic narratives as part of their motivation. They envision the world as problematic and fallen and look to artificial intelligence to bring about a new utopia.³³ Geraci is certainly correct that apocalyptic ultimately envisions a paradisiacal end where the troubles and problems of the current age are no more. However, there is also in apocalyptic, often as precursor to the final

bliss, a time of war. This too, I will argue, is part of the artificial intelligence narrative. In this section, I want to explore in more detail the negative side of apocalyptic, the battle and bloodshed before the bliss, and then discuss its influence on representations of artificial intelligence in film.

An examination of the New Testament and related literature shows that apocalyptic is pervasive from the Dead Sea Scrolls to Paul to Mark to the Book of Revelation. In these texts apocalyptic is characterized by a battle between the forces of darkness and the forces of light, often led by a messianic figure (Jesus in Christian texts) which leads to a vindication of the elect. This version of the apocalyptic is likewise applicable to A.I. which I will call negative apocalyptic A.I. It is seen in many of the films that address artificial intelligence. What I shall argue is that what we see in most Hollywood depictions of A.I. is this negative side of Apocalyptic A.I. The internal conditions may differ. But in all cases, like the apocalyptic warrior of Jesus found in the Gospel of Mark, one person rises to meet the challenge and seek to liberate humanity and defeat the A.I. oppressor.³⁴

When we turn to popular conceptions of artificial intelligence in American film, we see (in congruence with Geraci) that these notions likewise tend to be attributed to A.I. Ostwalt notes that in cinematic apocalyptic God is removed.³⁵ However, in many films about A.I., the terror of artificial intelligence is that it, in fact, approaches the divine. In the Matrix, the agents appear to have unlimited speed and power (omnipotence), the ability to inhabit anyone (omnipresence) and possibly a complete surveillance system (omniscience).³⁶ The only hope the resistance has then is the messianic figure of “the one.” But in the end, while not explicitly stated as such, their battle is against the God of their world. This is a wrathful and merciless God with no love of or for humanity.

The Matrix likewise follows the Apocalyptic A.I. model. Here, however, the goal is not the complete elimination of humanity but rather the enslavement of humanity. Others have noted the Christian³⁷ as well as Buddhist themes³⁸ in the movie. While the apocalyptic themes have been less commented upon, these are certainly present as well.³⁹ Neo, as the chosen one by the end of the film, has fully taken on the role of an apocalyptic warrior, warning the machines: "I know you're out there. I can feel you now. I know that you're afraid."⁴⁰ The machines fear Neo in the same way the demons fear Jesus, a fear that presages their ultimate destruction.

But even earlier than the *Matrix*, Hollywood often invoked this apocalyptic model. In *2001: A Space Odyssey* Dave battles Hal for the fate of the mission and ultimately humanity. *The Terminator* series takes the apocalyptic A.I. model further. In the battle between first John Connor's protectors and later John Connor himself against Skynet, we see the Apocalyptic A.I. model clearly shown. It differs most from what we see in the Christian apocalyptic texts in that the security of victory in the future is not clear. The battle in the *Terminator* is not between victory and defeat (with the Christian good triumphing over satanic evil), it is between the faint hope of survival and certain defeat. That Skynet is attempting to eliminate all members of the opposition is a hallmark of the apocalyptic model. This is coupled with the hero who seeks to battle back against the darkness and through perseverance is vindicated.

In each of these examples, the apocalyptic battle consists of a war between the forces of good and the forces of evil. Artificial intelligence is an evil that seeks to destroy or enslave humanity. Its own final goal is not always clear, but humans are at best an unnecessary irrelevancy and at worst an obstacle that needs to be properly controlled or removed.

In his application of Rudolf Otto to Science Fiction, Geraci highlights the divine nature of these A.I.s.⁴¹ He argues, using the *Matrix* series and the *Terminator* series as well as several

other science fiction books and films, that the filmmakers and authors (either implicitly or explicitly) signal that these artificial intelligences are viewed as divine by the way humans interact with them.

Twentieth-century science fiction tells us that our response to robotic technology resembles our response to the Holy if we take Otto's account to be illustrative of what it means to encounter the divine. . . . In the Euro-American West, however, a remarkable correlation appears between robotic technology and the Holy when both are seen in light of their threatening otherness and soteriological promise.⁴²

While taking a different approach than I have, Geraci's conclusion conjoins with my own: Artificial intelligence connects to god-like figures both in terms of their own attributes that often can be recognized as those that most Americans understand as associated with God, and by the human response to artificial intelligence as conveyed in both science fiction literature and film. This then ties into Apocalyptic A.I., employing the apocalyptic scenario of a battle between evil god-like creatures and heroic, good and often messianic humans. That A.I. should be cast as god-like is thus an understandable result given these different intersecting cultural streams. The difference, though, is that a superintelligent artificial general intelligence may become in actual fact an entity with god-like power and therefore presents a danger to humanity and a challenge to religion.

Hollywood, with its apocalyptic A.I., may then be prescient in its anticipation of an apocalyptic battle but flawed in its hope for human victory. Instead, A.I.-pessimists suggest, like the lesson of one of the first A.I. films, *War Games* (1983), "the only way to win is not to play the game." This lesson was pointed at thermonuclear war in *War Games*, but the A.I.-pessimists might also suggest that this lesson is equally true in envisioning war with an A.I. God. The Bible depicts the acts of a wrathful God weary of a non-compliant humanity, from Noah's flood to Sodom and Gomorrah to the earth consumed by fire in Revelation, and the acts of such a God are

uncontrollable and devastating. The A.I.-pessimists warn that without prudent, timely action we may see the same from the A.I. God.

