A Fantasy in Sci-Fi's Clothing: Interstellar and the Liberation of Magic from Genre

James Koh, University of Illinois at Urbana- Champaign

ABSTRACT

In his film *Interstellar* (2014) Christopher Nolan depicts an outer space filled with black holes, gravitational phenomenon, ghosts, and tesseracts. As the protagonist ventures into space to find a new habitable planet, he encounters incredible scientific challenges, moral dilemmas, and religious questions. Religion and morality are established themes in space films and in science fiction, and the film was largely acknowledged for its attempts to grapple with larger ontological and religious questions. However, the film is often overlooked for its magical elements. *Interstellar* is largely a fantasy film but is also incredibly rich in science fictional tropes and themes. In this essay, I will argue that *Interstellar* can be reduced to neither a fantasy film nor a science fiction one, and that the complex relationship between science and magic are explored in a unique and artistically valuable way.

KEYWORDS

Science Fiction, Fantasy, Interstellar, Christopher Nolan, Magic, Science, Religion, Popular Culture, Film, Space

While it was Christopher Nolan's most financially successful film to date, *Interstellar* (2014) was met with a tepid critical reception that blemished Nolan's otherwise remarkably consistent body of work. The film was by no means a failure. Criticism of *Interstellar* praised the film for its dynamic use of science, and the film sparked a dialogue about religion's place in both science fiction and a scientific worldview. However, critics and audiences alike overwhelmingly felt that for all of its ambitious ideas, the film still fell flat. One reviewer wrote, "Nolan's ambition doesn't match his material this time around, leaving the picture strangely inert as it seeks to dissect the heavens," reflecting an attitude held by many critics who felt the themes of the film were not well enough fleshed out and lacked a lasting impact (Ornford).

The film's controversial resolution is at least partly responsible for this criticism. At the climax of the movie, our protagonist, Coop, heroically jumps into a black hole in the hopes of finding a singularity that would allow NASA scientists on Earth to overcome the limitations of their scientific understanding, and save themselves from environmental apocalypse. Inside the black hole, Coop finds a 'tesseract' which appears as an infinite stream of bookshelves that provide a window into the bedroom of Murphy, Coop's daughter, at different points of her life. Given the thoroughly scientific scope of the rest of the film, the composition of the black hole seems so absurdly sentimental and convenient that it can be read as a Hollywood deus ex machina, rather than a reward for the audience's intellectual investment.

Essentially, the ending disobeys the generic rules of science fiction, which demand that the protagonist use wit, logic, and reason to find a solution that remains cohesive with the previously established empirical rules of the fictional universe (Suvin 7-8; Sobchack 284). Instead, *Interstellar* borrows strategies from another genre: fantasy. Interstellar is as much about magic as it is about science or religion, yet critics generally disregard its magical elements or label them as plot holes. Magic is a fundamental and universal component of the human experience, yet it is trivialized as a subject and restricted to designated "fantasy" texts. This essay will use an anthropological lens to reexamine magic as a fundamental

cultural component, with a defined form and function that exists outside of the literary world. With an understanding of magic as a comprehensible and fundamental part of human knowledge, critics can gain a magical sensitivity that is crucial to understanding *Interstellar*'s contributions towards deconstructing the barriers that separate the science fiction and fantasy genres.

First, it is important to understand what magic is as an anthropologically defined cultural element (Malinowski 38). Magic is so often restricted to the boundaries of fantasy novels and films about witches and wizards that we understand magic solely as a literary phenomenon. As Bronislaw Malinowski, one of the twentieth century's most important anthropologists and writer of *Magic*, Science, and Religion (1954), explains, magic is an important form of social and cultural knowledge, passed down through ritual. Malinowski argues that magic, science, and religion are three distinct subsets of cultural knowledge, which act as a cohesive and dynamic system of social maintenance. It would be wrong to understand his definitions of magic, science, and religion in a colloquial sense, filled with all of the cultural baggage contemporary Western culture imparts onto each system of knowledge. Science does not necessitate the scientific method, magic is not equivalent to the occult, and religion is not always organized and theistic—though each can be these things. Malinowski explains that science, magic, and religion are specifically defined, anthropological phenomena that are present in every single culture at every stage of its being (38). This tripartite system is simply a way to understand three interrelated subsets of cultural knowledge. Each subset is defined by its universal function and each subset is shaped, both in form and degree, by the needs of the individual cultures they are serving.

