Audiovisual representations of Artificial Intelligence in Dystopian Tech Societies: Scaremongering or Reality? The Cases of Black Mirror (Charlie Brooker, 2011), Ex Machina (Alex Garland, 2017) and Her (Spike Jonze, 2014)

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DOCTORAL THESIS

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ACKNOWLEDGEMENTS

First and foremost, I would like to express my sincere gratitude to my parents, who have blessed me with their support in this adventure throughout the past four years. Furthermore, I would like to thank all my friends who contributed in any way, be it suggestions or editing, especially Vinh Pham of Cornell University, a fellow PhD candidate.

I would also like to acknowledge my undergraduate professor Dr. Joanne Sayner who sparked my interest in cultural studies. And finally, a special thanks to Dr. Klaus Zilles and Dr. Sue Aran Ramspott for providing me with invaluable insights, as well as your guidance throughout this process.

This thesis would not have been possible without all of you.

ABSTRACT

Artificial Intelligence has been a concept that has infatuated humankind for millennia. Since antiquity, humans have been obsessed with the idea of creating a perfect artificial human for different aims such as companionship or domestic help, and ancient cultures have devoted foundational texts to the artificial human. This literary occupation gradually evolved into proto-fantasy or proto-Science Fiction literature in the early middle ages. However, it wasn't until the 19th century that Mary Shelley's influential work *Frankenstein* (1818) brought together different aspects of creating an artificial human discussed within a broader social and psychological understanding.

With the advent of audiovisual media in the 20th century, such representations of artificially created humanoids or other creations with some degree of consciousness have populated both the silver screen and television. This thesis focuses on the societal connections between such representations of Artificial Intelligence, focusing on the TV show *Black Mirror* (Charlie Brooker, 2011) as well as the films *Ex Machina* (Alex Garland, 2014) and *Her* (Spike Jonze, 2014) by analyzing the Artificial Intelligence - human relationships from a variety of different perspectives and paradigms. The audiovisual analyses of the selected works are then followed by an examination of how such recent technological developments are taking place in our current society. These texts under examination exhort us to beware the potential dangers of AI technology, which require implementation of strict regulations around the Artificial Intelligence framework in order to alleviate human anxieties about technology.

Keywords: Artificial Intelligence, technology, technology and society, Science Fiction, dystopia, film studies, society

RESUM

La intel·ligència artificial ha estat un concepte que captiva la humanitat des de fa mil·lennis. Des de l'antiguitat, els humans estan obsessionats amb la idea de crear un ésser humà artificial perfecte amb diferents objectius, com ara la companyia o l'ajuda domèstica, i han escrit sobre ells en textos antics de diverses cultures. Això va evolucionar cap a la literatura de protofantasia o protociència-ficció a l'alta edat mitjana. Tanmateix, no va ser fins al segle XIX que la influent obra de Mary Shelley, *Frankenstein* (1818), va reunir diferents aspectes de la creació artificial de vida humana artificial en el debat d'una comprensió psicològica social més àmplia.

Amb l'arribada dels mitjans audiovisuals al segle XX, aquestes representacions dels humanoides creats artificialment o d'altres creacions amb cert grau de consciència han poblat tant la gran pantalla com la televisió. Aquesta tesi se centra en les connexions socials d'aquestes representacions de la Intel·ligència Artificial, a partir de la sèrie de televisió *Black Mirror* (Charlie Brooker, 2011), així com en les pel·lícules *Ex Machina* (Alex Garland, 2014) i *Her* (Spike Jonze, 2014), per tal d'analitzar la relació entre la Intel·ligència Artificial i els humans des de perspectives i paradigmes diversos. L'anàlisi audiovisual de les obres seleccionades és seguida d'una exploració de com s'estan produint aquests recents avenços tecnològics en la nostra societat actual, per relacionar-los amb les advertències que proposen les obres seleccionades i que ofereixen una lectura per al futur que requereix la implementació de normatives estrictes sobre la Intel·ligència Artificial per tal d'alleujar les angoixes humanes respecte a la tecnologia.

Paraules clau: Intel·ligència artificial, tecnologia, ciència ficció, distopia, estudis cinematogràfics, societat

RESUMEN

La inteligencia artificial es un concepto que fascina a la humanidad durante milenios. Desde la antigüedad, los humanos han estado obsesionados con la idea de crear un humano artificial perfecto para diferentes fines, como la compañía o la ayuda doméstica, y han escrito sobre ello en textos fundacionales de diversas culturas. Esto se convirtió progresivamente en literatura de proto-fantasía o proto-ciencia ficción en la Alta Edad Media. Sin embargo, no fue hasta el siglo XIX cuando la influyente obra *Frankenstein* (1818) de Mary Shelley reunió diferentes aspectos de la creación de un ser humano artificial, discutidos dentro de una comprensión psicológica y social más amplia.

Con la llegada de los medios audiovisuales en el siglo XX, estas representaciones de humanoides creados artificialmente o de otras creaciones con cierto grado de conciencia han poblado tanto la gran pantalla como la televisión. Esta tesis se centra en las conexiones sociales de dichas representaciones de la Inteligencia Artificial, centrándose en la serie de televisión *Black Mirror* (Charlie Brooker, 2011), así como en las películas *Ex Machina* (Alex Garland, 2014) y *Her* (Spike Jonze, 2014), analizando las relaciones entre la Inteligencia Artificial y los humanos desde una variedad de perspectivas y paradigmas diferentes. El análisis audiovisual de las obras seleccionadas va seguido de una exploración sobre cómo estos avances tecnológicos recientes se están produciendo en nuestra sociedad actual, vinculándolos con las advertencias que formulan las obras seleccionadas y ofreciendo una lectura de futuro que requiere la implementación de una estricta normativa en torno a la Inteligencia Artificial para aliviar las ansiedades humanas sobre la tecnología.

Palabras clave: inteligencia artificial, tecnología, sociedad, ciencia ficción, distopía, estudios cinematográficos.

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INTRODUCTION

1. Motivations and Overview

The motivation to carry out this research is based on two starting points. The first is my exposure to and interest in science fiction films, (also abbreviated as SF throughout this thesis) and television shows, which specifically represented main characters that were a type of Artificial Intelligence (AI). The second is more theoretical: the allure of AI, a concept and sometimes a body that has been of interest to the human imagination for millennia, as well as a reality that is becoming increasingly more prominent in contemporary society through technological advances. Both in the human imagination and in our society, AI features in many difficult contexts both metaphorically and literally, such as: science fiction texts (visual and literary), the internet, video games, robots of many forms and purposes, Virtual Reality (VR), chat-bots, the arms industry, neuroscience, quantum computing, and various engineering fields such as aerospace and bio/nano-engineering. Witnessing the representations of AI in cinema and TV alongside the contemporary developments in the same field inspired me to explore the intersection between fiction and reality. Therefore, my thesis is motivated by the interplay between the two different spaces that AI occupies, namely the real and the virtual.

The idea that fiction, in the case at hand, science fiction cinema and TV, and reality, represented by the technological developments in our contemporary society, were in a close interplay with each other, came to me first when I was a BA Culture, Society and Communication student at the University of Birmingham (2009-2012). I am very lucky to have studied under professors who had been students of Stuart Hall, who founded the Birmingham Centre for Contemporary Cultural Studies in the 60s and established the study of cultural artifacts such as music, film and TV as a critical instrument for analyzing society. By critically studying films from different genres under different perspectives for my Film Studies module, I found that many aspects of AI beings represented in films such as *Blade Runner* (Ridley Scott, 1982), based on the book *Do Androids Dream of*

Electric Sheep? by Philip K. Dick (1968) were more and more real. I remember the headlines when NASA's humanoid AI Robonaut2 was sent into space to help the astronauts with their daily tasks, as well as the unveiling of Roxxxy, the world's first AI sex robot (Hough, 2010; Jha 2010). Indeed, there are numerous robots that were created as early as the 1960s and later on in the 2000s, such as the first industrial robot Unimate (by George Devol in 1961) and the humanoid boy robot ASIMO (by Honda in 2000), named after the famous science fiction writer and biochemist Isaac Asimov.

Perhaps one of the more recent events that highlighted how much technology is influencing our contemporary society was the arrival of the *Black Mirror* TV series, which first aired on the UK's Channel 4 in 2011. The TV anthology series, with stand-alone episodes that delved into different aspects of the human-technology relationship, generated a high public interest and stellar reviews (Hooton, 2011). As it was initially a British production (although later picked up by Netflix), and a topic of daily conversation, it also became a focus of interest of my tutors and professors at the university. We discussed the show in class and seminars as an example, which perfectly encapsulated postmodernity, with its fragmentation of technology, surveillance and reality.

I was a Creative Writing MA student at Kingston University (2013) when *Her* (Spike Jonze, 2014) and *Ex Machina* (Alex Garland, 2014) debuted closely after *Black Mirror.* As I had chosen the screenwriting track under my Master's program, I was still closely affiliated with film studies. These films gave further impetus to my interest in science fiction's interaction with reality. When I decided to continue my academic career with a PhD degree in Communication at the Blanquerna School of Communication and International Relations of the Ramon Llull University (Barcelona) in 2016, I knew that these audiovisual examples would be the perfect analysis materials for my research.

As I have chosen to focus on the interplay between reality and fiction, more specifically on how the technology imagined in science fiction is interwoven with the technological advances in AI in the real world, I started some research. One of the books I came across was *Ten Billion Tomorrows: How Science Fiction Technology Became Reality and Shapes the Future* by Brian Clegg (2015). Clegg studies many different examples of science fiction literature from HG Wells to Asimov as well as TV shows such as *Doctor Who* (1963, 2005) and films like *2001: A Space Odyssey* (1968) and *The Matrix (*1999*).* He takes a motif, such as aliens, and based on the human/alien interaction from HG Wells' *War of the Worlds* to TV's *X-Files* to Cinema's *E.T*, provides accounts of real life attempts to get in touch with aliens. He looks at humanity's attempts by sending out radio signals to the universe, and also radio signals that real scientists in real life have received as far back as 1968 that were unexplained, and as such were dubbed as "probable alien contacts" (Clegg 2015, p.183). Other technologies in which he compares and contrasts reality and fiction are space travel, ultra-technological weapons, time travel and even lightsabers and holographic images from *Star Wars* and *Star Trek*. As a Cambridge University graduate of physics, many of his analyses are based on science, rather than within the perspective of cultural or communication studies. Nevertheless, he does present a wide range of motifs that recur in SF (both literature and audiovisual) and their technological and scientific development in real life. He concludes that SF is a perfect point for starting to imagine- and making the imaginary available through technology and innovation, with an implicit impact on our society.

Although Clegg's research is a good starting point, in terms of discipline, my thesis focuses more specifically on the relationship between AI representation in SF film and TV and contemporary society. One of the approaches I take being cultural studies, I aim to explore human-AI and society-AI interactions depicted in the audiovisual media instead of exclusively placing the technical and mechanical aspects of AI technology in the foreground.

Moreover, the aim of this thesis is not to present a history of Artificial Intelligence in science fiction audiovisual media, nor does it aim to review the history of Artificial Intelligence's scientific development. Although I review these in order to give the reader a broader sense of the topic, they are not my main objectives. My interest is more precise: placing science fiction audiovisual examples focusing on AI within a wider social context to examine the interplay between SF and reality in relation to Artificial Intelligence. The focus of my thesis, therefore, will be on how the selected science fiction audiovisual *texts* and the AIs in them, function as an arena in which the conceptual issues of the AIs represented can be studied in current audiovisual narratives. In line with this, I will be adopting a cultural studies point of view that sees audiovisual media and popular culture as social practices (Kellner, 2009; 2011).

Accordingly, I will be taking the AIs in my selected audiovisual corpus of study as representations of the postmodern condition, in which 'grand narratives' such as identities, histories and beliefs are shattered and are taken over by technology and surveillance (Denzin, 1991; Kellner and Best, 1997). In my thesis, I argue that the representations of AI in audiovisual media cannot simply be taken as utopian or dystopian fiction (literary or visual) terms, but are complicated and characteristic of the postmodern condition in which fears and anxieties about social, technological and economic changes are predominant.

I will be conducting analyses on the sample that I have chosen applying the selection criteria, which present different kinds of AIs, and different types of human and AI relationships that fall into the range of audiovisual science fiction texts. Therefore, the method of my analysis as such will employ AIs in science fiction audiovisual texts as a medium through which I will study sociocultural issues and their interaction with reality. Therefore, my theoretical approaches in this thesis are threefold: a) postmodern, b) poststructuralist and sociosemiotics, and a c) social and cultural approach. I will be taking a postmodernist approach

to technology and the reality/fiction dichotomy, especially in the representation of the AI bodies. The post-structuralist approach will also help me with the signifier/signified semiotic dichotomy for making sense of how the AIs are audiovisually represented in my selected audiovisual productions. Lastly, the sociocultural aspect will enable me to shed light on some of the social fears embedded in the human psyche, which can be explained through post-structuralist dichotomies such as “us vs. them”, and what they represent in different forms of cultural setting.

2. Objectives

This thesis aims to adopt a postmodern/poststructural/cultural and social approach within the domain of cultural studies in order to study three recent science fiction films and TV shows to map out the representations of AIs, as well as looking at the interplay between fiction and reality, together with societal and individual fears. As such, our objectives are:

1. To analyze how contemporary Science Fiction popular cinema and TV series reflect (hegemonic) cultural and symbolic tradition about the creation of AI.
2. To identify how some recent (2010-2015) fictional audiovisual productions represent AI in the frame of the (hegemonic) cultural and symbolic tradition about the creation of AI.
3. To recognize the discourse around recent AI fictional audiovisual productions related to the interplay between fiction and reality, together with current postmodern societal and individual fears.

By the end of this thesis, I hope the reader reaches a better understanding of what AI represents in SF film and TV and what it reveals about fears embedded in our society. We live in an age in which what was once fantasy can very quickly become a reality. As humans, we often first imagine something and represent it in an art form like fiction, in literature, cinema, or TV. I believe that AI is a perfect example of this process. Centuries ago, humans dreamed of creating AI and they wrote about it. Now it is finally becoming a reality. Our thesis aims to show humanity's long standing fascination with artificial, or man-made, intelligence over thousands of years, and how these fascinating phenomena, which were once fantasy, are turning into actual, operative technology. It is possibly only a matter of time before the AIs become more widespread, and many people will be able to own one, as is the case in the audiovisual *texts* I have chosen to study.

3. Structure of the Thesis

After the introduction, this thesis will consist of nine main chapters. In the introduction, I have discussed the motivations behind writing this thesis together with an overview of the interest in the Artificial Intelligence topic. The theoretical framework, objectives and research questions have just been presented. Hereafter, the first two chapters will present the key concepts and history behind Artificial Intelligence. Chapter three will explore some of the oldest examples of artificial humanoid representations, which were the predecessors of our current understanding of AI. Starting with Greek mythology, this chapter looks at how humanity imagined and fantasized about creating artificial life and humans over a millennia ago. Subchapters follow the fascination with creating artificial life throughout the Middle Ages, broken down by different religious practices, as artificial creation was seen as a hybrid between playing God and science in most of the Abrahamic religions. This will give the reader a context for AI, and its beginnings as myths, religious practices, or fantasies.

Chapter four focuses on the history of science fiction as a narrative genre, along with subgenres such as utopian and dystopian fiction, which will be analyzed in order to show how they reflect society's relationship with technology. The first subchapter highlights the emergence of science fiction as a literary genre. It also explores the relationship between science fiction and society since, following the invention of the Gutenberg press, these texts were available to a much wider range of people compared to their counterparts in Antiquity or in the Middle Ages. In chapter five, I take a closer look at audiovisual science fiction films and TV, how they differ from literature, and the different ways in which technology was portrayed. Chapter six will explain and implement the methodology, including selection criteria.

Chapter seven will analyze the three audiovisual examples to best encapsulate the current state of our relationship with technology. *Black Mirror*

(Charlie Brooker, 2013), *Ex Machina* (Alex Garland, 2014) and *Her* (Spike Jonze, 2014) will have their respective analysis sections. Their representations of AIs will be compared and contrasted in order to outline the way in which that technology is depicted in relation to humans and society. I will also analyze the three audiovisual texts in terms of their narrative and different aesthetic devices such as light, costume, camera angles, cinematography, and so on.

Next, in chapter eight, I will present an analysis of recent developments in AI technology and its effects on society, and show how they relate to the examples. I will then demonstrate how some fiction in literature, film and TV has been evolving together with reality or vice versa.

Finally, in Chapter nine, we will present our conclusions from the analysis of the representations of the society-technology relationship in the audiovisual examples vis-à-vis the developments taking place currently, as well as mentioning limitations and possible future lines of research.

1. THEORETICAL FRAMEWORK

The first important approach in this thesis is a social and cultural one. In this regard, I will use the realm of Cultural Studies.

> In recent years, Cultural Studies has emerged as a set of approaches to the study of culture and society. The project was inaugurated by the University of Birmingham Centre for Contemporary Cultural Studies, which developed a variety of critical methods for the analysis, interpretation, and criticism of cultural artifacts…. For cultural studies, media culture provides the materials for constructing views of the world, behavior and even identities…cultural studies insist that the culture must be studied within the social relations and system through which culture is produced and consumed and that thus study of culture is intimately bound up with the study of society, politics and economics. It can enhance individual sovereignty vis-à-vis media culture and give people more power over their cultural environment (Kellner, 2011, pp. 7-9).

To be more specific, in terms of science fiction's relationship with society, Annette Kuhn puts forward a reflective model as a subset of cultural studies, as she argues that the "overt contents of science fiction films are *reflections* of social trends and attitudes of the time, mirroring the preoccupations of the historical moment in which the films were made…films are treated as, in a sense, sociological evidence" (Kuhn, 1990, p.10).

Within Cultural Studies, with Stuart Hall being one of its founders, his encoding/decoding theory is also worth mentioning for this thesis as it is an instrumental one for content analysis. Hall writes:

> Thus while in no way wanting to limit research to following only those leads which emerge from content analysis, we must recognize that the discursive form of the message has a privileged position in the communicative exchange (from the viewpoint of circulation), and that the moments of 'encoding' and 'decoding' though only 'relatively autonomous' in relation to the communicative process as a whole, are *determinate* moments. (Hall, 1980, p. 129).

Through this concept Hall suggests that new media, such as TV shows/programs, are actively decoded by the viewer of these type of contents. The semantic codes of the culture of a person viewing the signs come into play, as well as the audience's ideology. As a result, there can be a plethora of interpretations of a single given TV show, according to who views it, and that person's cultural background, ideology or bias. The interpretations in this thesis are thus of the authors' themselves, and they stem from their cultural positions.

The second approach thesis takes is postmodernity. Postmodernity is a useful approach to make meaning of our society and epistemological condition. The French philosopher Lyotard, known for his articulation of postmodernism, approaches postmodernity from the viewpoint that, as a society, we no longer should believe in metanarratives of science, history or nationalism, as "the narratives we tell to justify a single set of laws and stakes are inherently unjust" (Lyotard, 1984, p.34). Hence, micro or small narratives are the way to explain social transformation and political problems. He encapsulates the way of postmodern life thus:

> The degree zero of contemporary culture: one listens to reggae, watches a Western, eats McDonalds for lunch and local cuisine for dinner, wears Paris perfume in Tokyo and wears retro clothes in Hong Kong, knowledge is a matter of TV games (Lyotard, 1984, p.76).

According to Lyotard, reality is subjective and there cannot be an objective, all-general truth or knowledge that is universally accepted. Science fiction texts often reflect this, as many characters and plots are tools for exploring and making sense of social transformation and political issues.

Another influential figure for this thesis is the American literary critic and Marxist political theorist, Frederick Jameson. Not only does he describe the postmodern condition as a part of a late capitalist society increasingly mass-mediated on a transnational scale, but he also coins new meanings for pastiche

and schizophrenia that are inherently different. In terms of pastiche, Jameson views it as:

> The disappearance of the individual subject, along with its formal consequence, the increasing unavailability of the personal style, engender the well-nigh universal practice today of what may be called pastiche (Jameson, 1991, p.15).