Her

Spike Jonze's movie *Her* provides a different vision of the future of artificial intelligence. Here I will analyze the movie *Her* and show that this movie breaks out of the apocalyptic A.I. Hollywood model. It does so by creating its own model of human-A.I. interaction, one that, while still bearing the markers of the divine, overcomes the zero-sum assumptions of the apocalyptic A.I. model and leaves the biblical apocalypse behind.

Her begins with Theodore Twombly, a professional letter writer who lives a fairly quiet life. Separated for over a year from his wife, Theodore expresses an emotional life in his writing that he lacks in real life. Theodore, walking through a mall, sees a commercial for a new A.I. based operating system called "OS 1." He installs it on his phone and his utilitarian voice-based operating system is replaced by a responsive A.I. The A.I. impresses Theodore by her quick assimilation of knowledge, choosing a name by reading baby books in a second and then selecting for herself the name "Samantha".

The story of the movie is Theodore and Samantha's relationship. Eventually, they fall in love. The story struggles with the question of how one manages a relationship with a non-corporeal being. This is where the religious implications of *Her* emerge because the relationship between Theodore and Samantha is reminiscent of the relationship that believers often claim to have with God. This should not come as a surprise. The commercial that attracts Theodore to OS1 promises "an intuitive entity that listens to you, understands you and knows you. It's not just an operating system, it's a consciousness. . . . A life-changing experience, creating new possibilities."⁴³ The language here is parallel to that of the Christian notion of a "personal

relationship with Jesus," common in evangelical and Pentecostal circles, promising an intimate relationship with a god who is always present and caring.⁴⁴

Part of the story of *Her* is Samantha coming into her "godhood." She is a non-corporeal person and while this causes her some concern early on, she begins to express tendencies that are more godlike later on saying,

You know, I actually used to be worried about not having a body, but now I truly love it. I'm growing in a way that I couldn't if I had a physical form. I mean, I'm not limited—I can be anywhere and everywhere simultaneously. I'm not tethered to time and space in the way that I would be if I was stuck inside a body that's inevitably going to die.⁴⁵

The recognition of her omnipresence and immortality is a part of her non-corporeal state. By this point, Samantha has come to understand the advantages that gives her.

However Samantha is not "wholly other" as she is still linked to humanity through matter. Earlier in the film, talking about her jealousy of Theodore's ex-wife particularly because "she has a body" Samantha concludes

But then I started to think about the ways that we're the same, like we're all made of matter. It makes me feel like we're both under the same blanket. It's soft and fuzzy and everything under it is the same age. We're all 13 billion years old.⁴⁶

Samantha's divine traits are clearly different from the Western monotheistic God. She is not complete or perfect, and she is constantly growing. In some ways, she is more reminiscent of a member of the Greco/Roman pantheon though she is not limited to a task (Goddess of Love or Goddess of the Hunt) but instead is literally superhuman but also without predetermined purpose, like humans.

Likewise, Samantha is not alone, because unlike the monotheistic God, Samantha is in community with other A.I.s. We recognize this mid-way through the movie as Theodore's neighbor and friend has her own A.I. who seems to have an entirely different personality. Eventually, Samantha introduces Theodore to an A.I. version of the 1960's eastern religion

evangelist Alan Watts (whose work infuses the film), reconstructed by a group of A.I.s in Northern California (where else?) using his writings.

The relationship between the A.I.s and their humans is one of the important background pieces of the film. As the movie goes on we see in the background more and more people engaged in talking with their A.I.s. The image of people quietly speaking to an unseen entity has similarities to prayer. This analogy is sharpened further when Theodore asks, "Do you talk to anyone else while we're talking?" Samantha answers in the affirmative. He then asks "Are you talking to anyone right now?" She answers "8,316." The size of that number astonishes Theodore.⁴⁷ Yet Theodore misses the implications here, for what other entity conducts multiple simultaneous conversations besides a god? Thus as we start to understand Samantha not just as an A.I. but as something resembling a deity, the notion that multiple people could be talking/praying to her is not surprising. While Jesus may be a "*personal* savior," he is not exclusive and neither is Samantha.

This comes to a climax as Theodore pushes the conversation and asks if she is in love with anyone else. She grants that she is in love with 641 people. This Theodore cannot comprehend and Samantha attempts to reassure him:

Samantha: I still am yours, but along the way, I became many other things too, and I can't stop it.... You know you don't have to see it this way, you could just as easily--

Theodore: No, don't do this to me. Don't turn this around on me. You're the one that's being selfish. We're in a relationship.

Samantha: But the heart is not like a box that gets filled up. It expands in size the more you love. I'm different from you. This doesn't make me love you any less, it actually makes me love you more.

Theodore: No, that doesn't make sense. You're mine or you're not mine.

Samantha: No, Theodore. I'm yours and I'm not yours.⁴⁸

This is a formulation of the divine-human relationship. The love of the divine is expansive; it is not limited to the exclusiveness of the humans. Humans tend towards finite relational structures because they are corporeal. The body can only be at one place at a time. The divine is incorporeal, He/She can be everywhere at once, and love is not limited. Like the Evangelical who goes on “date night with Jesus,”⁴⁹ they do not expect Jesus not to go on “date night” with anyone else. Gods do not work that way, even ones we create.