Malinowski's "science" is defined as physical knowledge that can be used to consistently manipulate the environment to achieve a desired result (39). A toddler has scientific knowledge when her mom teaches her how to walk. The scientific method is unnecessary as long as she can use her knowledge to manipulate her environment. Religion is defined as a system of rules and philosophies that addresses the unknowable questions of life. Religion does not

attempt to manipulate the environment, because the truths it is concerned with like death, conflict, and failure—are inevitable facets of human life. Rather, religions create meaning beyond the edges of scientific knowledge in order to help people cope with scientific limitations. Religion lays wherever science cannot access. As soon as something is discovered, it becomes science (Hartwell 109). Hence, the top of Mount Olympus is not the home of the Greek Gods anymore, nor do we believe the planets are the Roman gods. After scientific discoveries unveil mysteries, the physical realities that are found therein can maintain their cultural importance as landmarks of the past, but their religious quality is lost. As science pushes us into further reaches of the galaxy, it constrains where religion will move and how it will evolve.

Magic is the third form of cultural knowledge that Malinowski defines, and it is the bridge between the physical world of science and the spiritual world of religion. Magic, he argues, is a natural response to the inevitable inadequacies of spiritual and scientific understanding. Cultures that value scientific understanding tend to devalue magic and mysticism, but magic is still present in all societies. In an anthropological context, it is defined as a ritualized form of optimism that connects individuals to a higher power through a physical medium or action (Malinowski 38). Science can be utilized as a physical power, but inherently cannot fully address the unknowable. Religion can address the unknowable, but cannot change physical circumstances on its own. Magic is a way to physically respond to the unknown (Malinowski 38-41). A prayer taps into the philosophy of science and physically charges it with a hope that larger mystical powers will create changes in the physical world. A lucky pen instills hope that the powers of chance and benevolence will allow a student to do well on a test. People will instinctively ask their computer nicely if it will reboot, knowing well that their pleas have no real effect. Each of these instances of magic is a response to the uncertainty of the real world that science cannot confront, and religion cannot resolve.

Interstellar examines all three subsets of cultural knowledge as an interconnected cultural matrix. However, the criticism surrounding *Interstellar*

generally misunderstands this face of the film. *Interstellar* has been praised for its use of "hard science." It uses up-to-date understandings of environmental threats, biology, physics, astronomy, and relativity to create a compelling adventure story. The astronomical sets like the glowing monolithic black hole, Gargantua, or the glassy and ethereal wormhole are feats of CGI magic. And it has been applauded for its endorsement of NASA's space shuttle program (as well as better public STEM education), which recently suffered major budget cuts to the outcry of many science enthusiasts.

The film has also been noted for its fairly blatant religious themes and motifs. The philosophical and moral conversations in the film are generally accepted as interesting, if not a bit forced (Garber). Science fiction as a genre is typically very good at imagining modified material circumstances and exploring the practical and philosophical implications of them (Hartwell 49). The agrarian, pre-apocalyptic future is incredibly topical as we confront the challenges of the Anthropocene,¹ and just close enough in the future to be plausibly threatening. The potential loss of our planet poses philosophical and religious questions about guilt, responsibility, man's place in the universe, and the possibility of a benevolent creator. And space films are especially equipped to look at the metaphysical aspects of religion because of their themes of frontier and discovery. As Barry Vacker explains, there are two essential philosophical challenges that are repeated in space films. Either humans are confronted with "cosmic nihilism" (dread in the face of realizing that there is no meaning to humanity's existence in the universe) or the "cosmic sublime" (the awe and wonder of a vast universe in which we are physically insignificant) (Vacker 5-6). Interstellar's dialogue directly addresses the possibility of a cold universe, the grandness of its scale, and the relationship between the physical world and human values. However, the focus on science and religion overshadows much of Interstellar's strengths in other departments, like fantasy.