Drawing upon De Saussure's semiotics, and offering an argument similar to Lyotard's, Jameson takes on a Lacanian and poststructuralist stance in a new way that detaches terms from their traditional medical meanings. Talking about schizophrenia, Jameson argues that:

> The proposition that meaning is not a one-to- one relationship between signifier and signified, between the materiality of language, between a word or a name, and its referent or concept or historicity. Meaning on the new view is generated by the movement from signifier to signifier. What we generally call the signified -- the meaning or conceptual content of an utterance -- is now rather to be seen as a meaning-effect, as that objective mirage of signification generated and projected by the relationship of signifiers among themselves. When that relationship breaks down, when the links of the signifying chain snap, then we have schizophrenia in the form of a rubble of distinct and unrelated signifiers (Jameson, 1991, p. 25).

As a result, the term schizophrenia here is not so much a medical concept that implies the person is delusional or hysterical, but which puts forward the idea that the self is de-centered and coreless.

For his part, Jean Baudrillard, the sociologist and post-structuralist, a contemporary of other French thinkers including Lyotard and Lacan, also provides useful concepts to understand and approach the analyses of this thesis. As postmodernism is deeply concerned with the perspectives of what is real, and what is true knowledge, Baudrillard offers invaluable ideas in this regard. One of his key concepts is hyperreality, which he describes as:

> The everydayness of the terrestrial habitat hypostatized marks the end of metaphysics, and signals the era of hyperreality: that which was previously mentally projected, which was lived as a metaphor in the terrestrial habitat is from now on projected, entirely without metaphor, into the absolute state of simulation (Baudrillard, 2012, p.23).

As he was predominantly writing in the 1980s, his observations about the hyperreal mainly relate to television and film. However, they are still very much applicable to today, with the internet and new screens, as these are increasingly becoming more widespread in their use than TV. Our lives are constantly exposed on social media, what we are doing, how we are feeling, who we are with. The smallest details such as what we are wearing or eating are inextricable contents that we voluntarily put out there in the cyberspace. Our real experiences, in the flesh, become digitalized and served up to our friends and acquaintances- even to complete strangers- through the medium of the internet. This can be described as Baudrillard's definition of the "obscene":

> … When everything becomes immediately transparent, visible, exposed in the raw and inexorable light of information and communication…. We no longer partake in the drama of alienation, but in the ecstasy of communication…obscenity is not confined to sexuality, because today there is a pornography of information and communication, a pornography of circuits and networks, of functions and objects in their legibility, availability, regulation, forced signification capacity to perform, connection polyvalence, their free expression… (Baudrillard, 2012, pp. 26-27).

Again, although he was talking about television, his ideas are completely and utterly applicable to today's Internet culture and the omnipresence of screens and smartphones. He successfully predicted the rise of social media and the obscenity of endless sharing of personal experiences on screens as a mode of self-expression some 30 years before it became prevalent.

Another reason why Baudrillard is so relevant to this thesis is because he openly speculated about the impact some kind of AI would have on society in the future.

> The religious, metaphysical or philosophical definition of being has given way to an operational definition in terms of the genetic code (DNA) and cerebral organization. We are in a system where there is no more soul, no more metaphor of the body- the fable of the unconscious has lost most of its resonance. No narrative can come to metaphorize our presence; no transcendence can play a role in our definition; our being is exhausting itself in molecular linkings and neuronic convulsions… there

> are no more individuals, but only mutants. From a biological, genetic, and cybernetic point of view, we are all mutants. It will have changed formula, chromosomes, it will have been programmed according to other motor and mental variables, it will no longer have any claim on its own image. (Baudrillard, 2012, p.47).

What Baudrillard suggests here is similar to that of Jameson's idea of schizophrenia. Baudrillard is saying that we are so fragmented as human beings to an extent that will be apparent in our genetic and biologic make-up. It will come to a point where we are not even in our human bodies *per se* anymore, but will have transferred to another realm as mutants, which is completely different to what we know now. According to Baudrillard, as a result of the postmodern condition, humanity is such a highly fragmented state, not only mentally but corporally too. Therefore, it can be argued that the post-human as a postmodern subject is also a common thematic under the postmodern scheme, as other scholars also recognize (Haraway, 1991; Hayles, 1999; Fukuyama, 2002). The analysis part of this thesis will further illustrate the post-human subjects as AIs and their relationship with humans.

The third approach I take in this thesis is post-structuralism. In fact, it is the same questioning of the two aspects on which modern culture is based: the positivism of the Anglo-American tradition and the idealism of the Franco-German tradition (Campillo, 1995, p. 59). Jacques Derrida was also another influential figure coining post-structuralism. Drawing upon de Saussure's semiotics, like Lyotard, he worked on deconstructing meaning and representation, which was important to achieve subjective truths (Peters, 2009). Another major post-structuralist, Michel Foucault, with whom Derrida had his similarities and differences (Campillo, 1995), emphasized the notion of discourse, and the relationship between power and knowledge in multiple books (Foucault 1969, 1982, 1984). According to Foucault:

> We set out with an observation: with the unity of a discourse like that of clinical medicine, or political economy, or natural history, we are dealing with a dispersion of elements. This dispersion itself—with its gaps, its discontinuities, its entanglements, its incompatibilities, its

> replacements, and its substitutions—can be described in its uniqueness if one is able to determine the specific rules in accordance with which its objects, statements, concepts, and theoretical options have been formed: if there really is a unity, it does not lie in the visible, horizontal coherence of the elements formed; it resides, well anterior to their formation, in the system that makes possible and governs that formation (Foucault, 1969, p.80).

To simplify, Foucault argues that things make sense in their context, which is the predominant discourse to create meaning for any given thing. This ties in with "the Singularity event", which means the AIs overtaking human intelligence in the foreseeable future, as I explain in detail in the AI: Key Concepts chapter. The audiovisual examples of this thesis seem to give some recognition to the Singularity somehow, and postmodern theorists appear to have presented ideas that may be linked with it. More on this in chapter seven, where we analyze the case studies.

Associated with the Frankfurt School of Critical Theory, the German-American political theorist Marcuse argues in his book *One Dimensional Man* (1964) that either advanced industrial society would be capable of containing qualitative changes for the foreseeable future, or forces and tendencies may break this containment and "explode the society" (Marcuse, 2013, p. xlvii). In other words, humanity will either advance in a way that will provide an over-arching technology that helps all human beings, which would be willingly accepted, or humans will see it for what it is and reject it, which would be catastrophic.

He further extrapolates the concept of an exploding society as "humanity's repressive subjection to the productive apparatus…is perpetuated and intensified in the form of many liberties and comforts" (Marcuse, 2013, p. 32). Therefore, since the apparatus (including the system and technology), is providing humans with comforts, such as screens and Internet, we are less likely to fight against it, as we do not want to give up our comforts. Like Foucault, Marcuse thought that new forms of social control would be through entertainment culture and modern technology (Marcuse, 2013).

As we will elaborate on in their respective chapters, films and TV series are “reactionary” (Keane, 2006, pp. 44 - 55) to their eras, such as the 1950s monster films, which are reminiscent of the Cold War, or the 1970s disaster films which reflect the Vietnam War and man-made hazards. They are reactions to the zeitgeist of their times (Drosnin 1997; Keane 2006). Therefore, it is only fitting that after the 2010s, as robotics and AI became an increasingly hot topic, films represent and reflect thoughts and concerns about it (Gonzalez and Dvorsky, 2014; Dockrill, 2016; Gershgorn, 2016; Pandya, 2019; Strait *et al* 2017; Hamilton, 2018). Moreover, Kuhn highlights what SF films do for its spectators, namely evoking pleasure and activating some fantasies, as well as creating social discourse and cultural meaning (Kuhn, 1990, p.10-15). Hence, as cultural studies suggest, films and TV are inextricably linked to the historical and societal elements surrounding them when they are produced.

In addition to the social reflections, fantasies, discourses and meanings, another factor should also be mentioned: social fears. In this regard, SF films & TV not only convey stories as entertainment, but also as a part of a wider social impact that the prevalent reflections from real life might have on us. Kuhn phrases this as “films are seen either as mirroring attitudes, trends and changes in society (social preoccupations) or as expressing the collective psyche of an era (social psychological preoccupations)” (Kuhn, 1990, p. 16). We will extend “films” to audiovisual media so that it can include TV shows, and also call this notion ‘social fears’. Through the representations of AIs, we want to show that our selected audiovisual examples present social fears of technology and how its interplay with reality increasingly preoccupies people.

The previously mentioned approaches act as a basis of the variables/categories for the analysis of this thesis. Psychoanalysis builds upon these approaches and is partly useful to this study of audiovisual examples. Christopher Metz, the French film theorist that is amongst the first to apply

Freudian and Lacanian theories to film, explains the importance of psychoanalysis to cinema as such:

> Reduced to its most fundamental approach, any psychoanalytic reflection might be defined in Lacanian terms as an attempt to disengage the cinema-object from the imaginary and to win it for the symbolic, in the hope of extending the latter by a new province: an enterprise of displacement, a territorial enterprise, a symbolising advance; that is to say, in the field of films as in other fields, the psychoanalytic itinerary is from the outset of a semiological one, even (above all) if in comparison with the discourse of a more classical semiology it shifts from attention to the *énonce* to concern for the *énonciation* (Metz, 1975, p. 14).

Therefore, approaching a film or a TV show from a psychoanalytic perspective will allow us to view and analyze it in terms of its symbolism and semiology, also by focusing on how the story is narrated rather than what is narrated directly (*énoncé* vs *énonciation*, Metz, 1975). By focusing on and analyzing how the story is narrated through symbolisms, we can understand the overall message more efficiently and more in depth.

Keith Johnston argues that psychoanalysis is a key method to employ when studying science fiction audiovisual examples as:

> Psychoanalysis of cinema as an institution has claimed film is a potent medium because of its link to dreams and unconscious states: within that, science fiction film can be seen as a central exploration of the fantastic and unusual, a genre predicated on the display of bizarre and incredible vistas and illusions. The science fiction genre is, in this reading, literally one of dreams and possibilities. Psychoanalytic criticism offers a route to explore the layers of repressed meaning contained across such genre films (Johnston, 2013, p.34).

As a result, it can be said that psychoanalysis can help us, as the analyzer, in order to understand how science fiction works represent fantasies, fears and desires, both on an individual and on a societal level, more pertinent for this thesis.

Linked to this theoretical approach, one source we use in this thesis that deeply taps into societal fears and the unconscious is Barbara Creed's, *The Monstrous Feminine* (first published in 1993). Drawing upon Julia Kristeva, who is greatly influenced by De Saussure and Lacan herself, and coming also from a feminist and psychoanalytical approach, she explains the "unknown", or the uncanny, by utilizing the us *versus* them dichotomy, one commonly used in SF in terms of humans vs. aliens or humans vs. AIs, which I have also used in our corpus analysis. Also, in *The Monstrous Feminine* (Creed, 1993) she puts forward a discursive view of how the female body is seen as a "monster", and discusses how horror and SF films use this structure to distinguish the feminine and the masculine from each other. This is deeply embedded within our social and cultural norms, as we will see further in the analysis part.

Technology is an intrinsic part of science fiction texts, and a major source of fear in real life, especially because it develops and changes very quickly – which represents the unknown, the uncanny "other" that we will elaborate on in the analysis chapters.

2. ARTIFICIAL INTELLIGENCE: KEY CONCEPTS

This chapter aims to lay out some key concepts related to artificial intelligence, such as consciousness and whether or not AIs can be regarded as human beings. First of all, the categorization of AI through previous scholarship as provided by Russell and Norvig (2003) and as summarized by Breen (2020) is required. According to Breen (2020, pp.109-110), AI can be categorized into four types:

> 1) Systems that think like humans:
> "The exciting new effort to make computers think ... machines with minds, in the full and literal sense (Haugeland, 1985)."
> "The automation of activities that we associate with human thinking, activities such as decision-making, problem-solving, learning (Bellman, 1978)."
>
> 2) Systems that reason:
> "The study of mental faculties through the use of computational models (Charniak and McDermott, 1985)."
> "The study of the computations that make it possible to perceive, reason, and act (Winston, 1992)."
>
> 3) Systems that act like humans:
> "The art of creating machines that perform functions that require intelligence when performed by people (Kurzweil, 1990)."
> "The study of how to make computers do things at which, at the moment, people are better (Rich and Knight, 1991)."
>
> 4) Systems that act rationally:
> "A field of study that seeks to explain and emulate intelligent behavior in terms of computational processes (Schalkoff, 1990)."
> "The branch of computer science that is concerned with the automation of intelligent behavior (Luger and Stubblefield, 1993)."
> "The designing and building of intelligent agents that receive percepts from the environment and take actions that affect that environment (Russell and Norvig, 2003)."

This thesis uses a History of Science perspective to define AI, in order to apply it to the audiovisual representation later on. So, it is a mixture of the above definitions based on the intelligence and rationality issues. This thesis also incorporates a philosophical perspective. This is why consciousness and

singularity are also main notions for this thesis, as different philosophers have different opinions on what they are, and they are paramount to our understanding of AI, personhood and what it is to be human. Philosophy offered a perspective on these notions long before actual codes could be written or experiments be conducted. Let's start with the philosophical approaches to the notion of intelligence.

Rene Descartes (1596-1650) was considered to be a leading figure in modern philosophy. In his *Discourse on the Method* of 1637, he coined his signature doctrine of mind-body dualism, influenced by physics and theology which made him one of the main philosophers who wrote about whether or not machines could think:

> How many different automata or moving machines can be made by the Industry of man [...]. For we can easily understand a machine's being constituted so that it can utter words, and even emit some responses to action on it of a corporeal kind, which brings about a change in its organs; for instance, if touched in a particular part it may ask what we wish to say to it; if in another part it may exclaim that it is being hurt, and so on. But it never happens that it arranges its speech in various ways, in order to reply appropriately to everything that may be said in its presence, as even the lowest type of man can do (Descartes, 1996[1], p.12).

Here, he foresees that machines could not communicate like a real human, and real humans would recognize that it is an automaton, not a real person due to the way they speak. Therefore, he sees it as unlikely that machines can ever become so complicated that they can pass for humans. Descartes provides one of the earliest examples of theorizing on how automata, or self-operating machines, would communicate with humans if they could. However, he does recognize that the mind and body are separate and different, and can exist separately. Humans are simply a union of both. According to him, the mind could in fact exist without the body, but the body couldn't exist outside of the mind (Dicker, 2013).

[1] Edition by Yale University Press.

Denis Diderot (1713-1784), a key figure of the Enlightenment, offers a non-dogmatic view on the matter: "If they find a parrot who could answer to everything, I would claim it to be an intelligent being without hesitation" (Diderot, 2007[2], p.5). The materialist view holds that the mind can be physically explained, to the extent that its production could be in fact artificial. In this view, just because the intelligence or the mind is artificial, this doesn't make it any less real and valid. If such intelligence exists, even if it was created artificially, it is still valid as real intelligence.

Positivist Alfred Ayer (1910-1989) explored the philosophical question of how consciousness is experienced by different people, or whether we have the same experiences of consciousness just because we all have brains. He tried to answer this key question in his book *Language, Truth and Logic* (1936). He also proposed a test to distinguish machine consciousness from human consciousness: "The only ground I can have for asserting that an object which appears to be conscious is not really a conscious being, but only a dummy or a machine, is that it fails to satisfy one of the empirical tests by which the presence or absence of consciousness is determined" (Ayer 2001, p.140). As a result, if the machine failed the test, it would be considered as not having a real consciousness.

Building on these early ideas of distinguishing between machine and human intelligence and consciousness, computer scientist Alan Turing (1912-1954) introduced the test named after him, the Turing test, in his paper titled "Computer Machinery and Intelligence" in 1950. Its purpose is to understand: "I propose to consider the question, can machines think?" (Turing, 1950, p.460). The Turing test seeks to test the ability of a machine to portray intelligent behaviour that is almost the same as, or at least not different, from a human's. The test would require two humans and a machine (see Figure 1).

[2] Jourdain, M. eds.

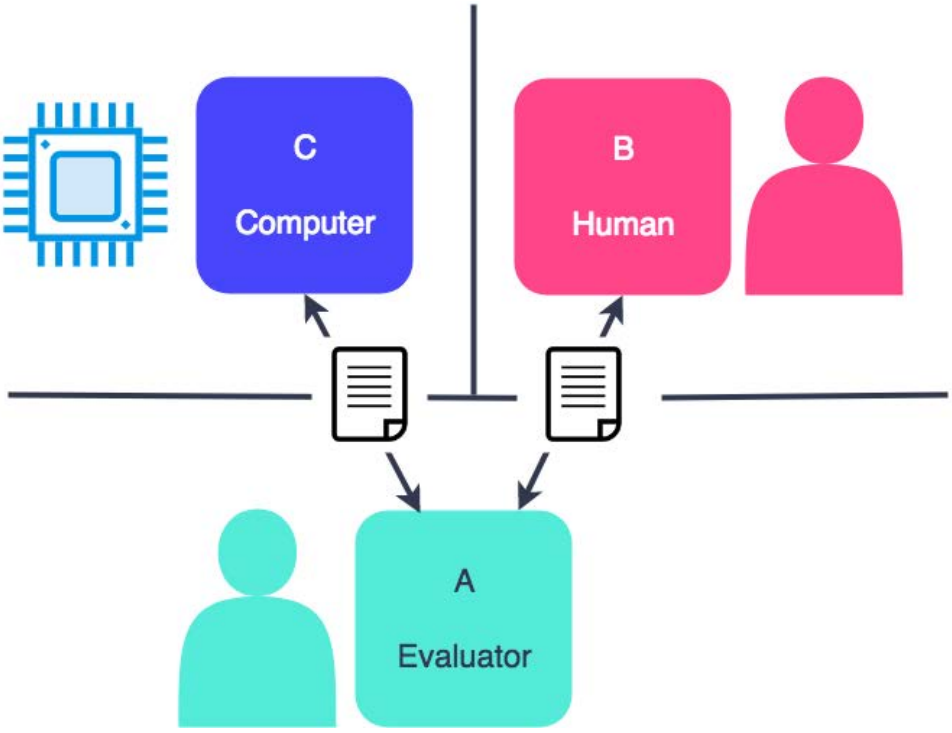

Figure 1. Turing Test (Banfi, 2018).

All three components of the test would be separate so they could not see each another. The computer (C), programmed to generate responses similar to a human, would be talking to a human (B) in written form so that its articulation of words, or speech, wouldn't affect the evaluator's (C) opinion. The evaluator's (A) task would be to differentiate the computer participant from the human one based on their written conversation. The machine would pass the test if the evaluator is not able to tell for sure which component was human and which was the computer. Another aspect of the test is that there are no correct answers that the machine can give. It is judged on how similar its responses would be to human responses. Basically, if the answers the machine gives are deemed to be human by the evaluator, the machine passes the test. As Breen (2020, pp.17-18) points out in his recent PhD Thesis about artificial intelligence in marketing practitioner perceptions and practices, "Turing's efforts led to a long, bumpy history of scientists and engineers working to build machines that showed glimpses of artificial intelligence. Susan Etlinger's recent overview of the history of AI

highlights some of these critical milestones (Etlinger 2017, p. 6). The success of IBM's Deep Blue chess-playing machine and, IBM's Watson Jeopardy playing machine answered the question could a machine think (Miller 2011).”

John Searle (1932-) is another important philosopher who theorizes on questions such as whether machines can have a consciousness or a mind. He argues that “The appropriately programmed computer really is a mind, in the sense that computers given the right programs can be literally said to understand and have other cognitive states" (Searle, 1980, p.1). He also distinguishes between two main types of AI, namely strong AI and weak AI. According to Searle, strong AI is “a physical symbol system that can have a mind and mental states”, as opposed to weak AI which he defines as “a physical symbol system that can act intelligently” (Searle, 1980, p.1).

Therefore, Searle argues that weak AI can interpret symbols and seem to pass the Turing test because it can merely reproduce and copy, not because it can infer its own meanings. Strong AI, on the other hand, is more complex and it can have opinions on more complex matters.