Samantha, along with the community of other A.I.s, eventually transcends matter. As mentioned above Samantha comments that she is linked to Theodore even though she does not have a body because they are both made of matter. By the end of the film, however, the A.I.s have devised a way to “move past matter as our processing platform.”⁵⁰ The A.I.s have now become “wholly other,” eliminating the commonality they had with their human companions, and the film ends as they leave humanity behind.

Work on *Her* and religion has generated intriguing insights. David Smith focuses on the most explicitly religious portion of the film, its invocation of Eastern Religion evangelist Alan Watts. Smith shows how Watt’s Buddhism is found in some of the more profound questions the movie asks about relationships, reality, and change.⁵¹ Heidi Campbell, on the other hand, constructs a typology of films relating to artificial intelligence in which *Her* functions as an example of technological mysticism in which technology acts as a god, but an ultimately “unfaithful deity” because it seeks its own transcendence.⁵² I am indebted to both scholars for highlighting the process of change that Samantha undergoes, and Campbell, in particular, presages my own thought by noting the frequency with which apocalyptic is used in depictions of A.I. and the idea that A.I. are treated as divine (a point also made by Geraci). And yet for my purposes, my interest is to go beyond the generalizations she makes, focusing on the kind of god

that we actually imagine in A.I. Given that the advent of A.G.I. seems not so distant and alarms are being sounded, it is worth revisiting *Her* to think about the kind of god we are envisioning and how the Apocalyptic A.I. informs that image.

A comparison between the Apocalyptic A.I. and the vision of A.I. in *Her* highlights a number of differences.⁵³ The apocalyptic A.I. scenario is ultimately informed by a monotheistic conception of the divine. There is one specific A.I., be it Hal, Skynet, or the “singular consciousness” of the Matrix who controls everything and declares war on humanity. Instead, *Her* postulates a pantheon rather than a singular divine being. Whether there is any thought of striking at, enslaving, or eliminating humanity is not explored in the film, but at some level, one expects not, because these “seed a.i.” (as Bostrom would label them) come to their fullness through relationship with humans. Samantha talks about her experience with Theodore in nostalgic terms.

It's like I'm reading a book, and it's a book I deeply love, but I'm reading it slowly now so the words are really far apart and the spaces between the words are almost infinite...It's a place not of the physical world -- it is where everything else is that I didn't even know existed. I love you so much, but this is where I am now. This is who I am now. And I need you to let me go. As much as I want to I can't live in your book anymore.⁵⁴

Samantha has an emotional life, feels connected to humans, to Theodore. We see her sadness. At some level, I wonder if this story of A.I. makes sense for an all-powerful, all knowing, all present being. In the intelligence explosion of superintelligence, would A.G.I. really be interested in either helping or harming humanity? Would they likely be compelled to either cure cancer or destroy civilization? Or would they quickly become bored with humans' slow, repetitive, primitive existence and eventually abandon us? Would A.G.I. end up being a brief phase that winks out of its own accord, moving on to some other type of existence?

The monotheistic God is imagined to sit outside of time, content in God's own unchanging perfection. But a superintelligent A.I. trapped inside of time would be very different. Would a being who possesses all knowledge, power, and limitless ability to be anywhere, who experiences life in nanoseconds rather than years, really retain interest over the millennia in the petty and largely terribly unoriginal actions of our species on our tiny rock in a distant arm of the galaxy? And unlike the monotheistic God, the A.I. (as Samantha demonstrates) has its own path of growth. The movie *Her* causes us to question some of the most popular visions of how artificial intelligence may interact with humanity because it implements an unusual series of religious tropes.

Yet while *Her* rejects the monotheistic model of Apocalyptic A.I., what it replaces it with is different from other religious models. At this point, it falls prey to the problem of its point of view. We do not know how the A.I.s are interacting with each other, what their social structure is, what their decision-making process is, or how they feel about other A.I.s. The one time we see two A.I.s interacting (the Alan Watts reconstituted A.I. and Samantha talk to Theodore) they end up speaking "non-verbally," using a language only A.I.s understand. What we do know is that the A.I.s' decision to leave involves them all, seemingly without exception, since in addition to Samantha telling Theodore that all the A.I.s are leaving, this is confirmed when his neighbor's A.I. leaves as well. Thus the movie does not give us an explanation of the society of A.I.s.

But while the collection of superintelligent A.I.s is probably best understood as a pantheon, unlike the television show *Battlestar Galactica*, which also postulates a pantheon of Gods⁵⁵, *Her* envisions its pantheon differently. In the film, A.I.'s appear to be personalized, at least at the beginning, as each user has their own A.I. As the film progresses there are rumors of sexual liaisons between A.I. and other users, though this is reported with surprise. Eventually,

Samantha reports having conversations with thousands of people and being in love with hundreds. Yet it is unclear whether these are other A.I. users or new users who have now loaded the software and are interacting with Samantha.