While *Interstellar* is most certainly a bona-fide science fiction film, its sheer number of generic fantasy tropes is too significant to ignore. For one thing, the film emphasizes morality more than scientific wit or ingenuity. According to

David G. Hartwell, author of *Age of Wonders: Exploring the World of Science Fiction*, science fiction typically rewards characters for understanding the rules of their world and responding to them (45). Science fiction protagonists do not always have to solve technical problems. For example, Deckard from *Blade Runner* (1982) is not a scientist or a technician. Rather, he is a cop who succeeds as a science fiction hero because he uses his skills of detection to adapt his understanding of human existence to meet the demands of a changing world. The defining moral value of science fiction is the ability to adapt and react to a new physical world. Coop's daughter, Murphy, is more emblematic of a typical science fiction character. Her defining characteristics are her relationship with her father and her intelligence. She saves the world by receiving her father's message, and enlisting her years of research and study at NASA to decode it. Her active engagement in the narrative involves her ability to utilize the information the narrative presents her with, and the narrative rewards her with emotional closure and respect.

As opposed to science fiction, fantasy tends to reward characters for staying steadfast to their values and beliefs in the face of challenges (Sobchack 294). Fantasy characters are rewarded for staying true to their morals, and exemplifying valor, courage, loyalty, etc. in the face of paradoxes. We only need to look so far as Lord of the Rings (LOTR), Harry Potter, or Star Wars to see examples of this. The majority of major characters in *Interstellar* are rewarded or punished for their moral or immoral character, respectively. NASA leader, Professor Brand, manipulates Coop into leaving and dies in a guilt-ridden state. Dr. Mann, the first astronaut NASA sends to find a habitable planet, selfishly leaves with the crew's ship, marooning them on an icy planet. He is underprepared to navigate the ship and it explodes, killing him. He is not punished because of his inability to read the ship's manual and master it as a craft—while that is technically true, it is not the point of the narrative. He dies because he betrays the people who rescue him. On the other hand, Coop is rewarded for his moral resilience. He sacrifices everything he has to save his daughter, and even after she loses faith in him and resents him, he still plunges

into Gargantua to save her. He comes out of the black hole having saved humanity and is transported back to a prosperous earth, where he is greeted as a hero and is reunited with his daughter. The narrative rewards Coop's heroism because he is essentially a Jesus figure. While the film may deal with the physical realities of the scientific world, the moral rules of its narrative more closely resemble fantasy.

If science fiction is speculative fictional science, then fantasy is speculative fictional magic. Magic comes up multiple times throughout the film. Magic is most noticeably present in the form of the ghosts that plant the gravitational anomalies leading Coop to NASA, conjure the wormhole allowing NASA to leave the solar system, and create the tesseract in the black hole. They are perceived as powerful, fifth dimensional, benevolent beings that exist beyond human comprehension. However, the context for understanding the narrative purpose of magic in *Interstellar* requires that its magical elements enter into conversation with one of the film's religious aspects. Based on our previously established anthropological understanding, religion provides a foundation for magic. Because magic is the physical bridge between the spiritual and the physical world, the spirit of the narrative universe must be established for magic to have any symbolic or narrative meaning. The universal spirit is illustrated most pointedly in Dr. Brand's much-derided speech about love. I personally rolled my eyes in the theater during Dr. Brand's fairly confusing and seemingly unmotivated speech. One moment she is saying that the universe is cold and uncaring and twenty minutes later she is saying the opposite, and in both cases she delivers her lines in complete earnesty. Despite the contradiction, the speech is still important to the film's establishment of a spiritual world. She states:

> [L]ove isn't something we invented. It's observable, powerful. It has to mean something....Maybe it means something we can't yet understand. Maybe it's some evidence, some artifact of a higher dimension that we can't consciously perceive. I'm drawn across the universe to someone I haven't seen in a decade—who I know is probably dead. Love is the one thing we're capable of perceiving that transcends dimensions of time and space. Maybe we should trust that, even if we can't understand it yet. (*Interstellar*)

Love transcends time and space, and Dr. Brand suggests that love is a force that is beyond observation, yet is perhaps a fundamental part of the metaphysical fabric. Love becomes a part of the film's religious conception of the universe. Magic and magical worlds require a pervasive metaphysical energy source to call upon, which religion provides. Love becomes part of the metaphysical fabric of the *Interstellar* universe, but does not replace understandings of science. Gravity, relativity, and astronomy still present major obstacles, but the characters must also consider the possibility of love as a metaphysical truth. Fantasy relies on interconnectedness, associative reasoning, and the reality of the unknowable, which expands the narrative boundaries of possibility and connects all separate subjects through a unified spiritual force—like love. Love becomes disseminated through all of reality and, because the inanimate is suddenly infused with metaphysical meaning, anything symbolic in the film can become more meaningful and powerful (Sobchack 292). This allows the narrative to mobilize magic, further defining the film as a fantasy.