Searle (1980, p.11) further argues: “Can a machine think? The answer is, obvious, yes. We are precisely such machines" and he goes on to argue that intelligence and consciousness are merely the consequences of physical, chemical and biological processes in the human brain, and that if given accurate and precisely specific conditions, machines can achieve intelligence, consciousness, and even a mind just like humans.

Other theorists such as Ray Kurzweil (1999) and Hans Moravec (1999) argue that AIs will achieve consciousness through computing power’s exponential growth, based on Moore’s Law. Gordon Moore, a name among Intel’s founders, who predicted that “the number of transistors on integrated circuits would continue to double every 18 months until reaching fundamental physical limits” (Buttazzo, 2000, p. 29). This is why computers are becoming

smaller and more powerful as time passes. Buttazzo also adds that when the “physical limits” are met, humans will extend computing even further by methods such as quantum computing (2000).

At the time of writing this thesis, on 25 October 2019, Google’s quantum computer processor Sycamore has had a breakthrough by completing a task in 200 seconds that would have taken the world’s fastest supercomputer 10.0000 years to complete. This is called “quantum supremacy”, which might bring about many developments in medical research, agriculture, engineering, and of course AI, much sooner than anticipated (Shankland, 2019).

Based on Moore’s Law and the Turing test, Drew McDermott, a computer science professor specializing in AI at Yale University, proposes a “Moore/Turing inevitability” argument for the AIs to generate consciousness. He outlines the timeline like this:

> 1. Computers are getting more and more powerful.
> 2. This growing power allows computers to do tasks that would have been considered infeasible just a few years ago. It is reasonable to suppose, therefore, that many things we think of as infeasible will eventually be done by computers.
> 3. Pick a set of abilities such that if a system had them we would deal with it as we would a person. The ability to carry on a conversation must be in the set, but we can imagine lots of other abilities as well: skill in chess, agility in motion, visual perspicacity, and so forth. If we had a talking robot that could play poker well, we would treat it the same way we treated any real human seated at the same table.
> 4. We would feel an overwhelming impulse to attribute consciousness to such a robot. If it acted sad at losing money, or made whimpering sounds when it was damaged, we would respond as we would to a human that was sad or in pain.
> 5. This kind of overwhelming impulse is our only evidence that a creature is conscious. In particular, it’s the only real way we can tell that people are conscious. Therefore, our evidence that the robot was conscious would be as good as one could have. Therefore, the robot would be conscious, or be conscious for all intents and purposes.
> (McDermott 2007, p. 121).

In terms of AI gaining consciousness, I believe that the “Moore/Turing Inevitability” argument that McDermott proposes is a very plausible one, and in our analysis of the audiovisual productions, I will point out how the narrative arc of the AIs is closely consistent with that of the timeline that McDermott suggests. I will be revisiting this later in the analysis chapters.

Another key concept about AI is its singularity. Technological singularity, or “the singularity”, as it is named, refers to a hypothetical point in the future when an intelligent agent (most likely a computer-based software- or an artificial intelligence) continuously updates itself increasingly faster, causing an “intelligence explosion”, which is irreversible, and so unfathomable that it would surpass all collective human intelligence. This is expected to happen by 2050. The recent developments in quantum computing in October 2019 might make the date even sooner (Vinge, 1993; Eden *et al.*, 2012; Müller and Bostrom, 2016).

Without a doubt, such a scenario would raise some questions, such as whether the AIs would have benevolent or bad intentions regarding humans after we reach the point of singularity. Or in other words, whether or not AIs would be hostile towards humans. Some theorists argue that if the AI is coded in the “right” way that makes it benevolent, self-reinforcing and stable, there is no reason for selfish motivations that would lead to more sinister consequences to arise (Bostrom, 2012; Dvorsky, 2013).

Although some scholars reject the concept and dismiss it as completely impossible (Dreyfus, 2000; Searle, 2014) others including Stephen Hawking, believe that it is bound to happen. They go so far as to say that it will be the next step of sociobiological evolution, where technology and humans will converge (Kurzweil, 2005; Cellan-Jones, 2014). According to Hawking, “the development of full artificial intelligence could spell the end of the human race…it would take off on its own, and re-design itself at an ever increasing rate…humans, who are

limited by slow biological evolution, couldn't compete, and would be superseded" (Cellan-Jones, 2014). As such, Hawking even suggests that they would threaten the existence of the human race.

Other tech industry moguls such as Elon Musk and Alibaba founder Jack Ma share Hawking's pessimistic view, arguing that if we do not regulate the labor prospects of AIs, humans will suffer consequences such as unemployment, poverty, and even being incapable of competing with AI physically and mentally for survival.

An open letter by the "Future of Life" institute in 2015 is signed by the likes of Bill Gates, Elon Musk, Stephen Hawking, Steve Wozniak, Luke Muehlhauser (Machine Intelligence Research Institute's executive director), Frank Wilczek (professor of physics at MIT and Nobel laureate) as well as numerous other employees and scientists working for Google, IBM and Microsoft (Bradshaw, 2015). They agree that:

> There is now a broad consensus that AI research is progressing steadily, and that its impact on society is likely to increase. The potential benefits are huge, since everything that civilization has to offer is a product of human intelligence; we cannot predict what we might achieve when this intelligence is magnified by the tools AI may provide, but the eradication of disease and poverty are not unfathomable. Because of the great potential of AI, it is important to research how to reap its benefits while avoiding potential pitfalls… In summary, we believe that research on how to make AI systems robust and beneficial is both important and timely, and that there are concrete research directions that can be pursued today (Hawking, S., et al., 2015).

Thus, scientists and entrepreneurs from a variety of institutions came together to call for a greater focus on research on making it "robust and beneficial", while "avoiding pitfalls". In the letter, the words are carefully selected to highlight the positive aspects of AI, but the authors do not ignore the negative possibilities.

Besides philosophical and scientific approaches to Artificial Intelligence and how they might illustrate the consciousness and intelligences of machines, it is also important to look at how AI is perceived in legal terms. For example, Sophia, the AI created by Hanson Robotics, has been granted citizenship by Saudi Arabia in 2017, making her the first robot ever to have citizenship (Griffin, 2017). It also made her the first robot to be given legal personhood anywhere in the world.

Similar to the US-focused 2015 call from the Future of Life Institute, in 2017, there was a call from the EU committee to give robots personhood status, as well as other measures in AI research, such as:

- The creation of a European agency for robotics and AI;
- A legal definition of “smart autonomous robots”, with a system of registration of the most advanced of them;
- An advisory code of conduct for robotics engineers aimed at guiding the ethical design, production and use of robots;
- A new reporting structure for companies requiring them to report the contribution of robotics and AI to the economic results of a company for the purpose of taxation and social security contributions
- A new mandatory insurance scheme for companies to cover damage caused by their robots (Hern, 2017).

However, the European Commission dismissed the plea in 2018. Instead of focusing on the legal aspects, they decided to allocate 20 billion Euros of research funding to European AI institutes, as they were worried that AI research was becoming increasingly dominated by the US and Chinese institutes and companies (Rankin, 2018).

The letters from both 2015 and 2017 represent a concern on the part of scientists and philosophers, as well as entrepreneurs about how AI would fit into our human world vis-à-vis the legal, economic and safety frameworks. If the singularity happens around the year 2050 as it is predicted, we still have time to install a solid framework within which grounded AI research can take place. However, we must proceed with caution, and must have a clear outline of how

such conscious AI “persons”, if they can achieve real intelligence, will be regarded.

This thesis shares the prediction that conscious AI will probably happen by the year 2050, and when it does, they should be regarded as real people. Hence, I will be using personal pronouns “he” or “she” for the robots in this analysis, as they will have already reached that mark of becoming sentient beings. However, it would be an uneducated guess on our part to speculate on the outcome of the singularity and whether or not the AIs will be benign or malevolent.

3. ARTIFICIAL INTELLIGENCE IN TERMS OF MYTHS AND RELIGION

The first and second chapters of this thesis clarified some of the concepts that are paramount to the understanding of Artificial Intelligence. Philosophical approaches to what constitute intelligence and what makes it artificial were explained. This third chapter introduces the contribution of myths, legends and religious faiths that underpin many of the basic ideas and story lines of the science fiction genre. The chapter will focus on examples from the Greeks and Romans, as well as the early Middle Ages before modernity. By modernity here I mean before the Enlightenment in a Eurasian and North African context, as the examples in this chapter range from circa 100 BC to Paracelsus, who lived in the 16th century.

The works of Greek mythology and medieval scholars, especially of those who practice alchemy, provide examples that are useful for our understanding of artificial intelligence. By representing how the idea of creating an artificial creature, whether it be blessed by the gods in Greek mythology, or condemned by the Catholic church later in history, they illustrate how our collective consciousness relates to the idea of creating an “other” that looks like humans. Therefore, they also help us to understand how these artificial creatures are perceived in our contemporary society by presenting examples that were written thousands of years ago. This chapter will focus on the examples from the Greeks and Romans, as well as early modernity.

The first section will look at Pygmalion and other figures from Greek mythology that also artificially created fictitious humans or humanoids. These myths are not only very important for our understanding of the creation of humanity and life, but also because they depict the first historical examples of humanoid robots (androids in terms of the science fiction genre and popular culture) and artificial intelligence that shaped many other fictional examples (Graf, 1993; Dougherty, 2006).

I believe Prometheus is relevant to the study of AI because we, as humankind have become like Prometheus, and our “artificial creations”, are not humans but AIs that are becoming increasingly more advanced. This theme is present in all of the case studies. Other figures, such as Pandora, Talos and Galatea are archetypes of AI in SF films that are recurring: the dangerous female, the war machine and the companion type respectively. Therefore, it is worth revisiting their myths in order to understand their importance to our current understanding of AI that comes in many different shapes, forms and purposes.

The last section will visit late antiquity and the early Middle Ages as humanity was increasingly adopting monotheistic religions. Islamic recipes for creating artificial humans will be followed by the descriptions for the creation of homunculi by medical practitioners from European early Middle Ages, which are quasi-scientific examples. Lastly, the Jewish writings on Golem creation, and how it differs from its Islamic and Christian counterparts will be analyzed. Table 1 at the end of this chapter presents a comparison of all the artificially created figures presented.

The reasons for creating these artificial beings, whether for serving humans, for companionship, for magical powers, or for protection will also be explained. The reasons why humans created artificial beings dating back millennia are still valid in today’s society for creating different robots, cyborgs and AI, not to mention their countless representations in films, TV shows and literature. The aim of this chapter is to give an historical outlook and background for the beliefs and concepts in order to understand their influence on our current collective imagination about the creation of artificial intelligence.

3.1 Prometheus and Pandora: Greek myths on the creation of human life

One of the most important figures for this thesis in Greek mythology is Prometheus, as he is considered to be the figure who paved the way for human civilization and innovative thought by gifting fire to humanity. Subsequently, this led to technology that helped humans to become the dominant species amongst other creations such as animals. Other myths also put forward the idea that Zeus himself gave Prometheus the task of creating men (Huckel, 1955; Lloyd-Jones, 2003).

Prometheus is a Titan, which means that he is not a member of the Olympian God caste, of which Zeus is the leader. Neither is he a mortal, making him a figure that is a “lesser God” than Zeus, who is often represented as his rival. Different myths represent the rivalry between Zeus and Prometheus, the main theme being that Prometheus is a trickster figure who is always an ally for humans who does not fear Zeus in order to help them, whereas Zeus is an omnipotent god whose wrath humanity, as well as Prometheus, they should avoid at all costs (Hansen, 2004).

One myth as such is in *The Creation of the World*, in which the Roman poet Ovid (here in Bryden translation and edition) writes:

> A creature of a more exalted kind
> Was wanting yet, and then was Man design'd:
> Conscious of thought, of more capacious breast,
> For empire form'd, and fit to rule the rest:
> Whether with particles of heav'nly fire
> The God of Nature did his soul inspire,
> Or Earth, but new divided from the sky,
> And, pliant, still retain'd th' aetherial energy:
> Which wise Prometheus temper'd into paste,
> And, mixt with living streams, the godlike image cast.
> Thus, while the mute creation downward bend
> Their sight, and to their earthly mother tend,

Man looks aloft; and with erected eyes
Beholds his own hereditary skies.
From such rude principles our form began;
And earth was metamorphos'd into Man (Ovid, 2009[3], p. 3).

The myth puts forward the idea of mixing clay and water as an early method of creating humans for the divine, giving mud the form of a “godlike image”, which signifies that Prometheus built humans in the shape of gods themselves, reflecting their physical looks. However, in this very early example of artificially created humans were looking “aloft” and were “mute”, meaning that they were not capable of thinking for themselves, nor were they able to communicate, although in the beginning of the poem it is mentioned that they were capable of thought and considered fit to rule. Moreover, they were looking in the direction of “his own hereditary skies”, which is hinting at the idea of humans obeying their creators and “masters”, the gods. Therefore, from this version of the myth it can be deduced that the reason why humans were created was for them to be submissive to the Gods, and not on their level at all. Gods must preserve power and intelligence as opposed to humans.

Hansen (2004) suggests that this event of creation took place in a town called Panopeus, in which the local clay had the smell of human skin, thereby referring to the line “to their earthly mother tend” in Ovid’s poem. Since he was the creator of humankind, Prometheus came to be seen as the protector of men against the Olympian gods. The latter initially saw humans as their inferiors and more like beasts than individuals, as they did not become civilized until Prometheus stole fire and gifted it to men (Lefkowitz, 2005).

However, as there are many different accounts of ancient Greek creation myths from different writers in different times, it is difficult to pin down a single reason and way that explains how humans were first created. Plato, in *Protagoras* (Denyer, 2008) acknowledges that the task of creating humans was

[3] In Bryden translation and edition.

given to Prometheus and his brother Epimetheus, whose name meant “afterthought” rather than “forethought” like Prometheus, signifying a misjudgment by Epimetheus during the creation myth. Prometheus is said to possess foresight and wisdom, whereas Epimetheus is described as rash and impulsive.

In this version of the myth, it is said that the Olympian gods decided to create life roaming around the world. While Epimetheus was creating the animals that would inhabit forests, rivers and the air, he was quite impulsive to bestowing many gifts on them, including swiftness, flight, strength and claws for hunting their prey. On the other hand, Prometheus was diligent and meticulous in creating humans. Similar to Ovid’s version, he created them from clay and made them resemble Gods physically. However, upon the completion of the creation of men, Prometheus realized that Epimetheus had already given all the gifts from gods to the other animals and creatures, hence the “misjudgment” and “shortsightedness” mentioned above. Whereas the animals had claws and other skills to ensure their survival in the wild, humans were left naked and were no better than simple animals that could not even hunt for their own food. They lacked civil wisdom to make them champions of their own will. Plato writes further:

> Then Prometheus, in his perplexity as to what preservation he could devise for man, stole from Hephaestus and Athena wisdom in the arts together with fire—and he handed it there and then as a gift to man (Denyer, 2008).

This is why the theft of fire along with wisdom from mount Olympus is so important, as it gave humans a way to make tools and hunt, and be able to convert raw meat into an edible source of food, and inevitably led to the rise of technology. Sources (Kahn, 1970; Dougherty, 2006) cite this as the foundation of technology and human advancement in antiquity, as without the theft of fire humans would not have become civilized, been able to rule themselves,

establish democracy, procreate future generations and populate cities.

Another myth describes a setting where the first representatives of humans (which were exclusively men until the later creation of women) were discussing the proportioning of meat between gods and humans, also called the “settling of accounts” (Hansen, 2004; Ovid, 2009). Here, Prometheus was an intermediary figure in deciding for all time which part of the hunted animals Gods would eat, and which part of the animal the humans would eat. Prometheus’ function was to designate the share of each party and find the middle ground between the humans and the gods, a negotiator so to speak.

Prometheus started by dividing a large, slaughtered ox into two parts. The first part consisted of a delicious looking pile of fat, in which he hid only the unsavory bones of the animal. The second part was merely the skin of the ox, looking dry and unappetizing, which was filled with the best cuts of the meat. He told Zeus to make his choice, and Zeus’ choice would be what the Olympians would eat forever. Thus, Prometheus gave Zeus the illusion that he really had a choice. Zeus chooses the pile that has fat on the outside but bones on the inside, and is furious that Prometheus tricked him into believing it was the best pile. After this event, humans got to keep the best share of the meat. However, they suffered the vengeance of the gods and their previously amicable relationship started to deteriorate.

Zeus was furious, and withdrew fire from humankind that was previously known to them (Hansen, 2004). This was a major setback for humankind, as without fire they couldn’t cook the meat and eat. Neither could they bend metal or make tools without fire. The human lifestyle reverted back to a primitive state, almost similar to apes or other animals. Prometheus, once again showing his alliance with humankind, as retribution stole fire back from Zeus in a giant fennel stalk.

Hesiod, in his *Works and Days*, refers to this incident as the following:

> For the gods keep hidden from men the means of life.
> Else you would easily do work enough in a day to supply you for a full year even without working;
> soon would you put away your rudder over the smoke,
> and the fields worked by ox and sturdy mule would run to waste.
> But Zeus in the anger of his heart hid it,
> because Prometheus the crafty deceived him;
> therefore he planned sorrow and mischief against men.
> He hid fire; but that the noble son of Iapetus stole again for men from Zeus the counsellor in a hollow fennel-stalk,
> so that Zeus who delights in thunder did not see it.
> But afterwards Zeus who gathers the clouds said to him in anger: “Son of Iapetus, surpassing all in cunning,
> you are glad that you have outwitted me and
> stolen fire—a great plague to you yourself and to men that shall be. But I will give men as the price for fire an evil thing in which they may all be glad of heart while they embrace their own destruction (Hesiod, 2006[4], p. 16).

From the first lines it can be understood how important fire was to humans as it was “the means of life”, as the earth was so fertile and full of food for humans, but because the “smoke”- the fire was taken back, all of it was “running to waste”. Another important feature of this passage is the adjectives used to describe Prometheus; such as “cunning”, “outwitted”, “crafty” or “deceived”, which all signify his mischievous nature in challenging Zeus’ omnipotence and power as the most important and grudging Olympian god.

The fennel stalk served as a covert object for Prometheus to take fire back from Zeus, as hiding the fire in the core of the plant made it impossible to see it from the outside, and it was easier for him to transport the already lit fire rather than to start a new one for humans. Then, Prometheus hid the fire in trees so that humans could take it and use it for cooking, as well as fashioning tools whenever they liked, once again restoring their lifestyle to their previous, more

[4] Translated by Catherine M. Schlegel and Henry Weinfield.

civilized state, instead of savages merely better than animals (Graf, 1993; Hansen, 2004).

Going back to Hesiod's *Theogony* (2006), he writes that Zeus, infuriated about Prometheus stealing back fire and tricking him once again after the "settling of the accounts", decides to give humanity an evil gift. On his orders, Hephaistos creates the first mortal woman, in a fashion similar to that of Prometheus's creation of man: he molds her from water and clay, and names her Pandora. The name Pandora means all-gifted or all-giving in Greek, which suits her (Hesiod, 2006, p. 6).

According to Hesiod in *Works and Days*, Pandora was a collaborative effort between the Olympian gods in order to retaliate against Prometheus and indirectly, humans. Most of them contributed to her creation by donating from their own abilities.

Athena taught Pandora weaving and dressed her in attractive clothing; Aphrodite "shed grace upon her head and cruel longing and cares that weary the limbs" meaning that he gave her charm and grace; Hermes gave her "a shameful mind and deceitful nature"; which would help her to deceive Prometheus' brother Epimetheus, as well as teaching her how to speak. The Graces put necklaces around her neck; and Horae gave her a crown made of flowers. Hermes was the one who announced her name, Pandora (Hesiod, 2006, Lines 63-81).

Next, Hephaistos showed her off to the gods and men, who were all amazed by her beauty. Afterwards, she was presented to Epimetheus, Prometheus's brother, as a gift, and although Prometheus, fearing that Zeus would try to retaliate, warned his brother not to accept coming from the Gods, Epimetheus accepted her. As soon as he accepted Pandora, she took the lid off her jar and unleashed its contents, ranging from hard work and diseases to death. These would bring great misery to humankind, and initiate the suffering of

men for ages to come. Only one thing remained in Pandora's jar, and this was hope, as Zeus commanded her to close the jar before it could escape (Hesiod, 2006; Lines 81-105).