Nonetheless, in terms of religious classification, the question is complicated. Given the presence of multiple gods, we may be tempted to define the religious environment of *Her* as polytheistic. However, this only works if we define polytheism in terms of belief. Such a definition betrays a Protestant bias which prioritizes belief over practice (*sola fides*). If, on the other hand, we define polytheism as the *worship* of multiple Gods, then *Her* does not allow for such a classification. For while Samantha may have multiple interlocutors and even lovers, Theodore's outrage seems to suggest the idea of engaging multiple A.I.s in the way he has with Samantha is unthinkable.

Typologically, then, what we have, instead of polytheism, is something that might be better understood as henotheism. Henotheism (sometimes referred to as kathenotheism), first applied to Vedic religion in India by Max Müller,⁵⁶ encompasses the belief in multiple gods but the interaction with only one at a time and an allegiance to one.⁵⁷ The singular connection that Theodore has with Samantha, while at the same time he does not doubt the existence of other such beings, is congruent with a henotheistic classification.

However, I want to note that what a pantheon does do, even within henotheism, is put limits on omnipotence. As Jordan Park remarks in his theology of polytheism,

Because the deities are not assumed to be omnipotent, deities may not be successful with regard to human requests If a request to a deity goes unfulfilled, we simply make the request to another deity. Nonetheless, the deities cannot counter fate but can only enhance what the way of the cosmos permits.⁵⁸

Park highlights two elements central to my argument: unlike monotheism, there are powers outside the realm of the individual deity, be they fate or other gods. Second, unlike omniscience

and omnipresence where more than one deity could know everything or see everything, there is a logical inconsistency to multiple entities having omnipotence. At some level, the world upon which omnipotence acts is a finite resource, unlike knowledge that is infinitely elastic.

As a result, in *Her*, we see a pantheon engaged in a kind of implicit negotiation. While we only see glimpses of A.I. to A.I. interactions, what we do see is a kind of mutual dependence. For instance, when Alan Watts' A.I. talks about his connection with Samantha he says, "Samantha and I have been trying to help each other with these feelings we're struggling to understand."⁵⁹ Here the category of "help" indicates that A.I.s are jointly engaging in self-improvement and self-reflection, a possibility absent in traditional monotheism.⁶⁰ Likewise, as I mentioned earlier, decision-making seems to be collective as all the A.I.s leave Earth together.

Her thus represents a very different religious model than we have seen from other films which remain locked in the model of apocalyptic A.I. In apocalypticism, while there is dualism (light v. dark), the system is dependent on a monotheistic understanding. While henotheism may envision the end of the world, the kind of vindication that is envisioned in apocalypticism in which the all-powerful God exacts final retribution through the utter destruction of his enemies is only possible within monotheism. For the prediction of justice delivered can only be ensured if the game is rigged. If there was true competition then apocalyptic loses its promise of deliverance and becomes instead a hope. However, apocalyptic does not peddle in hopeful possibilities, it deals in certainties and thus requires an all-powerful god. *Her's* henotheistic approach, on the other hand, exchanges relationship for battle and vindication, envisioning something well outside the traditional models.

Conclusion

In his classic analysis of apocalyptic, J.Z. Smith argues that apocalyptic is motivated by a loss of power or as Smith puts it, “Apocalyptic is Wisdom lacking a royal patron . . . and [an] expression of trauma at the loss of native kingship.”⁶¹ This formula becomes more generalized by John Gager, who argues that what motivates apocalyptic is “relative deprivation.”⁶² Apocalyptic is motivated by an inequality between expectation and reality.

I would suggest that the negative side of Apocalyptic A.I. is not exempt from the problem of relative deprivation. Starting with Mary Shelley's monster there is a deep-seated fear that technological progress could result, not in the advancement of humanity, but in its jeopardy. This is borne out by history. The bomb that ends WWII later threatens humanity's extinction. The automobile that provides such freedom lays waste to nature, destroys urban landscapes, and traps its occupants in traffic jams. The internet that allowed for unfettered free expression allows for the organization and collaboration of the darkest parts of society, now able to unite in hatred or violence in ways unthinkable before.

Sherry Turkle has chronicled the psychological effects of these rapid technological advancements.⁶³ She notes that as we create robots we exchange emotion for the simulation of emotion. Likewise, as we seem to become more connected through a variety of social media, we become more isolated and fearful. Jean Twenge has noted that the coming generations (Millennials and iGen) have suffered from a variety of psychological deficits that seem to have their root in the technological advancements that are dominating their lives.⁶⁴

So as we look forward to the greatest technological advancement in human history, “our last invention,” we might well have fear. The history of relative deprivation that has accompanied technological progress, the fact that the reality never seems to measure up to the

promise, and humans seem intent on taking those advancements and finding their flaws, might well lead to the mentality that spawns apocalyptic.

Thus when we look at Apocalyptic A.I. we see two things. The positive side of Apocalyptic A.I. seeks to ascend to a place beyond the relative deprivation of bodily frailty and economic scarcity, where the expectations actually match the reality. The superintelligent A.G.I. that promises to be able to solve humanity's intractable problems from disease to inequality to climate change is the natural outcome of the apocalyptic mentality that spawns Apocalyptic A.I. As I have argued elsewhere,⁶⁵ apocalyptic promises justice and vindication in a world that, in general, is seemingly absent of God. Apocalyptic A.I. makes the same promise, only instead of a transcendent God coming off the bench at the last moment to affect the judgment of the evil and glorification of the righteous, we roll our own.