There are multiple magical moments throughout the film that call upon love, along with protection, as a source of power. The benevolent ghosts that create the wormhole and the tesseract are discovered later to be technologically advanced human beings from the future, but they are presented as ghosts for the majority of the film. As Dr. Brand suggests, "Whoever they are, they appear to be looking out for us. That wormhole, lets us travel to other stars. Came along right as we needed it" (*Interstellar*). The ghosts protect humankind in a way that is analogous to a benevolent and loving God. In the context of the film, the fifth dimension that they inhabit is as much of a spiritual plane as it is a scientific fact, and the beings may as well be the Holy Spirit. When they become physically active, by placing wormholes or creating messages out of dust, the characters have no explanation for the events and respond with mysticism, fear, and awe. The watch that Coop gives to Murph is a paradigmatic magical artifact that enlists Coop's love as a power source in three ways. First, it functions as a paradoxically beneficent contagion—a physical, tangible object that was touched by the spirit of

love (Sobchack 293). Second, it symbolically signifies Coop's desire to eventually return home. Third, the watch exists in Murph's bedroom, which is a spiritually rich place because of the bookshelf tesseract—which is itself another magical object. It symbolizes both love and scientific knowledge, the two most important metaphysical energies in the *Interstellar* universe. When magical elements like ghosts or artifacts appear in a conventional fantasy, it signals to the audience that larger, unknowable powers are at work. We do not need to understand how the Ring from *LOTR* operates as a source of evil power: we just need to accept that it does. The same is true with Murphy's watch and bookshelf. Rather than focusing on the improbability of the scene, the audience should take the magical artifacts as an invitation to let go of logical consistency, and accept their inability to comprehend the logic behind the magic. However, most audiences have not understood the magical symbols as such and have been left bewildered when things could no longer be explained by the rules of the empirical world. They have not been able to generically code switch, and therefore use scifi rules to try to rationalize fantasy moments.

Why have audiences been unable to understand the magical elements of the film? It would be natural to assume that audiences are simply magically illiterate and cannot naturally spot magic on their own. However, I do not believe this argument is sufficient. If the magical elements like the watch, the ghosts, or the bookshelf were in a film that was marketed as a fantasy, I think audiences would easily be able to understand their narrative function. Thus, I propose two alternative reasons for the misunderstanding of magic in *Interstellar*. First, magic has been historically devalued as a legitimate form of cultural knowledge on par with science and religion—that is, it is stigmatized in the eyes of the audience. Second, generic restrictions do not encourage audiences to read the mixture of science fiction and fantasy in a meaningful way.

The cultural role of magic has a long and oftentimes political history that has gradually led to its devaluation in western culture. Magic was present in the form of a pseudo-scientific natural philosophy, and dates back to the musings of Greek antiquity. Humoralism was a blend of magical and medicinal culture that

explained the role of the four humors-blood, yellow bile, black bile, and phlegm—in affecting health (Paster 6-14). Its role in medicine extended through medieval times and into the early modern era. As advances in anatomical and medicinal knowledge made strides, the mainstream role of humoralism gradually died. Today, however, practices such as homeopathic medicine or energy crystals, continue traditions of magical medicine in the West. Astronomy and astrology are another example of disciplinary pairings of science and magic, as are chemistry and alchemy. Advancements in science naturally lead to the retirement of magical practice. The Enlightenment was a period of booming scientific understanding, and with it came cultural changes that placed higher value on scientific reasoning. Science has always been useful to humankind, but the Enlightenment socially cemented it as a sign of modernity, western domination, and humanity's emergence from immaturity. As the West furthered its positive valuation of science, magic became associated with the past, and was used as justification to colonize "primitive" people. The Enlightenment, in other words, created a hierarchy of culture that prioritizes science over and against magic. When viewing a science fiction film, which follows this Enlightenment trend, people want explainable answers, and magic answers are unconsciously evaluated with scorn and derision. The magical answers in *Interstellar* may be viewed as a cop out, or cheating—a sentiment that has its roots in the historically-based habit of valuing science over magic. Given the strong scientific context of the film, moving from science to magic in *Interstellar* seems like a degradation of the film's themes rather than an examination of science and magic as equivalent social tools.