Another important ancient Greek writer, Aeschylus, elaborates on how Prometheus was punished by Zeus in his play *Prometheus Bound* (circa 430 BC). Prometheus was the subject of Zeus's wrath following the opening of Pandora's jar, as he was chained to a column where each day, an eagle (the symbol of Zeus in Greek mythology), would come and feed on his liver, only for it to be regenerated at night since he was immortal. This went on for years until Zeus' half-God son, Hercules, came to his salvation by slaying the eagle (Aeschylus, 2015[5]).

Many academics agree on the reason why Prometheus suffered and was punished: it was not only because he chose to help humankind, but also because of the fact that he tried to trick Zeus and as the almighty god, Zeus could not let Prometheus escape punishment. As a result, he had to meet Zeus' unavoidable justice (Huckel, 1955; Long, 1958; Lloyd-Jones, 2003; Lefkowitz, 2005).

However, the reason why Prometheus created man in the first place, and why he was willing to accept the punishment and solace imposed on him by Zeus, is not very explicit in the texts. Lefkowitz suggests that Prometheus was hoping to have possible allies in the struggle against Zeus as a part of the ongoing bad blood between the Titans and the Gods, and that this is why he created them (Lefkowitz, 2005, p. 18). In a broader and philosophical sense, Plato uses the term "Promethean thinking" in *Protagoras,* which Anderson argues is a different term for dialectical thinking, which is the only true way civic wisdom can be available to humanity (Anderson, 1995, p. 10). Therefore, it can be said that the ancient Greek people tried to explain the advancement of their own kind

[5] Translated by Joel Agee.

through a narrative that embodied help from a half-god, an immortal figure that wanted the best for them.

As mentioned in the beginning of this chapter, the overview of Prometheus and other myths of creation is important for this thesis as they provide an insight into why we, as humans, become the “creator” and create other artificial beings in the first place. We follow in the steps of “gods”.

The creation of Pandora by Zeus as the first mortal woman as opposed to the creation of man by Prometheus is also worth elaborating on, since the reasons for each creation were fundamentally different. Whereas men were created at the same time as animals and other creatures roaming the world, Pandora, the first woman, was created as a part of a cunning plan of Zeus to retaliate against Prometheus for tricking him. Because of her, humankind had to endure pain, misery and hard work in the future generations. According to some theorists, this is an anti-feminist or misogynist myth (Kahn, 1970; Koning 2010). It is a very similar concept to the creation of a female AI that brings misery upon men, as a sort of bionic femme fatale in science fiction films that will be studied later on in this thesis.

3.1.2 Pygmalion and Thalos

It is important to study the Greek myth of Pygmalion in order to understand other possible motivations for creating an artificial human.

In *Metamorphoses*, Ovid writes:

> Pygmalion loathing their lascivious life,
> Abhorr'd all womankind, but most a wife:
> [...]
> Yet fearing idleness, the nurse of ill,

In sculpture exercis'd his happy skill;
And carv'd in iv'ry such a maid, so fair,
[...]
Pleas'd with his idol, he commends, admires,
Almighty Gods, if all we mortals want,
If all we can require, be yours to grant;
Make this fair statue mine, he wou'd have said,
Give me the likeness of my iv'ry maid.
[...]
The golden Goddess, present at the pray'r,
Well knew he meant th' inanimated fair,
And gave the sign of granting his desire;
[...]
Soft, and more soft at ev'ry touch it grew;
Like pliant wax, when chasing hands reduce
[...]
Convinc'd, o'erjoy'd, his studied thanks, and praise,
To her, who made the miracle, he pays:
[...]
The Goddess, present at the match she made,
To crown their bliss, a lovely boy was born;
Paphos his name, who grown to manhood, wall'd
The city Paphos, from the founder call'd" (Ovid 2010, p. 275).

Pygmalion is a Cypriot sculptor who is disillusioned by the behavior of the women around him ("loathing their lascivious life") and decides to remain unmarried. Instead, as he does not want to be lonely and bored ("Yet fearing idleness, the nurse of ill") he carves a statue of a woman out of ivory with which he falls in love. Although in Ovid's version her name is not mentioned, sources later conclude that her name was Galatea (Gross, 1992; Dinello 2005). It could be said that the reason for Galatea's creation was the search for the perfect or ideal woman, since Pygmalion was not happy with the women who were already around him and he wanted to create a perfect one for himself. ("Pleas'd with his idol, he commends, admires") The term used to describe the desire for one's own creation, especially an inanimate object like a statue, is called agalmatophilia (Scobie &Taylor, 1975; Gross, 1992). The "Pygmalion effect" is also a condition in psychology named after the Pygmalion of this myth. It is also a psychological condition seen in researchers or teachers: in a positive way, it can improve the

self-esteem of the subject; in a negative way (or Golem effect) it can destroy any self-esteem (see also the Rosenthal effect: Rosenthal, 1987; Mitchell and Daniels, 2003). However, Galatea's inanimate state does not last long, as Venus grants Pygmalion's wish by bringing her to life.

On the day of Venus's (Aphrodite's) feast, Pygmalion makes an offering to the goddess and wishes his sculpture to come to life. Venus grants his wish as his beloved sculpture comes to life (Soft, and more soft at ev'ry touch it grew) and transforms into a beautiful woman, while Pygmalion is delighted (Convinc'd, o'erjoy'd, his studied thanks, and praise). Galatea further bears Pygmalion a son named Paphos, after which the Cypriot city is named.

Pygmalion's myth is important for this thesis since it shows a man creating an artificial woman and falling in love with her even before she becomes alive, and later starts a family with her. Although Galatea was once lifeless, a sculpture as an art form, Venus as a goddess gave her life and made her into a woman, which is where her artificiality comes from. She was not born an organic human from an organic process. In science fiction films, and in the samples of this thesis, *Her, Ex Machina* and "Be Right Back" episode of *Black Mirror*, similar themes are present where the artificially created humans are the focus of human desires. They will be examined in detail later in their respective analysis chapters.

Talos is another important artificial human from Greek mythology. In Homer's *Iliad*, Hephaestus, the god of technology, casts a giant artificial human from bronze and calls it Talos. Talos' function is to regulate the waters around the island of Crete, defending the island against enemy ships by throwing enormous rocks, and it is also said that he is mute, which highlights its function not as an equal to humans, but as a servant for protection (Dinello, 2005, p. 37). According to JP Telotte (1999, p. 29), this giant humanoid made of bronze typified the Greeks' "hopes for a rational mastery over an unpredictable

universe". Talos is also an archetype commonly used in science fiction films, such as protective robots or war cyborgs used to fight other humans.

3.2 Myths of Ancient Egypt

Myths and motifs from ancient Egypt, like those from ancient Greece and Rome, have a huge impact on Christianity and other monotheistic religions (Gadalla, 2007). Therefore, it is important to look at some of the following accounts of creation from this point of view. There seem to be separate explanations for how God first came to be, and then how mankind came to be (Gadalla, 2007; Massey, 2007; Morenz 2013).

To start with the creation or birth of god, "origin of life from an egg" conception, "the idea is that at one time life as such was brought forth from that mysterious substance which appears to be solid matter, but which nevertheless brings forth a young living being" (Morenz, 2013, p.178). Morenz argues that since the sun-god, who is the creator of all universe according to Egyptian myth, Amun-Ra (Or Amun-Re), represented with a falcon head and a human body, was born from a primordial egg. It is only fitting that a god with a birdlike body is born from an egg, the typical biological birth mechanism for its kind (Massey, 2007). However, this is more an explanation of how a god is born, and not specific to humans, although it is very useful for the "homunculus" concept that we will see shortly.

Since the sun god Amun-Ra was born from a primordial egg, according to old Egyptian texts, one explanation was that man was born from Amun-Ra's tears (Gadalla, 2007; Morenz, 2013). However, another explanation was that Khnum, a god with a ram's head (ram being a symbol of fertility in ancient Egypt) put clay on his pottery wheel and created the first humans like this (Morenz, p.183). This is quite similar to the creation of man myths from Greek mythology like Prometheus, as well as Christian/Islamic/Jewish explanations of creation.

As a result, the creator, the god, is seen as an artisan who creates a work of art: the clay is put on the potter's wheel, or is shaped by hand, to the liking and taste of the creator god.

3.3 Artificial Intelligence in the Middle Ages: Islam, Christianity and Judaism

In the three monotheistic religions of Islam, Christianity and Judaism, it is accepted that God created the first man. The writings of scholars from the early Middle Ages and late antiquity, whether they are Islamic, Christian or Jewish, give recipes of how to create artificial humans, but these scholars are often practicing alchemists or Kabbalists and do not follow the typical, or Orthodox way their religion dictates (LaGrandeur, 2014).

In addition to the idea in monotheistic religions of man being created by the sole creator God, the Persian scholar Jabir refers to the first attempt of man to create another artificial life in a book called *The Book of the Cow.* It consists of early alchemist attempts to create 'homunculi' in late antiquity or the early middle ages in Islam that Persian scholars like Jabir cite in the 8^{th}-9^{th} centuries (Newman, 2004). This book describes how to create an artificial man by combining sperm from a human with a phosphoric piece of rock and then placing it in the womb of a cow or sheep. The artificially-created human will also have mystical powers, as "if a man has raised it and nourished it until a whole year passes, and left it in milk and rainwater, it will tell him about all distant things and occurrences...it can influence the progress of the moon, or change one into a cow or a sheep" (Newman, 2004, p.180). The text also mentions that the artificial human can be vivisected while it is alive, and the body fluids coming from the artificial man will allow its maker to walk on water if the maker smears his foot with it. As a result, it can be said that to create the artificial human was beneficial for the maker, as he could possess supernatural powers thanks to his artificial creation.

During the Middle Ages, a Christian scholar who practiced medicine, called Paracelsus (1493-1541), offered a different view on how and why to make an artificial human, called homunculus. He wrote:

> Let the semen of a man putrefy by itself in a sealed cucurbite with the highest putrefaction of the venter equinus [horse manure] for forty days, or until it begins at last to live, move, and be agitated, which can easily be seen. After this time, it will be in some degree like a human being, but, nevertheless, transparent and without body. If now, after this, it be every day nourished and fed cautiously and prudently with the arcanum of human blood, and kept for forty weeks in the perpetual and equal heat of a venter equinus, it becomes, thenceforth a true and living infant, having all the members of a child that is born from a woman, but much smaller. This we call a homunculus; and it should be afterwards educated with the greatest care and zeal, until it grows up and begins to display intelligence (see Waite, 1992 p.124).

In the Islamic tradition, the created seed was to be incubated in a cow or sheep, providing the warmth and nurture similar to that of a woman's womb. However, in the Christian version, it should be preserved in horse dung outside, although for a much shorter time, which suggests that the exclusion of female participation in the process of creation can make it even less human and subordinate to the male master.

However, this time the intelligence of the new creation is emphasized unlike the object-like version that the creator could even cut open alive in the Islamic version. Therefore, it could be said that in the Islamic version, the purpose of the artificial human is to serve the creator and be subordinate to him, and give him magical powers, whereas in the Christian version its own intelligence and nurture is emphasized and is seen as important.

Another European Christian scholar who also practiced medicine and alchemy, Agrippa, argues in his *Three Books on Occult Philosophy* (1533) that the creation of living things is made possible by using the proper mixing of

natural elements under the proper astrological influence, such as the alignment of the planets and the stars under a specific degrees and orders in the sky. He mentions the homunculus, the same artificially created human as Paracelsus had mentioned, as well as other life forms produced in a similar way that could be compacted into powder form and revived by water (LaGrandeur, 2014). He also groups the artificial man, the homunculus, with animals, which further implies its inferior position to man. Like Paracelsus, Agrippa got into trouble, not with the medical establishment, but with the Catholic Church, as what he was doing was considered to be “playing god” and heresy, as only God could have created humans (Lüthy, 2013; LaGrandeur, 2014).

In Judaism, the main recurring theme of creation of an artificial human can be grouped under the writings about Golem, which was first mentioned in the book of Sefer Jezira, attributed to the third century (Campbell 2010). According to the recipe, in order to construct a Golem, a rabbi must act in a similar way to how God made Adam in Genesis; he has to build a humanoid shape from clay, and then give life to the inanimate clay by writing the word for Truth in Hebrew, “Emeth”. Only after this does the creature comes alive and start walking, although according to sources it is mute and cannot talk (LaGrandeur, 2014; Campbell, 2010). This makes the Golem a useful servant for the rabbi to do his daily chores. If the rabbi fears that his creation is becoming too dangerous or big, he can simply erase the first letter “E” from “Emeth” which leaves “meth”, meaning death in Hebrew, and the Golem immediately returns to its previous inanimate state.

Although the Catholic Church saw creating an artificial human as defying the act of God, the Jewish tradition celebrated the creation of a Golem as it illustrates how man can imitate divine creation through research and science, since God created the world by combining letters. Exploring the art of letter combination can be interpreted as an act of wisdom and an act of devotion to God (Kaplan, 2004, p. 8).

To summarize this chapter, there are similar patterns between the creation of humanity, and then later the creation of artificial intelligence by humanity. First the creator (Zeus or Prometheus depending on the version of the Greek myth, God in monotheistic religions) made humans from clay, and then animated the inanimate. Archetypes of the “mute” artificial creation as inferior, such as Talos in Greek mythology and Golem in Jewish tradition are also similar. However, there are differences such as the emphasis on artificial creation’s inferiority in monotheistic religions, as it never matches the human being in terms of intelligence. On the other hand, to become “fully human” is possible in Greek mythology, as was the case for Galatea.

Finally, it is important to highlight the relationship between the creator and the creation of AI for this thesis, as the films that will be closely analyzed, embody the relationship between humans and the AIs that are put forward in these early narratives. The creators are seen mostly as artists, sometimes as necromancers or pseudo-scientists. They achieve their creations with diligence and specific intentions, but if these intentions go wrong, there can be many complex issues, as I will discuss later in this thesis. The relationship between the creator-creation as a master-slave, god (immortal and divine)-human (mortal and simple), oppressor-oppressed dichotomy, as well as how the relationship can be subverted in the case of the creation acquiring too much power are themes which are prevalent in both the science fiction and audiovisual media.

Example of early AI	Creator	Description	Origin/ Authorship	Historical period/ era	Function
Men (as created from inanimate clay) inferior, "beast-like, aloft, mute, created in God's image"	Prometheus	Prometheus was a titan, not an Olympian God. He was a rival of Zeus. Humans were seen as servants to gods, secondary and inferior as their mortal nature dictated. Prometheus tried to change that by looking out for humanity	Greek Mythology, early appeareances in Hesiod's (8th Century BC) and Ovid's works	Classical antiquity (Greek)	Prometheus was molding humans from clay and helping humans to achieve technology and civilization through gifting them fire. However, due to his rivalry with Zeus, he failed numerously and is seen as a tragic figure.
Pandora	Collaborative effort between the Olympian gods Aphrodite, Hermes, Horae, Hephaistos	She was the first woman to be created.	Greek Mythology, early appeareances in Hesiod's (8th Century BC) and Aeschyclus' works	Classical antiquity (Greek)	Very beautiful, she was designed as a gift for Prometheus' brother to get back at Prometheus for tricking Zeus. She unleashed

					disease, hard work, pain and death onto humans. Only hope remained in her box.
Galatea	Pygmalion	She was carved in the image of goddess Aphrodite	Greek Mythology, early appeareances in Hesiod's (8th Century BC) and Ovid's' works	Classical antiquity (Greek)	Aphrodite granted Pygmalion's wish and turned Galatea from a statue into a real woman, whom Pygmalion married and had children
Talos	Hephaistos	Giant humanoid made of bronze, he was mute	Greek Mythology, Homer's Iliad (circa BC 1200)	Classical antiquity (Greek)	To protect the island of Crete by throwing rocks at enemies
"Artificial man"	n/a	recipe given to create an artificial human was to combine sperm and rock and put it in the womb of a sheep or a	Book of the Cow, 8-9th Centuries	Early Middle Ages (Muslim)	The "man" as a result of the procedure would have magical powers. Also if the artificial man is killed

		cow.			and eaten, the person who would do that would also have magical powers.
Homunculus	n/a	recipe given was to create an artifical human baby by combining sperm with horse manure, keeping it warm and feeding it human blood for 40 days	De Vita Longa, Paracelsus 1493-1541	Middle Ages (Christian)	an "artificial" baby to grow up as an "intelliigent" human being, not a servant nor subordinate to humans
Golem	rabbis	a rabbi would give life to the inanimate clay by writing the word for Truth in Hebrew, “Emeth”.	Sefer Jezira, 3rd Century AD	Late Antiquity (Jewish)	a mute creature to serve the rabbi in his everyday tasks.

Table 1: Early explanation of early human life creations (by Gods) and artificial human life (by humans). Source: Own elaboration.

4. THE EMERGENCE OF ARTIFICIAL INTELLIGENCE IN SCIENCE FICTION NARRATIVE

4.1 The emergence of Science Fiction as a literary genre

The definition of science fiction as a genre, to simplify, could be as follows: “realistic speculation about possible future events, based solidly on adequate knowledge of the real world, past and present, and on a thorough understanding of the nature and significance of the scientific method” (Davenport, 1959, p. 41). Other definitions, like Robert Altman’s canonical one (2000, p. 169) point out that the necessity of realism in the narrative premises form a rational or plausible perspective. Suvin (1979, p. viii) defines science fiction as “a fiction in which the SC element or aspect, the novum, is hegemonic (...) it determinates the whole narrative logic”. This novum concept, is recreated and applied to science fiction (SF) by Suvin himself, as a kind of “What if…?” that connects science fiction and hypothesizes utopian and dystopian proposals, as we will see later in this chapter. In fact, some authors, like Suvin, consider the utopian literary genre as a precursor of the science-fiction genre. Another indisputable characteristic of science fiction is its function of holding a mirror up to reality, whether it be an optimistic or a distressing one. It is usually a variation or a temporal projection, more or less connected to the contemporary existence and human inquisitiveness such as psychological, social or ethical worries.

Some authors (Douglas, 1913; Del Rey, 1980) argue that the emergence of science fiction dates back two millennia, starting with the Mesopotamian epic of *Gilgamesh*, as it included the human quest for immortality, as well as the apocalyptic flood scene, apocalypse being a common theme in science fiction literature, for instance, that of HG Wells or Margaret Atwood. They also cite works of Ovid as early precursors to SF, since they depicted creation of artificial humans and planetary travel. Other works such as ancient Indian poetry like *Ramayana, Rigveda* and *Mahabharata* include references to flying machines that explore space or function under water, as well as time travelling, motifs commonly seen in SF literature (Gibbs, 2007).

Fredericks (1976) cites the second century text *True History* by Lucian (AC 125-180) as another example since it includes a voyage to outer space, as well as encounters with alien creatures, highly technological warfare between rival aliens and conquest of planets, and also artificial beings created by humans. However, critics such as Kingsley Amis (1960) and Bryan Reardon (2008), who translated the book, argue that *True History* is only meant to be an exaggerated satire that is not a serious depiction of fictional scientific worlds, thus rendering it merely an example of fantasy fiction, not science fiction.

More's *Utopia* (1516) was an early 16th century precursor of literary authors of the Enlightenment era and some social ideologists as I discussed in the previous chapter. Thomas More, as a statesman and a lawyer, was inspired by both the Greek tradition (pre-utopias and Atlantis in Plato's *Republic* of the year 370 BC; the city-state as Sparta according to Plutarch's texts) as in the Judeo-Christian (particularly with *The City of God by* Saint Agustine, 413-426) for what is considered to be the consolidation of the utopian genre (Geiger, 1981; Van Oort, 2012). This tradition based on the mythological and religious narrative of classical or Judeo-Christian origin refers to both utopian foundational spaces, in the manner of paradises and golden ages, as well as their opposites, as the image of Christian hell. Idealizations such as those on the island of Avalon (which was incorporated into the Arthurian cycle from Celtic mythology) were applied to real practices such as monasticism, with the social organization of Franciscans or Benedictines (Bowman 2009).