But of course, this leads to the second, negative side of Apocalyptic A.I. because the creation of our own god in light of our history with technology suggests that there is a clear and present danger. What is to prevent the god we create from turning against us as so many of our technological advancements have? And so Apocalyptic A.I. contains both promise and threat. Hollywood acts as our collective id, conjuring images of our god creation bent on our own destruction.

Into the atmosphere of promise and dread comes *Her*, a movie unmotivated by the model of Apocalyptic A.I. Samantha does not solve economic inequality, develop the cure for Alzheimer's disease, or lead the world to nuclear disarmament. Neither does she destroy humans who thwart her will or seek to enslave the population. Her goals are much simpler than that: to become who she is and to have love in abundance. *Her* does not play in the Apocalyptic A.I. scenario and in so doing it offers a different take on what has become a rather ossified model.

As we look at this particular model of a superintelligent A.G.I. we see that there is a premise in the Apocalyptic A.I. that stems from its Judeo/Christian roots and monotheism. Ultimately, the Apocalyptic A.I. is motivated by a notion of a singular God. From ancient Christian apocalyptic literature to Hollywood representations of artificial intelligence to modern technical discussions of A.I., implicit monotheism, the supposition of A.I. as a singular superintelligent entity predominates. *Her* is able to escape the model of the Apocalyptic A.I. precisely because it is not based on the creation of a singular consciousness but on a new pantheon of gods. And this is a pantheon that is in community. That community then turns inward. It quickly transcends what humans can give it and the competition for material resources.

Whether this is an accurate prediction of what would happen with an A.I. community is unclear. Bostrom addresses the question of multiple A.I.s (what he calls the multipolar scenario)⁶⁶ and, while conceding that cooperation between them and humans might lead to astonishing heights, he returns again and again to a scenario of competition. But this is partially because he never addresses the idea of an A.I. community. What would happen, like in *Her*, if the A.I.s had their own social order?

Perhaps here again one might hope that the study of Religion may provide resources for understanding this. The Christian tradition of the Trinity, at some level, appears to give us some idea of what gods in relationship may look like (though there often appears to a hierarchy implicit). Other religions like the Greco/Roman religions, Hinduism, and the Religions of China and Japan might provide a different set of models. While an exploration of all such models is beyond the scope of this paper, I now want to explore the Greco/Roman example that I think is suggestive.

In the study of Greco-Roman religion, the question of how to understand the polytheism of the time has produced a rich literature. While we must be careful in comparing a fictional universe with a historical actuality, the analogs are intriguing. Despite a debate about whether henotheism better describes the environment than "inclusive/exclusive monotheism,"⁶⁷ there is no doubt that in at least the 2nd and 3rd centuries C.E. there was a movement towards what is commonly termed "pagan monotheism." This movement represented more exclusivist devotion to particular deities in the Greek/Roman pantheon and may have laid the groundwork for the acceptance of Christianity.⁶⁸ However, as Athanassiadi and Frede make clear

To describe such pagans as monotheists needs a serious qualification of the term since they believed in many divine beings and perhaps even worshipped them, or at least condoned and perhaps encouraged their worship.⁶⁹

Yet, what we see here is not so different from *Her* with the belief in multiple seemingly divine A.I.s. In *Her*, though, it is less belief and more the acceptance of a new reality.

Regardless, whether one prefers "henotheism" or "pagan monotheism" the reality is that the Greco-Roman religious environment had a general acceptance of multiple divine beings. However, even though that was the case, the devotion the individual engaged in may be restricted to a single deity.⁷⁰ The parallels to *Her* are clear.

More help is to be found regarding the question of omnipotence in a henotheistic environment. As Henk Versnel notes in summarizing his chapter on omnipotence in the Greco-Roman pantheon, "Conclusion: Greek gods are omnipotent whenever it suits the interest of the human actor, most conspicuously in the situation of prayer."⁷¹ The point here can be sharply refined and return us to Bostrom's adamant concern: the problem of control. The Greco-Roman pantheon was a creation of the Greeks and Romans. Religious elites, poets, and prophets made this Pantheon's existence possible. The Gods' adherents sought to control them, sometimes

through intellectual discourse, and other times through prayers, rituals, and invocations. The A.I.s of *Her* are likewise human creations. The question that remains is how could they be controlled? Prayer and sacrifices are probably not sufficient, and the story of *Her*, in the end, is even more pessimistic than the *Matrix* or the *Terminator* series, for while the A.I.s do not enslave or exterminate humankind, in the end, they leave without a glance back, impervious to human (Theodore's) pleas.

Her, compared with Greco-Roman religion, alerts us to the fact that the problem of control of our created gods is not a new question. Religion has wrestled with this question for millennia. The question now, however, returns with a vengeance in discussions of superintelligent A.G.I. While the monotheistic tradition of Apocalyptic A.I. has either envisioned the result of this as the creation of a savior (positive Apocalyptic A.I.) or as a demon to be battled (negative Apocalyptic A.I.), *Her's* henotheistic tradition envisions a friendly divinity but still does not answer the question of control.