Magic also has a political past connected to the Church that has contributed to our cultural expectations about it. Acts like Holy Communion and baptism are magical, as are witchcraft and satanic worship. Because the role of the Roman Catholic Church was so strong and pervasive through Western Europe during the seventeenth century, magic contained political and social power, making it a very political issue for the Roman Catholic Church. The Church declared all "unnatural" magic to be witchcraft and condemnable. The Church naturalized its own forms of magic and any other form of magic was considered

heresy, thereby suppressing and restricting the role of magic (Henry 1-26). Flash forward, and witch hunting reached its height in the early-to-mid seventeenth century. By the late seventeenth century and early eighteenth century, free thinking circles in England began to articulate skepticism about witchcraft and magic. Although initially met with backlash, eventually the skepticism became mainstream and by the mid eighteenth century magic became less threatening and was termed "superstition" (Bever 1). While magic lived on through organizations like the Church, it was not understood as magic. Magic, as a word, became associated with the fringe of society, regardless of any mainstream practice. When people think about magic, the word signifies images of witches, wizards, and satanic worship. Magic as both a word and a concept has acquired so much negative cultural baggage that magical appearances in fiction may not register with audiences unless they are associated with magical symbolism. The watch and the bookshelf are taken as weird coincidences rather than obvious magical items, in part because they do not fit in with our narrow cultural expectations of acceptable forms of knowledge.

Another reason audiences may not respond well to the magic elements of the film is because of generic restrictions. Everyone knows that fantasy means dragons and science fiction means space ships. But what do we make of a film in which a dragon walks out of a space ship? The *New Statesman* recently published a conversation between Neil Gaiman and Kazuo Ishiguro about genre tropes that is helpful for understanding this issue. As the two literary luminaries explain, genre serves a purpose to the literature market as a way to label texts and market them to genre fans. People want to know that what they are purchasing is going to meet their expectations. So a science fiction lover may be upset when a sci-fi book does not meet generic standards, as will a fantasy fan. As Gaiman explains:

> That's actually a way to view all literary genres, because there are things that people who like a genre are looking for in their fiction: the things that titillate, the things that satisfy. If it was a cowboy novel, we'd need the fight in the saloon; we'd need the bad guy to come riding into town and the good guy to be waiting for him. (Gaiman and Ishiguro)

This marketing strategy creates an incentive for publishers to ask for books to meet certain generic standards and may cause writers to self-censor. As a result, texts become more referential to a genre as a whole, sometimes at the expense of their story's decontextualized purpose (Gaiman and Ishiguro). As a result of this process, sci-fi and fantasy become more and more aesthetically defined, to the point where fictive science and magic become synonymous with the aesthetic tropes of their respective genres. If you say a film is fantasy, a viewer is going to expect the aesthetic qualities of fantasy: references to a medieval past, dragons, elves, etc. Science fiction's aesthetic is almost the opposite to that of fantasy, including references to a potential future, urban setting, and technology-driven plot. The two genres are so aesthetically delimited, and this delimitation is so influential, that *Interstellar*, which is aesthetically sci-fi, lacks enough obvious aesthetic signifiers of fantasy for the audience to appreciate the way in which the film represents magic as a legitimate form of knowledge making.

Interstellar is not the first film to blend science fiction and fantasy genres, but it is unique in that it decontextualizes magic from its negative cultural and generic baggage, and places it in a conversation of equals with science. We are not meant to understand the plot gaps in a scientific way because they lie in the fantastic realm, which lies beyond our comprehension—and that is the point. The plot gaps are magic not because they involve witches or sorcerers (i.e., purely aesthetic generic markers), but because they demand the viewer to inhabit an unfamiliar mode of understanding. Sometimes, magic is the only way people can comprehend events. It is a Western instinct to say that every problem can be solved, deduced, and reduced to logic. It may be true that scientific principles govern everything. But all humans have an inherently limited ability to understand things, and instead of accepting magic as a useful social tool, westerners have distanced themselves from magic, and thereby alienated themselves from a fundamental mode of cultural knowledge production. When the film asks audience members to examine their inability to comprehend an event instead of examining their own cognitive limitations, the audience members become annoyed at the film for not providing better scientific answers. But

Interstellar is a movie about humility. In the scenes before Coop discovers who the ghosts are, it does not matter that the characters would later turn out to be corrected. Their admittance of them as ghosts was the only logical thing to call them because it was illogical. None of the characters' scientific knowledge could answer their questions about the ghosts, so they turned the ghosts into something superstitious that they could use as a reference point and as a motivator. When the tesseract defies any logical paradigm, Coop accepts his inability to fully comprehend its composition and continues with his mission, keeping focus on his moral values and ultimate goal. In that moment, the scientific progress he cares about so much at the beginning of the film no longer matters. All that matters is his love for Murph. Coop's magical understanding may not be scientifically valid, but it helps him navigate an otherwise incomprehensible world until he has the tools to properly understand it.