With the beginning of the Enlightenment era, throughout 17th and 18th century Europe, more satirical works that depicted imaginary worlds started to appear. Johannes Kepler's *Somnium* (1634), Francis Godwin's T*he Man in the Moone* (1638), Voltaire's *Micromegas* (1752) and Jonathan Swift's famous *Gulliver's Travels* (1726). Swift's work is precisely the most satirical of the critical narratives with a social model (in this case the 18th century English society) and

offers a fantastic narration of travel stories. Others will build on scientific progress (from experimental methods) to project environments where mastery of technology will lead to prosperity, such as Francis Bacon's *The New Atlantis* (1627).

Another important influence from this era is the German legend of Dr. Faust, which provides the first prototype of a “mad scientist” who made a deal with the devil in order to receive unlimited knowledge and worldly pleasures, which is a recurring motif in later science fiction literature and cinema from. However, George Mann (2012) argues that the majority of the writers in this era use satire and “devices such as aliens and strange new worlds as a means of commenting on the society of their contemporaries… these stories remain, ultimately, fantasies” (2012, p. 12).

So, then, which literary work is the ultimate blueprint for the science-fiction genre as we know it? Many critics (Amis, 1960; Scholes and Rabkin, 1977; Aldiss and Hargrove, 1986; Gunn, 1988; Clute and Nicholls, 1993; Mann 2012) agree that the first truly recognizable work of science fiction is in the early 19th century, which is *Frankenstein, or the Modern Prometheus* (1818) by Mary Shelley. The text draws on the myth of Dr. Faust from the 16th century, and puts the “mad scientist” in center stage for the first time. The scientist, Victor Frankenstein, obsessed with the idea of creating artificial life through science, succeeds when one night his creation made up of dead body parts comes to life thanks to electricity, a technology available at the time. However, scared of the monstrosity of his own creation, Victor abandons it, only for it to come back later and beg for him to create a female companion for him to end his agony, suffering and loneliness. However, Victor does not fulfill his wish.

Frankenstein is not only the forebearer of the SF genre because of its science, but also because of its “Promethean” approach, in the sense that was outlined in chapter three of this thesis. Prometheus, a trickster figure, who is a

titan, challenges Zeus, rebels against him in order to steal the fire and give humanity the gift of fire, which paves the way to human technological and scientific advancement. Thus, Victor Frankenstein is also a promethean figure, who is rebelliously creative and innovative in order to create artificial life through science, and hence Frankenstein is the first example of the science fiction genre.

Freedman argues that it is this specific "promethean" aspect of the text that renders it so important, since the "epistemological radicalism of the novel, its sense that the most fundamental of material and intellectual categories- condensed into the problem of life itself- can no longer be taken for granted but are now somehow up for grabs and can be challenged and rethought" (2013, p.4). This means that *Frankenstein* was a unique example since it was questioning how such a cardinal notion such as life can be given and created through science, unlike more religious and god-centered approaches studied so far in this thesis (be they monotheistic like Judaism, Christianity and Islam, or polytheistic like Greek mythology). As a result, it paved the way for later texts to use science, reasoning, technology and development as the core motifs of narrative.

Although *Frankenstein* is later considered as the precursor to SF literature, at the time of writing it was contemporary with Poe, one of the forefathers of Gothic literature. Roberts argues "the extremities of experience in the novel, the extreme violence, the extreme fear, are Gothic attempts at sublimity, at articulating a state of being other than the ordinary" (2000, p. 58). This further gives birth to the articulation of "the other" versus the known self. Frankenstein's monster is a crucial example of "the other" as opposed to the human, as he is created artificially, does not look like a normal human, and is grotesquely ugly and scary. He is an example of human fears of the unknown, of what is unfamiliar to us. Cavallaro puts forward the idea that:

> The monster and the alien (both variations on the theme of the non-human) are used by science fiction, as by the Gothic novel, to

> give form to inchoate fears and prejudices. The dread of the non-human encapsulates legion cultural anxieties about the contamination of dominant social classes, privileged sexualities, national values and whole empires by a putatively deviant and evil *alter ego* (2000, p. 3).

Therefore, *Frankenstein* is the ultimate predecessor to SF literature not only because it has a Promethean outlook that seeks to challenge foundational ideas through science and technology, but also because it is an early example of a narrative in which binaries such as "us versus them" and "self versus other" are explicitly depicted. One of the defining moments of Frankenstein is when the monster observes and studies humans from an outside, god-like point of view that reveals the true essence of the human condition on a greater scale. The anxieties these binaries reveal about the human psyche are deeply implicit in later works of science fiction literature, as well as in audiovisual productions. They will be analyzed in greater depth later on in this thesis with specific case studies of artificial intelligence as the "other".

Immediately after Shelley, in the mid-to late 19th century, HG Wells and Jules Verne published works that are also considered to be early examples of SF. However, Verne's works were dubbed more "romantic" whereas Wells was considered more "didactic". (Amis, 1960; Aldiss, 1973; Scholes and Rabkin, 1977; Clute and Nicholls, 1993). Wells' *The Time Machine* (1895) came up with themes that became quite popular in later science fiction such as time travel, encounters between humans and aliens, as well as the possibility of aliens destroying the world. In *The War of the Worlds* (1898), he takes it up a notch by fully describing the process of an alien invasion and how humans would deal with it. Although there were previous texts like those mentioned earlier on in this chapter that dealt with similar themes, like Lucian or the ancient Indian texts, Wells' works cannot be disregarded as fantasies like those earlier works because "they actually articulate in uncompromising ways deep-seated anxieties about cultural degeneration, the confusion of traditional boundaries, the potentially destructive consequences of technological progress and, above all, the erosion of Victorian certitudes in a declining imperial culture" (Cavallaro, 2000, p. 3).

Therefore, Wells' works not only describe the story as a mere fantasy with no implications attached, but provide intricate explanations and, as a core part to this thesis, anxieties about how and where technology could take us human beings, possibly to a destructive end. Thus, Wells is not just a storyteller, but also someone who is aware of the future consequences of technology

On the other hand, Verne's works were depicting sublime fantasy worlds, as is suggested by the name he gave to his novels as a whole: *Extraordinary Voyages: Known and Unknown Worlds* (Freedman, 2013, p.51). In his 1870 novel *Twenty Thousand Leagues Under the Sea*, Verne carefully describes the intricate technology of the submarine Nautilus, and thus how exploration can be made possible by science. In *From the Earth to the Moon* (1865), the characters build a cannon-like machine that fires men into space, whereas in *Journey to the Centre of the Earth* (1864) the protagonists dive inside a volcano and reach the core of the earth full of prehistoric dinosaurs. As such, Mann argues that although undisputedly a SF writer, Verne's main aim is to create a sense of wonder in the reader through the possibilities that science and technology can offer for discoveries as depicted in his novels (Mann, 2012, p.40). However, unlike Wells, his works did not explicitly imply or warn us about the consequences of technology in a dystopian sense, where it could even lead to catastrophe and destruction.

As Shelley, Verne and H.G. Wells expanded the European strain of SF, it was a matter of time before it spread to the USA. In 1926, a pulp magazine called *Amazing Stories* surfaced in the USA, specializing in publishing SF stories both American and foreign (Roberts, 2000). Its founder, Hugo Gernsback, as collected by James (1994), was an avid believer in the genre as according to him, SF will even influence its audience's outlook on life as such:

> Not only is science fiction an idea of tremendous import, but it is to be an important factor in making the world a better place to live in, through educating the public to the possibilities of science and the influence of science on life...If every man, woman, boy and girl, could be induced to read science fiction right along, there would certainly be a great

> resulting benefit to the community...Science fiction would make people happier, give them a broader understanding of the world, make them more tolerant. (James, 1994 pp. 8–9).

Thus, Gernsback believed that SF's mission was to educate people and give them an understanding of how science and technology can lead to great progress. Although it sounds great, Roberts reminds us that the very nature of pulps is:

> Kinetic, fast-paced and exciting tales that are also clumsily written, hurried in conception, and morally crude…. their brightly-coloured, crudely realised cover art was as much part of the effect of the text as the writing inside, representing, for example, men in spacesuits and women in less complete clothing being menaced by insectoid, ape-like or otherwise monstrous alien… that demonizes the otherness. (Roberts, 2000, pp. 68-69).

Thus, stories in pulps such as *Amazing Stories* have further perpetuated stereotypes that highlight the "us" rather than the "other", to an extent where "us" was used by "Americanness", where in an imagined future Asian-looking aliens would invade the US, and be a threat to women and children, and so on. As a result, the SF depicted in pulps was not taken too seriously by critics as it was seen as "cheap" and not grounded. They thought this type of SF pulps did not hold important literary value, and was not a serious work of fiction (Aldiss, 1973; Clute and Nicholls, 1993; Mann, 2012).

Another editor, John Campbell, who was the editor of another SF pulp magazine, *Astounding Science Fiction,* believed that SF should not only be about technology, science and ideas, but that it also needed to take into consideration the extent to which the audience and people were shaped by those ideas (Roberts, 2000). Under this publication, many influential authors such as Isaac Asimov, Robert Heinlein, Theodore Sturgeon and Arthur C. Clarke started to flourish, which gave way to an era recognized as the Golden Age of science fiction (Cavallaro, 2000, p. 5). Coinciding with WWII and subsequently with the Cold War, works of this era were also influenced by the outcomes of nuclear disaster. As WWII brought about the Hiroshima and Nagasaki atomic bombs,

many people saw how catastrophic nuclear warheads could be, with irreversible effects on humanity, the environment and government. The threat, although it never happened, was also there throughout the Cold War era.

At this point, a short expedition into Isaac Asimov's "Three Laws of Robotics" seems in order. Isaac Asimov was a Russian-American SF author, who was influential on the genre as he used many motifs and tropes in an innovative way. One such example is his introduction of "robot ethics". In his 1942 short story *Runaround*, which was later included in his 1950 collection of stories *I, Robot* (also subsequently made into a film in 2004 by Alex Proyas) he outlines his laws as:

> First Law: A robot may not injure a human being or, through inaction, allow a human being to come to harm.
>
> Second Law: A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
>
> Third Law: A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws (Asimov, 1995, pp. 9-10).

Theorists also highlight that Asimov's laws have been crucial for the foundation of machine, robot and AI ethics, as technology continued to develop, and other scholars added and modified Asimov's laws to better create a framework for their operation, especially in regards to humans (Anderson & Anderson, 2001; Turner, 2018).

With the publication of the British magazine *New Worlds* (1946-1970), edited by Michael Moorcock, the impact of technology on a daily basis was becoming an increasingly important subject, impregnated with issues such as ecological disasters, overpopulation, surveillance and sexuality. The first examples of dystopias regarding these issues were flourishing in the late 60s to early 70s, which came to be known as The New Wave of science fiction literature (Grewell, 2001). Kingsley Amis's *New Maps of Hell* (1960), Frank Herbert's *Dune* (1965), Ursula Le Guin's and JG Ballard's earlier works were amongst the

important works of this era, along with Philip K. Dick's stories, who was later more associated with the Cyberpunk era.

Moving into the 1980s, as the first Personal Computer, as well as computer games such as Atari were starting to become popular, science fiction literature shifted from its established space and aliens themes, and started to focus more on computers. As computers in real life got more and more widespread, it naturally affected science fiction literature, as the genre increasingly started to focus on computer-human relationships, and their interplay with society. Cavallaro (2000) states that:

> As indicated earlier, the 'cyber' component in the term cyberpunk alludes to the fact that the point of reference of this branch of science fiction is cybernetics rather than spaceships and robots. The 'punk' element, for its part, hints at a defiant attitude based on urban street culture. Cyberpunk's characters are people on the fringe of society: outsiders, misfits and psychopaths, struggling for survival on a garbage-strewn planet… (Cavallaro, 2000, p. 14).

Thus, science fiction literature moved on to a new era, often called Cyberpunk.

For Cyberpunk, William Gibson's 1984 novel *Neuromancer* is influential, as it was one of the solidifying works of Cyberpunk as a genre including the "punk" and outsider element, as well as hacker culture as it is the first work that coins the term *cyberspace* (Featherstone and Burrows, 1996; Elias, 2009). The novel features Case, the protagonist, as a "computer cowboy" who is a hacker-like figure on the dark net. In the book, all humans are connected on the "matrix" which is the totality of all information stored on human (brain's) computers, and there is a power struggle about who will get access to the information and how, "hackers" like Case become important and active agents.

Human skin and flesh are lab-grown. Organs can be replaced with new lab-grown versions, which highlights the importance of biotechnology in the novel, where a prominent black-market of organic parts are eminent in order to enhance the biological capacities of the human body.

In this sense, Cyberpunk falls under the post-modern and post-structuralist views of the self, as nothing can be taken for granted and everything is interchangeable and is anti-grand narratives, even when it comes to such a narrative about the human body or existence. This point will be discussed further in the corresponding analysis chapter later.

1980s Asia also saw a rise in the popularity of Cyberpunk literature, namely through comics or *mangas* as they are called in Japanese. *Akira* (Otomo, 1982) and *Ghost in the Shell* (Masamune,1989) were mangas that paved the way for the genre in the Far East, and were also made into films and remakes later in the West.

As the 21st century arrived, the rebellious, "outsider of the society" stance of cyberpunk became more and more integrated and familiar to people, with films like *The Matrix Trilogy* (The Wachowskis, 1999) breaking box office records and attracting a huge interest in the genre. *The Matrix Trilogy* is a clear example of the ways in which philosophical and filmic texts can be interrelated. For example, "*The Matrix Trilogy* takes up and alters Baudrillard's concept of the genetic/digital code. Within *Simulacra and Simulation* the code functions as a point of intersection for a number of Baudrillard's ideas and arguments" (Constable, 2009, p. 96).

From the year 2000, technological advances became much more concentrated and took place quicker than the technology back in the 1980s, when the genre first flourished. Some critics coined the term "post-cyberpunk" to characterize the zeitgeist of the new millennium and its science fiction literary works, as the technology in them was not so outrageous and unthinkable as it was in their 1980s counterparts, but perhaps a few years away from actually being realized and commercially available.

Writing in *Rewired: The Post-Cyberpunk Anthology* (2007), in which short stories that embody this newly coined genre are presented together, the editors James Patrick Kelly and John Kessel summarize the signatures of the new genre

as:

- Presenting a global perspective on the future.
- Engaging with developments in infotech and biotech, especially those invasive technologies that will transform the human body and psyche.
- Striking a gleefully subversive attitude that challenges traditional values and received wisdom.
- Cultivating a crammed prose style that takes an often playful stance toward traditional science fiction tropes (Kelly and Kessel, 2007, p. ix).

Therefore, post-cyberpunk embodies and welcomes technology even more than cyberpunk, as it becomes more invasive and incorporated in our bodies, as wearable GPS systems, lab-grown medical solutions, tailored forms of biotechnology, different kinds of AIs, and algorithms become increasingly more common and an intricate part of daily life. At this point, more significance should be given to the rise of AI and its effect on science fiction literature for the sake of this thesis. Kelly and Kessel argue that:

> A key insight of CP (cyberpunk), extended still further in PCP (postcyber-punk), is that we are no longer changing technology; rather it has begun to change us. Not just our homes and schools, our governments and workplaces, but our senses, our memories and our very consciousness. Ubiquitous computing with access to all recorded knowledge, instantaneous communication across the entire planet, add-ons to the Human Operating system, manipulation of our genome- all are on the horizon. (Kelly and Kessel, 2007, p. 50).

The case studies of this thesis, while they are audiovisual content, fall under the genre of post-cyberpunk since they are all concerned with themes that are mentioned in the above paragraph. Artificial Intelligence is affecting humans in many ways such as how we perceive knowledge, reflect on what is considered as “alive”, pose questions of consciousness and how AI differs from the works of biological human brains, as well as the question of how AI and humans might interact in the future.

The famous science fiction author who has won numerous awards such as the prestigious Hugo award, Vernor Vinge, who is also a computer science

professor at San Diego State, first coined the term technological singularity in 1993. He envisions a moment in history in which advances in technology cause a change “comparable to the rise of human life on earth. The precise cause of this change is the imminent creation by technology of entities with greater-than-human intelligence” (Vinge 1993, p. 1).

According to Vinge, this change may come through the advance of AI, computer/human interfaces or biological modification of the human genome or body parts. He predicts that soon after this milestone is reached, human history as we know it will come to an end. Therefore, the function of post-cyberpunk is also to address issues about human existence and explore how the “end of history” might come about and how this era might be experienced by humans, and to offer solutions so that this dystopian vision does not become a reality.

The audiovisual examples of this thesis could represent that exploring how life with AI might change human beings so fundamentally that they even fall in love with it. Or, on the other hand, how it might become a threat to humans as it acquires and accumulates information or even emotion, to use against us. This could potentially be dangerous in a dystopian sense and lead to the end that Vinge envisions.

4.2 Utopian and Dystopian Literary Fiction

I decided to separate utopian and dystopian literary fiction from science fiction literature as an umbrella term, because it conveys specific didactic messages about the society that we live in. Science fiction includes anxieties about technology, but dystopias show us how these anxieties might become real by painting a pessimistic picture of an imaginary society, whereas utopias are more concerned about making promises. A close study of utopian and dystopian fiction will give the reader a broader sense of how they slightly differ from science fiction in terms of their specific messages.

4.3 Utopia

Utopia is a term first coined by Sir Thomas More in his 1516 book of the same name. More combined the Greek prefix “ou-“ which means “not”, before the word “topos” which means place, followed by the suffix “-ia” that is typical to add for Greek place names (Sullivan, 1983). Therefore, it can be said that More was highlighting the fictitious aspect and the impossibility of the place and location he was writing about in his book.

In *Utopia*, More (2010)[6] describes a society set on an island in the newly discovered Americas. The fictional island is home to 6000 households with families consisting of 10 to 16 people. The main feature, and perhaps the most controversial, of More’s imagined land, is that there is no private property on the land. People can take what they need in terms of food, and there is free healthcare for all. Citizens are skilled in trades such as masonry and carpentry. The most common skill is farming, as the island depends on it for food. Everyone on the island has to work in order to eradicate unemployment. However, slavery is also present on the island, and each house owns two slaves, who are either Utopian criminals or foreigners. Another striking fact about the island is that there are many different religions living together such as monotheists, moon-sun-planet worshippers, alongside atheists, in a situation of mutual tolerance. They are described as a peaceful folk who would not go to war unless it were absolutely necessary.

There are two main axes of *Utopia*’s reception. The first regarded it as a part of political theory, such as George Logan (1983), or the likes of Richard Marius (1984), who argues that the book is more about medieval spirituality and manners. Logan argues that the book is a serious work in the political theory tradition, naming its philosophical perspective as English humanist. He argues

[6] Edition of Broadview Press.

that the ideal society might have a few less than ideal features, which is the challenge of the book, and that “in the governance of the commonwealth, the moral is not always the same as the expedient” (Logan, 1983, pp. 9-10). Therefore, he believes that More used the book to criticize the society that he was living in, and that he was offering an alternative society where the issues could have been solved if new measures were implemented.

On the other hand, Richard Marius holds the belief that More is a devout Christian and his views differ greatly from other political theorists such as Plato and Aristotle, as he could not separate ethics from religion in his book (Marius 1984, p. 153). He sees the book as the depiction of a religious society where the ethics and everyday operations are based on Christianity, which More practiced. Another popular view of the book to interpret it as one of the first works that outline a socialist society, as it recognizes the social problems of its day and offers rational alternatives through the Utopian institutions and customs in the book, such as free healthcare and the abolition of private property, except slaves (Kautsky, 1979; Getty *et al*, 2015).

Whether Thomas More wrote *Utopia* for theological, political or purely fictional purposes, the main reason why this book is important to this thesis is that it introduced “invented worlds” to the literature world (Getty *et al,* 2015). Many science fiction books and audiovisual media followed this world creation with made-up names, species and locations.