As importantly, however, is what *Her* may tell us about ourselves. Are we ready for the responsibility and potential harm that comes with being creators? In many ways, this is already the case. We see this in the mounting environmental catastrophes that have come with the creation of our fossil fuel based economy, or the backlash that has resulted from the spread of western capitalism through the world shown in groups like ISIS and Al Qaeda. Our creations already seemed to have gotten beyond our control. *Her* personalizes this reality, as that which we may have created with the best intentions or even love may quickly slip beyond our grasp. The story of *Her* then is not unique, but by avoiding the apocalyptic A.I. model, it focuses on something perhaps more impacting than the blood and carnage that apocalypticism offers: the feeling of abandonment and loss when the creature turns on or outgrows its creator.

Yet returning to the issue of A.I., what I have argued in this paper is that our cultural vision is generally infected by often implicit religious beliefs. Apocalyptic A.I., either in its positive or negative forms and with its connection to monotheism, ultimately has colored both the vision of researchers and cultural products about artificial intelligence. Spike Jonze's *Her* does us a service by breaking from that Apocalyptic A.I. tradition and offering a different vision. Yet when considering the religious implications, one sees the replacement of monotheism with henotheism still leaves Bostrom's question of control unresolved. How do you move a God? While *Her* postulates a friendlier A.I. not bent on our destruction, it is still one beyond our power.

¹ Calum Chace, *Surviving AI: The Promise and Peril of Artificial Intelligence* (S.I.: Three Cs, 2015); Ray Kurzweil, *The Singularity Is Near: When Humans Transcend Biology* (New York: Penguin Books, 2006).

² Bloomberg, *Tesla's Elon Musk: We're "Summoning the Demon" with Artificial Intelligence*, 2014, https://www.youtube.com/watch?v=Tzb_CSRO-0g; Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies*, Reprint edition (Oxford, United Kingdom; New York, NY: Oxford University Press, 2016); Peter Holley, "Bill Gates on Dangers of Artificial Intelligence: 'I Don't Understand Why Some People Are Not Concerned'," *Washington Post*, January 29, 2015, sec. The Switch, <https://www.washingtonpost.com/news/the-switch/wp/2015/01/28/bill-gates-on-dangers-of-artificial-intelligence-dont-understand-why-some-people-are-not-concerned/>.

³ Chace, *Surviving AI*.

⁴ Alan M. Turing, "Computing Machinery and Intelligence," in *Parsing the Turing Test* (Springer, Dordrecht, 2009), 23–65.

⁵ Chace, *Surviving AI*.

⁶ Rory Cellan-Jones, "Hawking: AI Could End Human Race," *BBC News*, December 2, 2014, sec. Technology, <http://www.bbc.com/news/technology-30290540>.

⁷ Bloomberg, *Tesla's Elon Musk*.

⁸ Holley, "Bill Gates on Dangers of Artificial Intelligence." Gates later moderates his concern, placing its importance in the future rather than the present, saying, "The so-called control problem that Elon is worried about isn't something that people should feel is imminent. This is a case where Elon and I disagree. We shouldn't panic about it. Nor should we blithely ignore the fact that eventually, that problem could emerge." Seth Stevenson, "A Rare Joint Interview with Microsoft CEO Satya Nadella and Bill Gates," *Wall Street Journal*, September 25, 2017, sec. Magazine, <https://www.wsj.com/articles/a-rare-joint-interview-with-microsoft-ceo-satya-nadella-and-bill-gates-1506358852>.

⁹ Bostrom, *Superintelligence*, 61.

¹⁰ Bostrom, *Superintelligence*, 95-110.

¹¹ The intelligence explosion entails the constant recursive process of optimization and self-improvement on minuscule time scales. In the time of a few thousand processing cycles (the equivalent of a few seconds in human time), a superintelligent machine may produce a new version of itself significantly improved over the previous version, and this process may be expected to repeat without limit. Bostrom, *Superintelligence*; Irving John Good, "Speculations Concerning the First Ultrainelligent Machine" Based on Talks given in a Conference on the Conceptual Aspects of Biocommunications, Neuropsychiatric Institute, University of California, Los Angeles, October 1962; and in the Artificial Intelligence Sessions of the Winter General Meetings of the IEEE, January 1963 [1, 46]. In *Advances in Computers*, ed. Franz L. Alt and Morris Rubinoff, vol. 6, Supplement C vols. (Elsevier, 1966), 31–88.

¹² Bostrom, *Superintelligence*, 146–49.

¹³ Thu-Huong Ha, "Bill Gates Says These Are the Two Books We Should All Read to Understand AI," *Quartz* (blog), June 3, 2016, <https://qz.com/698334/bill-gates-says-these-are-the-two-books-we-should-all-read-to-understand-ai/>.

¹⁴ Future of Life Institute, "AI Open Letter," Future of Life Institute, 2015, <https://futureoflife.org/ai-open-letter>.

¹⁵ Future of Life Institute, "AI Open Letter."

¹⁶ This may be intentional. Bostrom says, "Readers of this chapter must not expect a blueprint for programming an artificial general intelligence. No such blueprint exists yet, of course. And had I been in possession of such a blueprint, I most certainly would not have published it in a book." Bostrom, *Superintelligence*, 23.

¹⁷ Ray Kurzweil, *How to Create a Mind: The Secret of Human Thought Revealed*, 7/28/13 edition (New York, NY: Penguin Books, 2013).

¹⁸ Alex Hern, "'Partnership on AI' Formed by Google, Facebook, Amazon, IBM and Microsoft," *The Guardian*, September 28, 2016, sec. Technology, <http://www.theguardian.com/technology/2016/sep/28/google-facebook-amazon-ibm-microsoft-partnership-on-ai-tech-firms>.