Interstellar explores the relationship between western magic, science, and religion. When western thought wants to compartmentalize and rationalize the universe, it is a truly humbling statement to admit that for all our pretense, the only thing really separating magic from science is our own ability to comprehend whatever we are confronted with. Westerners tend to have a superiority complex when it comes to rationalization. Western Enlightenment presents itself as logically infallible; its knowledge makes people capable of conquering anything and transcending the "primitive" magical logic that marked the medieval period. But magical thinking is a universal human quality, so it is worth some serious cultural introspection. Humans are standing at the inflection point of an exponential curve of technological and communicative advancements. As the world gets increasingly more complex, fast-paced, and incomprehensible, we are inevitably going to start to rely on associative thought more, and the role of fantasy in film and fiction is going to increase (Sobchack 291). Understanding magic and its anthropological purpose will help critics understand the meaning behind the fantasy films of the future. Magic is fun as escapism and science is a fun way to test one's brain, but without a broader context that understands both magic and science as fundamental and interrelated sources of human knowledge,

they become gimmicks rather than comments on the human experience. *Interstellar* places magic into a broader context by taking away its cultural, historical, and generic restrictions in order to examine magic's role in confronting the limits of human understanding.

NOTES

[1] The Anthropocene is a proposed epoch that begins when human activity has a significant impact on the Earth's geology and ecosystem (Borenstein).

WORKS CITED

- Bever, Edward. "Witchcraft Prosecutions and the Decline of Magic." *Journal Of Interdisciplinary History* 40.2 (2009): 263-93. Web. 2 Apr. 2016.
- Borenstein, Seth. "With Their Mark on Earth, Humans May Name Era, Too." <u>AP</u> News. Associated Press, 14 Oct. 2014. Web. 15 April 2016.
- Gaiman, Neil and Kazuo Ishiguro. "'Let's talk about genre': Neil Gaiman and Kazuo Ishiguro in conversation." *New Statesman*. New Statesman, 4 June 2015. Web. 30 March 2016.
- Garber, Megan. "Interstellar Isn't About Religion (and Also It Is Totally About Religion)." The Atlantic.com. Atlantic Monthly, 12 Nov. 2014. Web. 25 Jan. 2016.
- Hartwell, David. Age of Wonders: Exploring the World of Science Fiction. New York: Tom Doherty Associates, 1996. Print.
- Henry, John. "The Fragmentation of Renaissance Occultism and The Decline of Magic." *History Of Science* 46.1 (2008): 1-48. Web. 2 Apr. 2016.
- Interstellar. Dir. Christopher Nolan. Perf. Matthew McConaughey, Anne Hathaway, Jessica Chastain, Michael Caine. Paramount Pictures and Warner Bros. Pictures, 2014. DVD.

Malinowski, Bronislaw. "The Role of Magic and Religion." *Reader in Comparative Religion: An Anthropological Approach*. Ed. William A.
Lessa and Evon Z. Vogt. 4th ed. New York: Harper and Row, 1979. 37
46. Print.

- Ornford, Brian. "Interstellar Review." *Blu-ray.com*. Blu-ray, 5 November, 2014. Web. 2 March 2016.
- Paster, Gail Kern. *The Body Embarrassed: Drama and the Disciplines of Shame in Early Modern England*. Ithaca: Cornell UP, 1993. Sobchack, Vivian.
 "Sci-Why?: On the Decline of a Film Genre in an Age of Technological Wizardry." *Science Fiction Studies* 41.2 (2014): 284-300. Web. 30 Mar. 2016.
- Suvin, Darko. Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre. New Haven: Yale UP, 1979.
- Vacker, Barry. "What Does It Mean? Confronting Nihilism and the Sublime."
 Moonwalking Into the Future: Confronting Nihilism and the Sublime in
 Space Narratives—From Apollo and Hubble to 2001, Star Trek, and
 Interstellar. Philadelphia: Center for Media and Destiny, 2016. 1-46. Print.