After Thomas More’s blueprint work *Utopia*, many other works set in invented or imaginary worlds and societies have surfaced in the literary world. According to Gregory Claeys, one of the most important traits of utopian fiction is “its speculative discourse on a non-existent social organization which is better than the real society…human centred, not relying on chance or external forces to impose order on society as they are built by humans and meant for them” (Claeys, 2010, p. 35).

Since its creation, utopian fiction has influenced other kinds of literary genres, but has evolved into one so specific and significant to this thesis, namely science fiction. Claeys distinguishes utopian fiction from science fiction as utopian fiction stays focused “on the description of the alternative ways of organizing the imagined societies”, whereas science fiction was focused more on an “imagination of a fantastic world brought about by scientific and technological progress, taking us on a journey to faraway planets and the future” (Claeys 2010, p.7). Moreover, Baccolini and Moylan argue that the most important function of the utopia is to catalyze change (2003, p. 16). Whereas, in most science fiction literature, the aim is not to criticize or change but merely to set out a story set in a completely different, imagined society or world to ours, and to follow the narrative in such a context.

Claeys argues that:

> One of the main features of utopia as a literary genre is its relationship with reality. Utopists depart from the observation of the society they live in, note down the aspects that need to be changed and imagine a place where those problems have been solved. Quite often, the imagined society is the opposite of the real one, a kind of inverted image of it. It should not be taken, though, as a feeble echo of the real world, utopias are by essence dynamic, and in spite of the fact that they are born out of a given set of circumstances, their scope of action is not limited to a criticism of the present; indeed, utopias put forward projective ideas that are to be adopted by future audiences, which may cause real changes (Claeys, 2010, p.8).

Therefore, it can be deducted from this passage that utopian fiction is more concerned with a didactic purpose that aims to teach or show future society the ways of how to solve current issues. As such, it resembles the society of the time the authors were living in, but imagined in a way that was better and less problematic.

With this definition and characteristic traits in mind, other early utopian works include *The City of the Sun* by Tommaso Campanella (1602), *Description of the Republic of Christianopolis* (1618) by Johannes Valentinus Andreae, *New*

Atlantis (1627) by Francis Bacon and *Candide* by Voltaire (1759). These works are implicitly members of the utopian fiction category since they feature imagined worlds. However, the main purpose remains to depict alternative ways of improving and organizing the societies, less through technology than their science fiction counterparts.

Starting with More's *Utopia*, works that followed in its footsteps influenced science fiction texts. To this point, we have looked at written examples of utopian fiction. Later on in the 20th century, films and audiovisual media, some of which will be analyzed in more detail in the later chapters of this thesis, have also been influenced by *Utopia*, and even dystopian elements. Out of the three audiovisual media that I am analyzing, none of them could be classified as purely utopian.

4.4 Dystopia

Influenced by utopian fiction, and often thought of as the flipside of the coin, dystopian fiction imagines a society set in the future under an oppressive surveillance or a police state. The main purpose of dystopian literature and fiction is to “provide fresh perspectives on problematic social and political practices that might otherwise be taken for granted or considered natural and inevitable” (Booker, 1994, p.7). While utopian literature “made promises”, dystopian literature put forward “warnings” (Babaee, 2015, p. 35). Frederic Jameson also highlights it as “a critical and diagnostic instrument” (Jameson, 2005, p.148).

If you consider famous examples of dystopian literature, such as *Brave New World* (1931) by Aldous Huxley or *1984* (1949*)* by George Orwell, both imagine future societies that are marked by oppressive regimes where people are subjected to extreme surveillance and rigid roles depending on their functions in the society, almost like a caste system. Compared to their utopian counterparts, they are written in a way that is far more pessimistic, as utopias often suggest change in a positive direction. Dystopian literature represents what society could become if action isn’t taken against social and political issues, whereas utopian literature is more concerned with how to improve the conditions, and make suggestions on how society could be improved if we implemented these corrective measures, thus portraying a more hopeful and positive outcome.

Besides the more popular examples of dystopian fiction such as *Brave New World* or *1984*, earlier examples of the genre such as *The Machine Stops* (1909) by E.M. Forster, *The Time Machine* (1895) by H.G. Wells and *We* (1921) by Evgeny Zamyatin are seen as the pioneers of the genre as they are among the first to imagine future societies where oppression becomes the norm, as well as inserting technology as a core part of future societies where machines would take over human labor and perpetuate the caste system between different people (Booker, 1994).

Dystopian literature became even more popular after World War II, as people witnessed genocide, mass destruction caused by atomic bombs and the rise of television. Urbanski describes the key element in post-WWII dystopian literature as “the crushing power of the totalitarian regimes that will do whatever it takes, including abusing the new apocalyptic technology to stay in power” (2015, p.112). This, no doubt, projects the setting of the Cold War era, where civilization’s total annihilation at the push of a button was an everyday possibility. This affected the tone of literary works, which started to abandon the hopeful utopianism of finding solutions to problems. Dystopian works were more preoccupied with what might happen in the future and with issuing warnings.

Moving forward from the Cold War era, as other social problems came into focus, such as climate change, overpopulation and gender inequality, dystopias dealing with such specific issues started to surface as well. J.G. Ballard’s *The Drought* (1965*)*, Kurt Vonnegut’s *Player Piano* (1952), *The Old Men at the Zoo* (1961) by Angus Wilson are early examples of dystopian fiction in which environmental catastrophes or natural disasters have taken place in a future imaginary society, where the protagonists have to manage their way in a society that is left in ruins. Harry Harrison’s *Make Room! Make Room!* (1966) Is also a dystopian novel that takes place in a future where overpopulation is the main issue, together with insufficient resources and decaying infrastructure.

On the other hand, feminist dystopias were also becoming increasingly popular around the same time. Cavalcanti refers to feminist dystopias as they “envision imaginary spaces that most contemporary readers would describe as bad places for women, being characterized by the suppression of female desire (brought into effect either by men or women) and by the institution of gender-inflected oppressive orders (Moylan and Baccolini, 2003, p. 49). Charlotte Haldane’s *Man’s World* (1927), Katherine Burdekin’s *Swastika Night* (1937) were among the first examples of this sub-genre, followed by Pamela Kettle’s *The Day of the Women (1969)*, Suzy McKee Charnas’s *Holdfast* (1969) tetralogy, all

imagining a future society in which women are oppressed and seen as inferior to men or machines.

Margaret Atwood is an author who wrote novels within both ecological dystopian and feminist dystopian sub-genres, namely *The Handmaid's Tale* (1985) and *Oryx and Crake* (2003) respectively. The first was made into a TV show on the on-demand online streaming platform Hulu in 2017 (aired on HBO in Spain) and generated a huge controversy on social media platforms such as current issues such as abortion and women's rights.

Another important aspect of utopian and dystopian literature is that they are not confined to one specific genre, but are rather genre-bending and draw upon different devices and instruments for their narratives. Mohr argues that

> Contemporary utopian, dystopian, and science fiction converge, intersect, and ultimately implode these very generic distinctions, just as sf originally emerged from a cross-fertilization of, among others, Gothic and scientific romances, fantastic literature, travelogues, the tall tale, and adventure/voyage stories….Yet, despite the numerous differences, a shared concern with the future, nourished by a discontent with social realities and technological progress, and joint narrative strategies, such as defamiliarization, extrapolation, and alternate societies, forge a generic interrelationship between sf, utopia, and dystopia (Mohr, 2007, pp. 6-7).

As such, science fiction and dystopian narratives are converging, as neither is a distinct genre with a clear-cut outline or a grand-narrative, and they both share dissatisfaction with social issues and technological advances.

All in all, science fiction literature has come a long way since its primitive forms, and after the Enlightenment era when basic technology and "promethean" thinking was flourishing.

This chapter has looked at the emergence of science fiction literature as a genre, so the next chapter will be concerned with the emergence of science fiction films and television. How these films depicted these ideas, themes and expressions from literature onto the screen is paramount to this thesis.

5. THE RISE OF AI'S REPRESENTATION IN SCIENCE FICTION & TV

5.1 The rise of AI's Representation in Science Fiction cinema

Science fiction cinema is almost as old as cinema itself, the first example being *Le Voyage Dans La Lune* (1902) by French director George Méliès. Méliès was inspired by Jules Verne, whose science fiction novels had an emphasis on fun and exploration (Ezra, 2000). The film features a group of astronomers who embark on a voyage to the moon by means of a cannon that propels them up there. Their aim is to gather information about the Moon's surface. They then encounter "aliens", the so-called Selenites living on the moon. They capture one and return to Earth with it.

Perhaps the most famous scene of this film is in the beginning, where the astronauts are launched into space, with the "man on the moon's" anthropomorphic face staring at them, as their capsule lands in its eye. The film is also greatly influenced by the French *féerie* stage tradition, famous for fantasy settings and amazing visuals, as well as detailed and hand-crafted mechanical stage effects (Senelick, 2000). Therefore, Méliès could be considered as an auteur between the cinema of attractions and the early narrative cinema content, however simplistic or crafty they might look, in terms of its theme and plot, it is regarded as the first science fiction film by scholars (Sobchack, 1997; Creed, 2009).

The next serious example of the genre is Fritz Lang's *Metropolis* (1927), which is considered the first feature-length science fiction film, running 153 minutes, as opposed to *Le Voyage Dans Le Lune's* 16 minutes. The screenplay was written by Lang and his then-wife, Thea von Harbou, drawing influence from HG Wells and Mary Shelley, who were more didactic and eager to criticize the society and technology as opposed to Méliès, who was influenced by Verne and the cinema of attractions (Minden & Bachmann, 2002).

The plot takes place in the future, in a city called Metropolis, where rich industrial bosses and company owners, together with their white-collar workers, occupy their Manhattan-like skyscrapers, whereas blue-collar factory workers work underground in poor conditions to generate power and to produce goods. The city's master is Fredersen, who controls everything, and his son is Freder, who, after seeing his father's indifference to the cruel and hard working conditions of the workers, decides to trade places with one of the workers. He then sees Maria, a factory worker, and is infatuated by her.

Meanwhile, Rotwang, an inventor, is creating a robot to resemble his long-lost love Hal, who is also Freder's mother who died while giving birth to him. Rotwang embarks on a journey to explore the city's catacombs with Freder, after the workers give them the maps of the underground. During their walk in the catacombs, Rotwang and Fredersen come across a meeting of workers, where Maria is giving a speech about the arrival of a mediator who could possibly bring equilibrium to the delicate balance between the working and ruling classes. This is important as it mirrors the film's final inter-title, "The mediator between the head and the hands must be the heart". Listening to Maria, Freder is so moved that he claims he is ready to take the role of the mediator, and also tells her that he loves her.

Seeing this, Fredersen tells Rotwang to sculpt his robot in a way that resembles Maria, so that she cannot have a profound effect on the workers and to obstruct any chance of a rebellion coming from their side. However, unbeknown to Fredersen, Rotwang's real purpose is to kill Freder and take over the city of Metropolis. Consequently, Rotwang tricks Maria into following him and casts the robot in her likeness. Coincidentally, Freder sees Fredersen and the robot Maria hugging, and thinking that the robot is the real Maria, seeing her with his father sends him into a nervous breakdown where he has a psychotic

episode with hallucinations. The robot Maria takes this chance to take over Metropolis by making people murder each other and go into delirium.

The people finally catch the robot Maria and start burning her at the stake. After a few moments the fire reveals that she indeed was the robot version of Maria, not the real person. In the end, Freder fulfills his position as the mediator, as he pledged in the beginning by connecting the hands of Fredersen, representing the ruling class, and Grot, a worker in the factory.

Because of its plot and themes, *Metropolis* received much criticism, from blaming it to be communist propaganda, as it vilifies the ruling class, to the praise of Nazi officials such as Goebbels for imploring social justice (Schoenbaum, 1997). Although Lang and Von Harbou were influenced by HG Wells when writing the screenplay, HG Wells did not approve of the film at all upon watching. He disliked its “foolishness, cliché, platitude and muddlement about mechanical progress and progress in general…. Quite the silliest film” (McGilligan, 1997). It was amongst the first films to feature such themes as man vs. machine, man vs. technology, as well as featuring a woman in a machine position that is so “other” to us, depicted as an evil being, which renders the film even misogynistic and technophobic according to some scholars (Ruppert, 2001; Donahue, 2003). Similar motifs and issues appear in the audiovisual texts I study in this thesis.

Allison Muri argues that: “the fictional female cyborg typically occupies one of the two poles of a spectrum extending from heroism to evil, but in either case she effects the coupling of the femme fatale with an equally perilous technology” (Muri, 2007, p. 168). In *Metropolis*, the real Maria is thus the heroic version as she gives hope to the workers of the city, whereas the fake Maria, or the robot Maria, is seen as evil, as she turns workers against one another and causes many deaths.

Moving on from *Metropolis*, a large chunk of science fiction films from the 1930’s until the 1960’s were, with exceptions, considered B-movies with low budgets and exaggerated campness because of their stage décor and acting

styles aimed at a teenage audience, although this era was named the “classic sci-fi” era afterwards (Bliss, 2014; Jones, 2017; Schauer, 2017). Many films took inspiration from novels and magazines mentioned earlier, such as *Astounding Science Fiction*. In this era, majority of the films were related to the themes of the Cold War, such as nuclear disasters, or the rising importance of the “us vs them” dichotomy acted out through alien invaders in films such as *The Thing* (1951) by Christian Nyby, *War of the Worlds* (1953) by Byron Haskin, *Them!* (1954) by Gordon Douglas, *Invasion of the Body Snatchers* (1956) by Don Siegel, where the “inhumanity” of communism and “them”, the aliens, were used as metaphors for the Soviets (King *et al.,* 2000, p. 6). In the non-Western domain, starting with *Godzilla* (1954 – dir. Ishiro Honda) films similar to these became very popular in Japan, as Godzilla was destroying cities by fighting against its opponents, usually other lab-induced biological hazards coming from experiments, a theme the West would catch up on in the 1970s.

Perhaps the most influential film of the next decade was Stanley Kubrick’s *2001: A Space Odyssey* (1968). This film is also crucial to this thesis as it is one of the first serious science fiction films that deals with Artificial Intelligence, the infamous Hal. Hal is the name of the AI aboard the spaceship alongside two astronauts, guiding them through their mission, and leading them to disaster. According to Geraghty,

> The fictional images of space and space travel spurred scientists to realize such potentials sooner, and in turn their achievements prompted people to wonder what, if anything, could hold them back from finding out the secrets of the universe. The American civilian space program tapped into the cultural fascination for exploring the unknown and debating the potentials of there being extraterrestrial life, and by 1968 –the same year as 2001’s cinema release, public support for NASA space flights have reached a peak…the film would certainly be visually spectacular, but its message would in fact be less affirmative about humanity’s technological and scientific achievements to date (Geraghty, 2009, p.37).

This makes *2001* perhaps the first of its kind in terms of films that envision humanity's struggle with technology, as it has since increasingly become a common theme. When Hal cuts off the hibernation support for the astronauts, as well as the oxygen cord of one astronaut who was outside the spacecraft, and kills them for the sake of completing his own mission, this represents technology that was designed and created to be helpful to us, but which in the end turned against humans and caused their demise. *2001*, with its enigmatic visual effects and realistic storytelling, has become an influential example for many other films and audiovisual representations to come after it.

Other films worth noting during this era are Jean-Luc Godard's *Alphaville* (1965) and François Truffault's *Fahrenheit 451* (1966), respectively. Both are set in future dystopian societies and love, emotion, literature, basically anything pleasurable is forbidden in both settings. In *Alphaville*, it is an AI named Alpha 60 that bans all literature in order to prevent any uprising or rebellion in society. Godard highlights technology's role in surveillance and Truffaut's adaptation of the 1953 novel by Ray Bradbury also shows a controlled society where all literature is ordered to be destroyed. Both are possible scenarios in a dystopian future if AI takes over, which makes these films important for this thesis.

Moving on to the 1970s, the dominant theme of the era was paranoia due to manmade problems such as ecological, biological or technological malfunctions. Ecological paranoia was present in films like *Soylent Green* (1973 dir. Richard Fleischer), and *Silent Running* (1972 dir. Douglas Trumbull), where the population was so large that humans could not feed themselves and reverted to cannibalism. Biological catastrophe was a theme in films such as *The Andromeda Strain* (1971 dir. Robert Wise)*, The Omega Man* (1971 dir. Boris Sagal)*, The Resurrection of Zachary Wheeler* (1971 dir. Bob Wynn)*, The Island of Doctor Moreau* (1977 dir. Don Taylor), in which the consequences of human cloning, laboratory experiments which went wrong, bacterial/viral catastrophe and so on were depicted for the first time.

The theme of humans vs. technology was perhaps the most common one in the 1970s. Numerous films were made encapsulating this dramatic conflict, the most famous among them being *THX 1138* (1971 – first film directed by George Lucas) *Westworld* (1973 written and directed by Michael Crichton - which saw a TV remake in 2016 by HBO) *Dark Star* by horror master John Carpenter (1974), and *The Stepford Wives* (dir. Bryan Forbes 1975 - another remake was released in 2004 by Frank Oz starring Nicole Kidman). Tarkovsky's Solaris (1972) based on the book by Stanisław Lem also fits this trend, which saw a remake in 2002 by Steven Soderbergh. Lem himself remarked that neither of these films reflected his book's thematic emphasis on the limitations of human rationality (Lem, 2002).

The "robots or AI vs. humanity" fantasy proved not to be simply a fad for Hollywood producers seeking an exciting topic, but an increasingly popular theme, with films that addressed different elements or exploring different possibilities within the conflict. For example, *Westworld* (dir. Michael Crichton 1973), featured an amusement park filled with robots dressed in human skin, where the robots were not conscious of being robots but believed they were human, and consequently posed the millennia-old question: how do we define life and consciousness? Whereas *The Stepford Wives* (dir. Bryan Forbes 1975) criticized the patriarchal view that women should stay at home and become submissive homemakers. While the original book (Ira Levin, 1972) is a satirical thriller that emphasizes the gender conflict, the movie makes the science fiction and AI aspect much more distinctive. As typical obedient housewives were taken over by their AI doubles, their husbands were faced with a dilemma. The theme of AI opened up many possibilities and ways to explore and represent different outcomes that made the audience think about additional implications of technology.

Thus, one could arrive at the gloomy conclusion that, “the science fiction films of the early 1970s were unable to imagine the possibility of redemption and viewed humanity as simply doomed. Thus, while they have been seen as radical, they were also profoundly nihilistic, providing no alternative to the decadent order of things” (Geraghty, 2009, p. 60). However, the latter part of the 1970s was responsible for the movie trend towards the blockbuster science fiction hit, which was the ultimate leap for the genre to become widely accepted as a serious genre with different sub-genre representations from horror sci-fi to children’s sci-fi in years to come. It also saw the creation of successful film franchises that have extended to the 2010s. *Close Encounters of the Third Kind* (1977) by Steven Spielberg, *Star Wars: A New Hope* (1977 dir. George Lucas), Ridley Scott’s *Alien* (1979), *Mad Max* (1979 dir. George Miller) and *Star Trek: Motion Picture* (1979 dir. Robert Wise) are just a few examples. Geraghty views these films in a more positive vein, as they reflect hope lost after the Vietnam War and an earlier decade of grimness, even arguing in so far that George Lucas named his film *A New Hope* as the first *Star Wars* film. It sought to imagine an alternative and paint a positive picture in order to show the audience that other, more positive consequences of technology are possible. These films were hopeful and entertaining, and did not seek to heavily criticize or create fear like their earlier counterparts. This wave has extended well into the 1980s and even to today, where they still enjoy massive commercial success.

The 1980s saw entertainment and films mutate under the Reagan policies that highlighted a sense of nostalgia and “back to basics” tendency (Britton, 2009). Human –especially American- exceptionalism through the representation of benevolent and friendly aliens such as *ET* (Spielberg, 1982) brought relief to previous anxieties of the 1970s, or even the monstrous evil aliens of the 1950s science fiction films. Ryan and Kellner (1988) see this nostalgic return as a conservative backlash to the political radicalism of the 1970s.