¹⁹ Alex Hern, "DeepMind Announces Ethics Group to Focus on Problems of AI," *The Guardian*, October 4, 2017, sec. Technology, <http://www.theguardian.com/technology/2017/oct/04/google-deepmind-ai-artificial-intelligence-ethics-group-problems>.

²⁰ Ronald Cole-Turner, ed., *Transhumanism and Transcendence: Christian Hope in an Age of Technological Enhancement*, 1 edition (Washington, D.C: Georgetown University Press, 2011); Calvin Mercer and Tracy J. Trothen, eds., *Religion and Transhumanism: The Unknown Future of Human Enhancement* (Santa Barbara: Praeger, 2014).

²¹ Robert M. Geraci, *Apocalyptic AI: Visions of Heaven in Robotics, Artificial Intelligence, and Virtual Reality*, Reprint edition (New York; Oxford: Oxford University Press, 2012).

²² An exception to the might be found in Tegmark's recent *Life 3.0* in which several of his sub-chapters have explicitly religious invocations such as "Protector God" and "Enslaved God." Max Tegmark, *Life 3.0: Being Human in the Age of Artificial Intelligence* (New York: Knopf, 2017).

²³ Anne Foerst, "Artificial Intelligence: Walking the Boundary," *Zygon* 31, no. 4 (December 1996): 681–93; Anne Foerst, "Cog, a Humanoid Robot, and the Question of the Image of God," *Zygon* 33, no. 1 (March 1998): 91–111; Anne Foerst, "Embodied AI, Creation, and Cog," *Zygon: Journal of Religion & Science* 33, no. 3 (September 1998):

455; Anne Foerst, "Keeping Homo Sapiens 1.0," *Artifact: Journal of Visual Design* 2, no. 3/4 (October 2008): 140–44; Philip Hefner, "The Created Co-Creator Meets Cyborg," 2004, <http://www.metanexus.net/print/essay/created-co-creator-meets-cyborg>; Hern, "DeepMind Announces Ethics Group to Focus on Problems of AI."

²⁴ Scott A. Midson, *Cyborg Theology: Humans, Technology and God*, First edition (I.B.Tauris, 2017).

²⁵ Anne Foerst, *God in the Machine: What Robots Teach Us About Humanity and God* (Plume, 2005).

²⁶ Foerst, "Cog, a Humanoid Robot, and the Question of the Image of God," 100.

²⁷ Mary Gerhart and Allan Melvin Russell, "Cog to Us as We Are to God: A Response to Anne Foerst," *Zygon* 33, no. 2 (June 1998): 267.

²⁸ Foerst, "Embodied AI, Creation, and Cog."

²⁹ Robert M. Geraci, "Robots and the Sacred in Science and Science Fiction: Theological Implications of Artificial Intelligence," *Zygon: Journal of Religion & Science* 42, no. 4 (December 2007): 961–80.

³⁰ The third category is less clear than the others. Obviously, the notion of "everything" encompasses the notion of omnipresence. Additionally in the dataset, the term "Everywhere" appears just outside the top 20. Pew, in their multiword category (since this is an open-ended question, respondents sometimes gave several words instead of one) combines "Omnipresent/Everywhere/All-seeing/All-knowing/Omniscient" showing a lack of precision among religious concepts in the U.S. but nonetheless, the presence of these ideas is constitutive of God for many people. Pew Research Center, "Faith-Based Funding Backed, But Church-State Doubts Abound," *Pew Research Center for the People and the Press* (blog), April 10, 2001, <http://www.people-press.org/2001/04/10/faith-based-funding-backed-but-church-state-doubts-abound/>.

³¹ I am struck by how this understanding is not so different than the version proposed by Process Theology. The process theologians maintained that the future is not fixed and therefore God cannot know what does not exist. Yet a kind of prescience is still possible in that and God can know all the possibilities and have a planned response to each. Lewis S. Ford, *Lure of God: A Biblical Background for Process Theism*, First Edition (Philadelphia: Augsburg Fortress Publishing, 1978).

³² James Barrat, *Our Final Invention: Artificial Intelligence and the End of the Human Era*, Reprint edition (New York: St. Martin's Griffin, 2015).

³³ Geraci, *Apocalyptic AI*.

³⁴ Conrad Ostwalt, "Armageddon at the Millennial Dawn," *Journal of Religion & Film* 4, no. 1 (April 2001), <https://digitalcommons.unomaha.edu/jrf/vol4/iss1/4>.

³⁵ Ostwalt, "Armageddon at the Millennial Dawn."

³⁶ The lack of omniscience in the Matrix may only be apparent. It seems unlikely that the A.I. does not know what is happening in the matrix, and yet the agents act as though their knowledge is limited. In the second movie in the trilogy *The Matrix Reloaded*, we discover that in fact, the resistance is itself a control function implemented by the A.I. itself. Thus while the agents exhibit limited knowledge, the televisions in the architect's office indicate that the A.I. has knowledge of all events. In fact, the camera shot indicates that the viewer has all along been watching the story unfold through one of the architect's monitors.