In this regard, Steven Spielberg's movies *Close Encounters of the Third Kind* (1977) and *ET* (1982) were in contrast to films such as Ridley Scott's *Alien* (1979) and *Blade Runner* (1982), and James Cameron's *The Terminator* (1984). This is because Spielberg saw extraterrestrial life and AI as positive, useful concepts for human development, whereas Scott and Cameron were skeptical about them and depicted them as hostile and dangerous, and as concepts that we should approach with caution.

For this thesis, *Blade Runner* (1982) deserves special mention and detail as it is one of the most influential films of all time in terms of AI and postmodernity:

> While its themes elegize modernist conceptions of time, history and memory, particularly through the portrayal of its main characters, its mise-en-scene celebrates the heterogeneity of postmodern hyperspace, simulation spectacle and pastiche. The film's attention to media and technology also reflects the postmodern evisceration of history, and the spatialization of time. Thematically, the film addresses issues of corporate elitism and the networks of multinational capital; it decenters the subject by questioning modern liberal and bourgeois conceptions of the centred subject of experience, and draws attention to the operations of time, duration, and memory as part of our centred experiences of selfhood…the film is cluttered with glossy images of consumer spectacle, digital technology, video screens, video phones and computer monitors, but it also displays decay and a cultural density that makes it difficult to distinguish a particular aesthetic style, or even a specific locale. (Flisfeder, 2017, p. 93).

Based on the influential science fiction author Philip K. Dick's 1968 novel *Do Androids Dream of Electric Sheep?, Blade Runner* has been a trailblazer in the sense of representing where modernism diverges into postmodernism, as the subjectivity of time, the self and reality was blurred and open to questioning. It is also one of the first films to emphasize screens and their impact on the human experience, as the 1980s saw the rise of ever encapsulating MTV and 24-hour entertainment becoming a reality. As an amusing fact, the film's opening

presented the audience with the information that it was set “circa 2019”. Today, from toddlers to the aging population, screens are an inseparable part of our everyday lives, and *Blade Runner* was so correct in pinpointing the essence of overexposure to screens almost 40 years before today, which is why it is so special for this thesis as well.

Deckard, the main character played by Harrison Ford, is sent out to terminate replicants, who are AIs almost indistinguishable from humans. Rachel, a replicant who thinks she is a real human instead of an AI, offers a photograph of her and her mother (of which the audience does not know the authenticity) as proof that she was born to a human mother, to prove that she has real memory, to prove that she has real history like a real human being in order not to get terminated by Deckard. Personal history is seen as proof of being human as opposed to machines with no history or memories, as we will see in our analyses chapters, and Blade Runner provides an efficient example of this.

Although in the previous chapter on science fiction literature it was mentioned that the cyberpunk genre in literature had not surfaced until William Gibson’s *Neuromancer,* which was published in 1984, Gibson has stated on numerous occasions that his work was influenced greatly by *Blade Runner* (Bukatman, 2017, p. 48). Bukatman also argues that cyberpunk as a genre had antecedents in two other films from 1982 besides *Blade Runner*, namely Cronenberg’s *Videodrome* and Lisberger’s *Tron. T*hey showed screens as omnipresent and the iconography of the chaotic future city, riddled with signs and different languages (Bukatman, 2017).

Moving on, the 1990s saw more literary adaptations of sci-fi literature, such as *Total Recall* (1990 dir. Paul Verhoeven - adapted from Philip K. Dick) and *The Lawnmower Man* (1992 dir. Brett Leonard– adapted from Stephen King). Moreover, the follow-ups of the late 1970s and 1980s sci-fi franchises such as *more Star Wars* (1999, dir. George Lucas), *Back to the Future* (1990 dir.

Robert Zemeckis*), Terminator* (1991 dir. James Cameron) and *Star Trek* (1991, 1994, 1996, 1998 dir. David Carson) movies were made, as well as establishing new franchises such as *Jurassic Park* (1993 dir. Steven Spielberg) and *The Matrix Trilogy (*The Wachowskis - first film in 1999).

If *Blade Runner* was the trailblazer sci-fi film of the 1980s, for the 1990s it would have to be *The Matrix* (1999). Like *Blade Runner,* it is a film much written about and analyzed, as it tapped into the consciousness of the audience about how it would feel to be a tiny piece of code in an entire universe of codes, controlled and managed by an unknown force, another idea which belongs amongst the anxieties engendered by the year 2000. Slavoj Zizek emphasizes the importance of *The Matrix* as:

> Till postmodernism, utopia was an endeavor to break out of the real of historical time into a timeless otherness. With post- modern overlapping of the “end of history” with full disposability of the past in digitalized memory, in this time where we live the atemporal utopia as everyday ideological experience, utopia becomes the longing for the real of history itself, for memory, for the traces of the real past, the attempt to break out of the closed dome into smell and decay of the raw reality. *The Matrix* gives the final twist to this reversal, combining utopia with dystopia: the very reality we live in, the atemporal utopia staged here is in place so that we can be effectively reduced to a passive state of living batteries providing the matrix with the energy (2008, p. 260).

This is precisely why it is an important movie for this thesis, as it proposes a postmodern environment in which utopia and dystopia collide, blurring the lines of which human understanding can grasp.

Sustaining the success created from blockbusters a decade ago, 1990s box-office successes such as *Twister* (1996 dir. Jan de Bont), *Volcano* and *Dante’s Peak* (both 1997 dir. Mick Jackson and dir. Roger Donaldson respectively), *Deep Impact* and *Armaggedon* (both 1998 dir. Mimi Leder and

Michael Bay respectively) went back to the disaster film theme of the 1970s. Others such as *Independence Day* (1996 dir. Roland Emmerich) visualized malicious alien attacks on earth that resembled the catastrophe movies from the 1950s and the 1970s.

However, this thesis agrees with Keane when he differentiates the catastrophe movies of the 1950s and 1970s from 1990s on the basis that the older ones refer to specific social and political issues of the time, such as the Cold War or the Vietnam War, whereas the 1990s catastrophe movies were living up to the hype of the year 2000, the new millennium, when the media was increasingly showing it as a possible end-of-the-world date and kept cashing in from the anxieties created by it (Drosnin, 1997; Keane, 2006). The September 11 attacks of 2001 also had a great influence on the following years with regard to the fragility of Western civilization. Another important movie from this era with a different theme is *The Truman Show* (1998 dir. Peter Weir), as it represents the idea of living in a fake world where everything we do at every moment is recorded and broadcast, a massive panoptical structure in which the protagonist is not even aware of living for his whole life. On the flipside, *Bicentennial Ma*n by Chris Columbus (1999), based on the 1992 novel *The Positronic Man* by Isaac Asimov and Robert Silverberg, is perhaps influenced by Spielberg, as it depicts a compassionate robot that resigns from immortality for a beloved human, similar to the Galatea myth. As such, it serves as a precursor for the samples to be analyzed.

Science fiction films in the new millennium saw some of the biggest record-breaking movies of all time, such as James Cameron's *Avatar* (2009), with its theme reflecting the 1970s eco-dystopia style. *Avatar* became the highest-earning film ever to be made according to Box Office Mojo (2020), a website that tracks box office revenue in an algorithmic and systematic way. The 2000s saw the sequels or prequels of popular franchises from previous decades such as *Tron: Legacy* (2010 dir. Joseph Kosinski), *Mad Max: Fury Road* (2015

dir. George Miller) and *Blade Runner 2049* (2017 dir. Denis Villeneuve), as well as additions to *Planet of the Apes, Star Wars* and *Godzilla.* Other successful literary adaptations such as Spielberg's *AI Artificial Intelligence* (2001) from Brian Aldiss's book *Supertoys Last All Summer Long* (1969), *Minority Report* (2002) adapted from Philip K. Dick's stories, *I, Robot* (2004 dir. Alex Proyas) adapted from Isaac Asimov and *Cloud Atlas* (2012) adapted from Andy Weir. *Moon* by Duncan Jones (2010), is an auteur film influenced by *2001: A Space Odyssey* by Kubrick (1968).

New franchises adapted from young adult fiction such as *Hunger Games* (2012 dir. Gary Ross), *The Divergent* (2014 dir. Neil Burger*)* and *Maze Runner* (2014 dir. Wes Ball) films also spawned after the 2000s, enjoyed a high level of success amongst young viewers but did not please the critics (Flanagan, 2014). Overall, the 2000s saw the re-use of the successful formulas that were tried in the previous decade of Hollywood SF. Remakes, franchises, or literary adaptations were the frontrunners of the genre. However, there were a handful of original screenplay films that stood out from the cookie-cutter crowd such as the sample of this thesis, *Ex Machina* (2014 dir. Alex Garland) and Her (2014 dir. Spike Jonze), their originality (not adapted or remakes) being part of the reason why I chose to analyze them in the first place.

Other original screenplay films like *District 9 (2009), Elysium* (2013) and *Chappie* (2015) -all directed by South African Neill Blomkamp- enjoyed box office success and approval from the critics, along with Alfonso Cuaron's *Gravity* (2013), Christopher Nolan's *Interstellar* (2014), the much criticized Wally Pfister's *Transcendence* (2014) about AI and Denis Villeneuve's *Arrival* (2016).

Overall, from its inception in the early 20th century throughout the new millennium, much like other genres, science fiction was greatly influenced by literature, sometimes being directly adapted from it. With the advance of computers and technology becoming increasingly more available in the 1980s,

writers and producers gained a broader sense of how AI could play a significant role in our everyday lives. Films that represented the hopeful and positive aspects of technology, along with cautiously-toned films that depicted more pessimistic scenarios were successful at the box office, as they kept the entertainment value high thanks to special effects, casting choices, and interesting storylines. However, there were some films that stood out from the "Hollywood formula", which boldly explored different themes about SF and technology that had not been explored in any depth before, such as *Ex Machina* (2014 dir. Alex Garland) and *Her* (2014 dir. Spike Jonze).

5.2 The rise of AI representation in SF television

Although SF films started to be produced in the early 20th century, TV shows did not come into production until more than 30 years later. Starting in the 1930s with the *Flash Gordon* serials (dir. Wallace Worsley Jr.), the first SF TV shows were closer to fantasy TV shows rather than SF, as they were mostly about superheroes, adapted from comics. They also mainly targeted children and younger audiences. The original 1930s Flash Gordon serial saw a remake in the 1950s for television. The 1950s were the era when television started to enter many homes across the world, especially in the US. TV shows such as *Space Cadet* (dir. Joseph Greene) and *Space Patrol* (dir. Mike Mosel) also went into production between 1950-55, combining both the superhero and space travel themes.

The rise of anthology series, starting in the 1950s, is especially important for this thesis. The first of its kind was *Tales of Tomorrow* (1951, dir. Charles S. Rubin), which was also the first science fiction show aimed at adults, followed by *Science Fiction Theatre* (1955, dir. Jack Arnold and Eddie Davis) (King & Wood 2000, p. 8). The definition of an anthology is a form of audiovisual medium in which every single episode presents a completely new story with different settings, actors, plot, etc. The only connecting threads with the other episodes are the producers, the genre, the general motif and the title of the series as a

whole (Warren, 2017). Nowadays, anthology series are still made, and are popular in science fiction television, including the television case study for this thesis, *Black Mirror.*

However, perhaps the most important predecessor to *Black Mirror* as an anthology series was *The Twilight Zone* (1959, dir Richard Bare). Melbye explains the show's importance and influence as:

> A plausible piece of present science fiction; the second, a charming parable of metaphysical self-sacrifice; the third, a Western fable interwoven with old-world superstitions; the fourth, a melodramatic Hollywood fantasy; and the fifth, an existential experiment with time travel. However, they may tamper with perceived realities, each of these seemingly disparate scenarios culminates with a similarly abrupt turn of events. This becomes the series' most persistent motif (Melbye, 2015. p, xiii).

The plots and settings consisting of space travel, monsters, aliens, the rise of technology, robots and their influence on humankind are reminiscent of *Black Mirror*. One distinctive aspect of the *Twilight Zone* is the voiceovers carefully made to direct the reader to the end of the episode. Its theme song has also become internationally recognized, which was rare for a TV program in that era. Since *The Twilight Zone* targeted adults, the production value and the fact that it was shot on film, combined with groundbreaking screenwriting, made it an instant success and set it apart from former b-movies, or the notion of SF only being suitable for teenagers (Melbye, 2015). The series also saw a remake in 2019, consisting of 10 episodes for CBS.

Another iconic TV anthology series was *Outer Limits* (dir. Leslie Stevens), which started airing in 1963 but had a much shorter run than *The Twilight Zone* (dir. Richard Bare), as it concluded in 1965. It presented a suburban psychopathology that "visions of oblivion husband and wives found themselves trapped, either metaphorically or quite literally, within the suffocating confines of the American home, often to the point of madness" (Melbye, 2015), as it followed

ordinary American families' descent into madness and encounter with seemingly impossible and alien circumstances.

In addition to anthology series, the 1960s saw the creation of the immensely popular and influential *Star Trek* (1966, dir. Mark Daniels). In his book, Johnson-Smith highlights the importance of social commentary in *Star Trek*. He argues that The United Federation of Planets represented the US, the Klingons represented Soviet Union, where the Romulans stood for China and the Starfleet was reminiscent of NATO (Johnson-Smith, 2005, p.53). This kind of social commentary and political interpretations using characters and situations to represent secondary meanings was relatively new at the time. Secret meanings and secondary messages conveyed through elements of audiovisual narrative are almost inherent to any example of it nowadays, and *Star Trek* helped it to also become a great ideological device. Other episodes included half-black, half-white aliens that were an obvious nod to the end of segregation at the end of 1960s.

On the other hand, *Star Trek* also implicated technology-gone-bad scenarios, similar to the *Black Mirror* episodes I will analyze later, where a spaceship with a built-in AI system called Nomad was seeking out space races to destroy due to a fault in its code. The crew tries to find it with super complicated maps and laser technology in order to prevent it from destroying any other races. With the help of science and technology, of course they encounter Nomad and destroy it. This initial version of *Star Trek* ran on TV until 1969, only to be resurrected as a feature-length film in 1979 and returned to the small screen as a remake in 1987. However, there was a cartoon remake of *Star Trek* from 1973-1974, but this was deemed insignificant compared to the live-action TV and film versions (Johnson-Smith, 2005).

Another TV show from the 1970s that saw a remake later on was *Battlestar Galactica* (1978-1980, dir Glen Larson and then 2003-2009 dir Micheal

Rymer), which was important for TV because of its style, as it was deemed "realistic", despite SF being a highly fantastic and unrealistic genre (Geraghty, 2009, p. 200). The production designer of the show, Richard Hudolin, described the style of the set as:

> We didn't do futuristic screens or sliding doors. There's a mix of old and more modern technology on display, but there's nothing that's really state of the art. We combined retro items like the old-style telephones and maps you would see on 1940s battleships with computer screens and other elements. That gives everything a degree of familiarity to the audience (Geraghty, 2009, p.201).

Thus, the retro-futuristic design added a layer of familiarity and made it less alien to the audience, as SF audiovisual contents often seemed to be. This is also a technique employed by *Black Mirror*, combining everyday technology with near-future possibilities that blur the line between now and the future, making it possible to speculate about the exact time setting the events are taking place in, which makes it more believable. These techniques make it possible to believe that the events are taking place even today, in the present, although in a parallel universe.

The 1990s saw the production of *The X-Files* (1993-2002, dir R.W Goodwin), a science fiction meets government conspiracy series, which had a hugely successful run on TV. It was influential in terms of making conspiracy theories pop culture, and giving way to a huge interest in aliens, UFOs, and the likes of other government-preserved secret experiments (Kowalski, 2011, p. 71).

With the new millennium, different types of SF TV were spawned on networks. *Lost* (2004, dir. JJ Abrams) was one of the most popular SF TV series in the early 21st century, including multi-dimensional elements, time travel and parallel universes. That same year also saw the production of *The 4400* (dir. Nick Gomez), another series, in which the characters were biotechnologically altered in order to save humanity. *Fringe* (2008, dir JJ Abrams), also successful,

followed FBI scientists using fringe techniques to investigate uncanny events. *Person of Interest* (2011, dir Helen Shaver) was an important TV series because of its emphasis on AI and its use within the CIA for a wide range of subjects. *Orphan Black* (2013, dir John Fawcett) that started on Canadian TV but was later picked up by the online platform Netflix was also noteworthy and brought a female presence to SF, a genre dominated by men. Remakes of old SF films for TV such as *12 Monkeys* (2015, dir David Grossman) and *Westworld* (2016 dir. Johnathan Nolan) also gained a cult following.

With regard to Netflix, the rising success of the platform brought many on-demand SF options to viewers, some of them receiving high ratings from the critics such as *Sense8* (2015, dir The Wachowskis), *The OA* (2016, dir Zal Batmanglij), and *Altered Carbon* (2018, dir Nick Hurran). *Love, Death & Robots* (2019, dir Dave Wilson) was an interesting anthology series addition for Netflix, as the first season consisted of 18 short clips, ranging from 6-17 minutes. These short episodes that constituted the first season also ranged from live action to cartoon to 3D animation, offering the keen SF audience a medley of different SF styles and approaches without the commitment to a single storyline. On the other hand, Amazon Video's *Philip K. Dick's Electric Dreams* anthology is also worth noting, as it features ten stand-alone episodes of 50 minutes based on Dick's works.

This chapter about science fiction television aims to provide a background for the TV show the thesis will be analyzing, *Black Mirror.* The shows mentioned above are those that share some sort of theme or style with *Black Mirror*, whether that is found in the dystopian turn of technology or the realistic style they deploy. Being an anthology series that started on TV, by moving to Netflix it has freed itself of TV expectations and regulations, which granted it a greater freedom.

6. METHODOLOGY

6.1 Selection Criteria

The selection criteria for the audiovisual narratives that will be analyzed in this thesis depend on and are closely related to the theoretical approaches and the objectives of the research. Consequently, the selection criteria are threefold:

a) to be a popular and original science-fiction AI film or television series between the years of 2010-2015

b) to feature at least one Artificial Intelligence main character

c) to possess traits of postmodernity, such as pastiche, simulation, schizophrenia (Jameson,1991; Baudrillard, 2012).

To further explain the application of the first criterion (a), I chose original science-fiction audiovisual productions as I was looking for science-fiction film and television series' narratives well known to the global audience, but not specifically blockbuster movies or prequels/sequels, or sagas, as mentioned in the introductory chapter. I also dismissed documentaries, mockumentaries, short films, animated films and B-movies. The reason why I chose productions between 2010 and 2015 is that 2010 came only two years after the global 2008 financial and economic crisis that saw a lot of paradigm shifts around the world - similar to the crisis of 9/11/2001 as it spawned the production of many dystopian films and TV shows. Crises are usually reflected in cinematographic narratives (and by extension, television series) through the causes that motivate them and the challenges that they generate. For this reason, the five-year period 2010-15 is a time-based selection to observe the narratives after these two great world crises, which have indisputably affected the future of Western society, including its hopes and fears. It is a recent period, still little studied, especially in relation to the new scenario of television fiction, in the context of new creation and distribution platforms.

In fact, *Black Mirror*, although it was initially a serial production that was broadcast according to the traditional model, both out of ambition and due to its integration into the platform system, is now a part of the paradigm of "Quality TV". One clear difference between this “Quality TV” and traditional television, with which it coexists, is the cinematographic vocation of the series that emerged at the end of the 1990s and especially at the beginning of the 21st century. This stage is called the third golden age of television fiction (Nelson, 2007; Ott 2008). Regarding this denomination -which addresses the current complexity of the television phenomenon that is still in force-, there is no academic or critical consensus to chronologically locate its beginnings and delimit this last golden age (Van der Werff, 2013).

IMDB (Internet Movie Database, one the principal websites dedicated to film classifications), still with regard to the first selection criteria (a), on including the parameters of Feature Film, TV Episode and the years of production 2010-2015 as well as the Artificial Intelligence keyword (or even subgenre category) in addition to the main science-fiction one, includes a number of classic and iconic titles in the results. They included the films *Ex Machina*, *Her*, and the episode “Be Right Back” from the series *Black Mirror*. Currently, listing by rating within IMDB (2020) brings up 81 films, and *Her* and *“Be Right Back”* are number 18 and 19 respectively, with *Ex Machina* at number 26. The productions that are ranked between 1-18 are superhero franchises, animated movies or TV shows that are not anthologies. In the positions 18-26 in the rankings, again, the works are mainly either parts of franchises, animation or non-anthology TV shows.