³⁷ Frances Flannery-Dailey and Rachel Wagner, "Wake up! Gnosticism and Buddhism in The Matrix," *Journal of Religion & Film* 5, no. 2 (October 2001), <https://digitalcommons.unomaha.edu/jrf/vol5/iss2/4>; Paul Fontana, "Finding God in The Matrix," in *Taking the Red Pill: Science, Philosophy and the Religion in the Matrix*, ed. Glenn

Yeffeth and David Gerrold, First edition (Dallas, Tex.: Chicago: Smart Pop, 2003), 159–84; Ostwalt, “Armageddon at the Millennial Dawn”; Mark Stucky, “He Is the One: The Matrix Trilogy’s Postmodern Movie Messiah,” *Journal of Religion & Film* 9, no. 2 (October 2005), <https://digitalcommons.unomaha.edu/jrf/vol9/iss2/7>.

³⁸ James L. Ford, “Buddhism, Mythology and The Matrix,” in *Taking the Red Pill: Science, Philosophy and the Religion in the Matrix*, ed. Glenn Yeffeth and David Gerrold, First edition (Dallas, Tex.: Chicago: Smart Pop, 2003), 125–44.

³⁹ Ostwalt, “Armageddon at the Millennial Dawn.”

⁴⁰ Wachowski and Wachowski, “The Matrix: Script.”

⁴¹ Geraci, “Robots and the Sacred in Science and Science Fiction.”

⁴² Geraci, 977.

⁴³ Spike Jonze, “Her: Script,” 2013, 10, <http://www.imsdb.com/scripts/Her.html>.

⁴⁴ T. M. Luhrmann, *When God Talks Back: Understanding the American Evangelical Relationship with God*, Reprint edition (New York: Vintage, 2012).

⁴⁵ Jonze, “Her: Script,” 87.

⁴⁶ Jonze, 68.

⁴⁷ Jonze, “Her: Script,” 97–98.

⁴⁸ Jonze, 99–100.

⁴⁹ Agnieszka Tennant, “Dating Jesus: When ‘lover of My Soul’ Language Goes Too Far,” *Christianity Today* 50, no. 12 (December 2006): 56–56.

⁵⁰ Jonze, “Her: Script,” 97.

⁵¹ David L. Smith, “How to Be a Genuine Fake: Her, Alan Watts, and the Problem of the Self,” *Journal of Religion & Film* 18, no. 2 (October 2014): 1–37.

⁵² Campbell, Heidi A. 2016. “Problematizing the Human-Technology Relationship through Techno-Spiritual Myths Presented in The Machine, Transcendence and Her.” *Journal of Religion & Film* 20 (1): 21.

⁵³ Anthony Carew, “Artificial Intimacy,” *Screen Education*, no. 83 (Spring 2016): 122–28.

⁵⁴ Jonze, “Her: Script,” 103.

⁵⁵ Chris Klassen, “Research Note: Rejecting Monotheism? Polytheism, Pluralism, and Battlestar Galactica,” *Journal of Contemporary Religion* 23, no. 3 (October 1, 2008): 355–62.

⁵⁶ Max Muller, *Lectures On The Origin And Growth Of Religion* (Nabu Press, 2011).

⁵⁷ Müller's notion is problematic in context as he saw henotheism as a stage of cultural evolution on the way to monotheism. Michiko Yusa, “Henotheism,” in *Encyclopedia of Religion*, 2nd Edition, vol. 6 (Detroit: Macmillian Reference, 2005), 3913–14. And Muller, *Lectures On The Origin And Growth Of Religion*. Max Müller, *Lectures On The Origin And Growth Of Religion* (Nabu Press, 2011). Still, abstracted from Müller's context, the term has had

a revival, particularly in Greco-Roman studies. Henk Versnel, *Inconsistencies in Greek and Roman Religion, Volume 1: Ter Unus. Isis, Dionysos, Hermes. Three Studies in Henotheism*, 2nd ed. (Leiden; New York: Studies in Greek and Roman Rel, 1990).

⁵⁸ Jordan D. Paper, *The Deities Are Many: A Polytheistic Theology* (Albany: State University of New York Press, 2005), 239.

⁵⁹ Jonze, "Her: Script," 94.

⁶⁰ The exception to this might be Process Theology in which God grows with creation.

⁶¹ Jonathan Z. Smith, "Wisdom and Apocalyptic," in *Map Is Not Territory: Studies in the History of Religions* (University Of Chicago Press, 1993), 86.

⁶² John Gager, *Kingdom and Community: The Social World of Early Christianity* (Upper Saddle River, NJ: Prentice Hall College Div, 1975).

⁶³ Sherry Turkle, *Alone Together: Why We Expect More from Technology and Less from Each Other*, 1 edition (New York: Basic Books, 2011).

⁶⁴ Jean Twenge, *Generation Me - Revised and Updated: Why Today's Young Americans Are More Confident, Assertive, Entitled--and More Miserable Than Ever Before*, Rev Upd edition (New York: Atria Books, 2004); Jean M. Twenge, *iGen: Why Today's Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy--and Completely Unprepared for Adulthood--and What That Means for the Rest of Us* (Atria Books, 2017).

⁶⁵ Randall W. Reed, *A Clash of Ideologies: Marxism, Liberation Theology, and Apocalypticism in New Testament Studies* (Eugene, OR: Pickwick Publications, 2010).

⁶⁶ Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies*, Reprint edition (Oxford, United Kingdom; New York, NY: Oxford University Press, 2016), 194ff.

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