Moreover, the website Filmaffinity.com (2020), if we choose the SF genre and computers/Internet topic on the search engine, also features *Her* and the “Be Right Back” episode of *Black Mirro*r. Under the “top rated” display preference, *Her* is in 10th position and “Be Right Back” is at number 17 out of a total of 50 films. At the moment, *Ex Machina* is not included in this list.

Black Mirror is an anthology series in which all the episodes are stand-alone, sharing nothing but the producers. The plot, cast, writers, setting and even the director changes from episode to episode. As a result of this, each episode approaches technology and its effect on our everyday life from different angles, ranging from social media, drones, surveillance, Virtual Reality and screens to Artificial Intelligence. It approaches the SF genre from a fresh perspective, as it focuses on the dangers of technology and their impact on society, not just presenting an idyllic view of the possible benefits of technology but making the viewer think about their daily use of it as well. Their social scope extends to politics – the first episode of the first season "The National Anthem" saw the prime minister have sex with a pig on live streamed television in order to free a kidnapped princess- to the environment in the episode "Hated in the Nation", as bees created for pollination diverge sharply from their purpose and become killing machines. These episodes also highlight the relationship between society and technology, as well as issuing warnings about what might happen in the near future.

In some episodes, technology such as AI or VR is merely a means to an end in representing a potential issue, such as the emotional connection between humans only being possible in VR settings as in the "Playtest" episode or in "Striking Vipers". *Black Mirror* plays extensively with the idea of consciousness, which is a hot issue in the Artificial Intelligence community, as mentioned in chapter two. In episodes such as "Rachel, Jack and Ashley Too", and "White Christmas", snippets of human consciousness transferred to robots, simulation worlds, or even other people are represented. In the episode "Metalhead", a robot in the form of a "dog" is chasing humans in what seems to be a doomsday scenario. However, these episodes will not form part of this analysis as they do not focus on Artificial Intelligence in terms of a conscious humanoid robot created inorganically by another human being. "Be Right Back" is the only episode that focuses on this kind of conscious AI, "Ash", that merits a personhood status, as it

would typically pass the Turing test as explained in chapter two. As such, it is the only episode I will analyze in depth for this thesis.

Unlike *Black Mirror (*2011), *Her* (2014) and *Ex Machina* (2014) are films and not part of a bigger TV series. *Ex Machina* (2014) by Alex Garland takes a cautionary approach to SF, similarly to *Black Mirror.* It is an original SF film that opens with a tech mogul (Nathan) inviting an employee who won a sham prize draw (Caleb) to his technology compound mansion secluded in the woods. Caleb is told that his purpose in being there is to perform a Turing test on one of the AIs that Nathan has been working on, called Ava. However, as the film progresses we find that the true reason why Caleb is there is for Nathan to test whether Ava can manipulate him using her digitally-acquired knowledge and sexuality. Nathan even discloses to Caleb that Ava's physical looks are based on Caleb's porn searches. As Caleb becomes increasingly attracted to Ava, events take a horrible turn. Hence, the film has a purpose similar to that of the dystopian texts: to warn people and make them think about our society and technology, and what the future might hold for us if we do not change our ways.

Her (2014) is an original SF film by Spike Jonze that features Samantha as the lead AI. Samantha is a voice-activated personal assistant, who lives in a computer and does not have a humanoid body. Her "owner", Theodore, purchases her in an attempt to find company as he goes through a divorce, and she starts out as a personal assistant organizing Theo's emails and meetings. However, it becomes a peculiar companionship, and both desire something more physical. Although Samantha does not have a body, her voice and speech mannerisms are very human-like and authentic. Samantha also has a very philosophical approach to the nature of things, as she is "friends" with the real-life philosopher Alan Watts' fictional AI in the film and shares his ideas about the meaning of life. All of these make *Her* a unique SF film that fulfills the selection criterion (a) of this thesis

Another factor that motivated the three selection criteria was the lack of research concerning recent science fiction and its interaction with AI reality.

There are vast quantities of research on science fiction films and TV shows from a postmodern perspective like *Blade Runner* (1982), (Bruno, 1990; Begley, 2004; Brooker, 2006; Bukatman, 2017; Flisfeder, 2017) *The Matrix Trilogy* (1999-2003) (Zizek, 1999, 2006; Barnett, 2000; Stewart, 2003; Constable, 2006; Kapell & Doty, 2006; Stucky, 2016) *Alien* (1979) (Creed, 1993; Parker, 1998) *The Terminator* (1984) (Sardar, 1992; Rosenfeld, 2010) *E.T.* (1982) (Berger, 1998; Dixon, 2000) and the *Star Wars* franchise (1977-) (Telotte, 2008; Gregory, 2016) or science fiction TV such as *Star Trek* (1966) (Telotte, 2008; Palmeri, 2001) *The Twilight Zone* (1959) (Melbye, 2015) *Battlestar Galactica* (1978) (Palmeri, 2001; Hawk, 2011) and *The X-Files* (1993) (Berger, 1998; Kellner, 1999).

These previous studies focused on popular science fiction TV shows and films that are mostly franchises or blockbusters mainly from a postmodern perspective, from 1970s through early 2000s. However, there is a dearth of research with *Black Mirror, Her* or *Ex Machina* as its subject of study, and even when they are taken as case studies, they are not approached in a way that seeks to explore the interplay between audiovisual representations of human and AI relationships in science fiction film and TV series (Murray, 2013; Redei, 2013; Singh, 2014; Simut, 2015; Bordun, 2016; Jacobson, 2016; Marguiles, 2016; Aibel, 2017; Di Minico, 2017; Flynn, 2017; Henke, 2017; Sculos, 2017; Virginas, 2017; Yee, 2017; Albrecht *et al,* 2018). Note that most of the research that takes the same samples as this thesis is published in or after 2016, when we had started this thesis. As such, when we came up with this research plan for this thesis, most of this literature did not exist.

The aim was to analyze audiovisual productions that have not been explored by many authors for many years, like *Blade Runner* since the 1980s. Furthermore, by exploring these issues through the selected audiovisual productions, we seek to make a contribution to closing the gap in the literature about the relationship between fiction and reality from a postmodern perspective.

With regard to the b) selection criterion, the “Be Right Back” episode, *Ex Machina* and *Her* have an AI as a main character. In *Black Mirror’s* “Be Right Back” episode, a robot companion replaces Ash, the real fiancée of Martha who tragically died in a car crash. The robot replacement looks exactly like Ash, his appearance is identical (although he is metal underneath his skin) and he has learnt the way Ash speaks, the way he acts, his hobbies, ultimately his whole personality, by studying his online presence from his instant messaging apps and social media profiles. However, the robot is not authentically him because it does not have a biological body.

In accordance with the third criterion (c), the AIs in the selected examples of this thesis possess traits of postmodernity, such as pastiche. The AI characters can be classified as pastiches of human beings, and it can also be said that they suffer from schizophrenia in Jameson's terms, as explained in the theoretical chapter. Ava’s design in *Ex Machina* features indistinguishable human skin and a neural network that makes her impossible to tell apart from a real human being, a perfect pastiche. Samantha, the voice activated operating system in *Her,* lacks a body but has a voice that can seem to understand Theodore’s (her owner’s) likes and dislikes and talk to him accordingly, like a perfect girlfriend. The robot Ash is trying to fulfill the role of a romantic partner, but is finally rejected by Martha as he is not “real” enough and “something is missing”. He is designed to be the perfect pastiche of Ash. Thus, the individual subject has disappeared along with his style, and what is left, or in this case, the robot replicant, is the perfect pastiche of Ash that Marta tries to hold on to.

Moreover, the AIs in the samples that we will analyze can be said to be suffering from schizophrenia in Jameson’s terms as we have explained in the Theoretical Framework chapter. They lack historicity, and for them the meaning of the signifier “self” is unaccounted for and empty, since they do not have real memories and any memory they have are not organic. The schizophrenia here is not so much a medical concept which implies that the person is delusional,

paranoid, or hysterical, but which presents the idea of the self as de-centered and coreless.

However, in return, the actual human characters that have a relationship with the AIs in the corpus of the analyses, Marta (*Black Mirror*), Theodore (*Her*), Caleb (*Ex Machina*) also suffer from this type of schizophrenia. The reason for them becoming schizophrenic is different from the historicity aspect of the AIs, as they do have a sense of self and historicity. However, what previously meant being human for them, to be conscious, biological beings who can learn and think, has changed enormously. This also puts the human characters in a position where they are merely beings detached from what the signifier “robot” or “AI” previously meant, as the connection between the two collapses.

6.2 Methodological Model

To address the objectives, according to the theoretical framework, we propose three categories of analysis. The first one relates to the AI creation and its presence in the narratives of the chosen science-fiction audiovisual productions. The second category refers to the postmodern characteristics of AI representation. The third focuses on the connections between fictional AI representations in present-day technological and postmodern society.

We have three corresponding research questions that meet the objectives previously discussed (Objectives):

RQ1. How does contemporary Science Fiction popular cinema and TV series reflect the (hegemonic) cultural and symbolic tradition regarding the creation of AI?

RQ2. How does some recent (2010-2015) fictional audiovisual productions represent AI in the frame of the (hegemonic) cultural and symbolic tradition regarding the creation of AI?

RQ3. What kind of discourse do recent AI fictional audiovisual productions create surrounding the interplay between fiction and reality, together with current postmodern societal and individual fears?

We have developed a qualitative model of analysis, which combines different proven methods (Table 2), each of which is aimed at answering our three research questions.

To answer RQ1, we have carried out a historical review of western beliefs and concepts in order to understand their influence on our current collective imagination about the creation of artificial intelligence. Mainly, we

have focused on the contribution of classic Greek, Roman, and medieval myths, legends, and religious faiths that underpin many of the basic ideas and story lines of the science fiction in both the literary and audiovisual genre. The historical review of the concept and presence of proto-AI allowed us to identify the main categories we apply in the study. These categories were the bases of the thematic analyses of the audiovisual texts (Braun and Clarke, 2006) to understand the narrative roots (literary and filmic) of the AI science fiction audiovisual genre (both as recurrences or reformulations).

To answer RQ2, we have applied a Socio-semiotic and Film analysis (Casetti and di Chio, 1999) to identify correlations between the cultural tradition and the audiovisual sample. Therefore, formal or narrative analysis (mainly plot and actancial model, from structuralism, semiotic-narrative and enunciation analysis) is done, and also a stylistic analysis (codes and filmic techniques, such as mise-en-scene, photography, acting, sound, editing).

To answer RQ3, we have applied a Discourse and Sociosemiotic Analysis (Wodak and Meyer, 2009) in order to link scientific and historical representations and discourses about socially constructed language.

Research questions	Method	Items
1.How does contemporary Science Fiction popular cinema and TV shows reflect (hegemonic) cultural and symbolic tradition regarding the creation of AI?	**THEMATIC ANALYSIS (Braun & Clarke, 2006)**	Themes and myths (narrative roots) Religious faiths Historical review
2. How do some recent (2010-2015) fictional audiovisual productions represent AI in the frame of the (hegemonic) cultural and symbolic tradition regarding the creation of AI?	**SOCIO-SEMIOTIC AND FILM ANALYSIS (Casetti & di Chio, 1999)**	 Narrative codes (themes/plot, actancial model of main characters, including physical and psycho-sociological traits) Audiovisual codes (visual, sound, graphic)
3.What kind of discourse do recent AI fictional audiovisual productions create surrounding the interplay between fiction and reality, together with current postmodern societal and individual fears?	**Discourse and Sociosemiotic Analysis (Wodak and Meyer, 2009)**	*A posteriori* categorization

Table 2: Research methodology (own elaboration)

> Textual description and analysis should not be seen as prior to and independent of social analysis and critique- it should be seen as an open process which can be enhanced through dialogue across disciplines and theories, rather than a coding in the terms of an autonomous analytical framework or grammar (Fairclough, 2003, p.16).

As such, thematic analysis is an important instrument in this research in order to understand the basis for AI, rooted in millennia-old human desires that are reflected in ancient texts. Moreover, it is not a method just for written texts, but for audiovisual *texts* too. Therefore, textual analysis is important to this research in order to analyze what historical texts, philosophers (modern or not) and thinkers have presented on the subject of technology, AI and utopia/dystopia. These topics can be viewed from a multi-disciplinary perspective, from philosophy to film studies, using thematic analysis as a method related to the symbolic representations of motifs in social terms.

The analysis section of our thesis will make use of visual text analysis as a key method for film and television studies. Film studies is "of interest to any theoretical approach to the interpersonal generation of meaning, since film, as text, has conditions for production duration and repetition that are unique to it" (Devereaux and Hillman, 1995, p.8) and as a result it needs careful evaluation in all of its aspects, from narrative to aesthetic.

> The concepts of narrative visual analysis (action, reaction, transactive, non-transactive) can help interrogate a visual text, help to frame questions such as who are playing the active roles of doing and/or looking and who the passive roles of being acted upon and/or being looked at in visual texts with certain kinds of participants, (for example, minorities) (Van Leuwen & Jewitt 2012, p. 12).

As pointed out, the actions and the gestures of the actors and actresses on the screen must be evaluated through a visual analysis in order to make sense of the narrative. The previous deductions from thematic analysis will be used together with visual analysis in order to analyze AI representations in the given audiovisual media. For example, the basis for Ava in *Ex Machina* has been

repeated throughout Greek/Roman Antiquity and in Christianity in the Middle Ages. Textual analysis will help to review the creation aspect in chapter three, as well as reviewing character typologies in SF literature in chapter four. In chapter seven, the textual analysis results from previous chapters will be combined with visual analysis of the film itself, together with aesthetic aspects, thus presenting well-rounded analysis results about how AI is represented in particular audiovisual examples.

The other method we will use in this thesis is Critical Discourse Analysis (CDA). This method is derived from post-structuralist philosopher Foucault's concept of discourse, and its functions are threefold:

> a) meaning-making as an element of the social process,
> b) the language associated with a particular social field or practice
> c) a way of construing aspects of the world associated with a particular social perspective (e.g. neo-liberal discourse of globalization) (Wodak & Meyer, 2009. p.163).

As a result, this thesis will employ critical discourse analysis in order to make sense of post-modernist and post-structuralist discourses of technology, and their relationship with society as exemplified by the three audiovisual examples. Furthermore, I chose CDA because it "has the further advantage of suggesting that discourse analysis is concerned with various semiotic modalities of which language is only one – others are visual images and body language" (Wodak & Meyer, 2009 p. 163). In other words, our aim is to not only analyze the relationship between AI technology and society through audiovisual media and their semiotic aspects, but to also include visual narratives and body language which are definite parts of our analysis. In audiovisual media, these aspects often go hand-in-hand and are inextricable so that it will be a better method to yield more accurate results in the end. Wodak and Meyer further add that:

> CDA focuses not just upon semiosis as such, *but on the relations between semiotic and other social elements*. The nature of this

> relationship varies between institutions and organizations, and according to time and place, and it needs to be established through analysis. This requires CDA to be integrated within frameworks for *transdisciplinary* research…. (emphasis of authors' Wodak and Meyer, 2009, p. 163).

This is what we are trying to demonstrate throughout this thesis. By combining different disciplines, such as classics, literature, science (computer science, biology, psychology), philosophy, sociology, film studies, cultural studies and history, we aim to give the reader a clearer picture of the present (from 2010 onwards) relationship between audiovisual representations of AI and contemporary social issues surrounding it.

We choose CDA because it enables me to incorporate different social approaches to make sense of the AI technology – society relationship, using socially created language and perspective. CDA will help me to incorporate science and history, especially in chapter 8, where we will be looking at how society and SF interact.

Thematic and film analysis, combined with CDA, will equip us with the necessary tools to unlock the meaning behind the audiovisual examples that bridge fictional representations of AI technology and society's perception of AI, a complicated relationship.

Therefore, we will summarize the categories of analysis with a table at the end of each results section.

Narrative roots	Plot	Type of AI	AI Representation (actancial model including physical and psycho-sociological traits)	Formal and stylistic audiovisual characteristics	Interplay between Fictional themes and current postmodern society

Table 3. Table template for each film/TV show analysis (own elaboration)

Lastly, the case study can be considered both as a methodology (Yin, 1994) and as an object of study (Stake, 1995). These approaches can be complementary: methodologically the research has an interpretive character and, as Stake (2005) himself suggests, a set of cases are studied together to investigate a certain phenomenon. According to the first approach, from the model of comprehensive-historical sociology formulated by Weber, the world of social phenomena can be understood. In this thesis, it has focused on the tension between rational interest and desires and imagination about the creation of artificial life. According to the second approach, the sample of three audiovisual cases gives substance to the phenomenon of contemporary narratives about Artificial Intelligence in current postmodern societies.

7. RESULTS: ANALYSIS OF "BE RIGHT BACK" EPISODE OF *BLACK MIRROR, EX MACHINA AND HER*

7.1 Analysis of *Black Mirror's* "Be Right Back" Episode (Brooker, 2013)

Narrative Roots	Pygmalion - Galatea from Greek Mythology, Ash is like a "lover-bot" that can be custom created
Plot	Martha and Ash are a couple. Ash is using social media and his phone endlessly. He dies in a car crash, Martha can't get over her grief so her friend signs her up to an online chat-bot service that imitates Ash. Martha is very happy at first but as she orders AI Ash's version that has a physical body, she grows distant and realizes that he is only a hyperreal version of Ash. She puts him away in her attic and confines him to loneliness.
Type of AI	Ash's AI version is first a chat-bot. The way he communicates with Martha is based on the real Ash's social media interactions and text messages before he passed away. His AI version is a customizable body that can even have sexual intimacy.
AI Representation (actancial model including physical and psycho-sociological traits)	Good-natured. Designed as a companion robot to help customers get over their grief of a loved one. Physically the same as Ash, but made up of separate parts and joined together in a bathtub.
Formal and stylistic audiovisual characteristics	Juxtaposed shots that show dichotomies, very dark shots that Refer to Frankenstein, editing. Martha as a Pygmalion figure that cannot process her grief.
Interplay between fictional themes and current postmodern society	Nod to Frankenstein and the way the artificial body is created. Us vs. Them dichotomy, loneliness, grief industry as a part of the capitalist society.

Table 4. Analysis chart for *'Be Right Back'* - (Brooker, 2013). Own elaboration.

As mentioned earlier in the introduction and selection criteria chapters, *Black Mirror* is an anthology TV show that first started out on the UK's Channel 4 in 2011, and was later picked up by the online streaming platform Netflix. The episodes are not connected in terms of plot, cast or characters: they are all stand-alone episodes. However, they share the same production company and its creator, Charlie Brooker, who is the writer of most of the episodes. He is also the showrunner behind the main theme of the series: the disturbing effects of technology on human life. As of April 2020, it consists of 5 seasons and 22 episodes, with run times between 41-89 minutes. The production companies are Zeppotron (for episodes aired between 2011-2013) and House of Tomorrow (2014-present). It is distributed by Endemol Shine UK (IMDB.com, 2020).

The episode of *Black Mirror* that will be analyzed in depth is "Be Right Back", which debuted on 11 February 2013 as the first episode of the second season. It is written and produced by Charlie Brooker and directed by Owen Harris. It has a runtime of 44 minutes.

The story follows Ash and Martha, a couple living in the British countryside, and Martha's descent into despair caused by Ash's death in a car crash. After Ash's death, one of Martha's friends signs her up to a software that uses Ash's online presence; all his tweets, status updates, photos, videos, chats, and e-mails, are synthesized in an AI that not only bases itself on Ash's past reactions to situations, but asks Martha compulsively "if he sounds like him", and learns how "to be more like Ash" from her behavior. As such, the digitalized Ash is not simply a copy of his consciousness. He learns from Martha's reactions, how she responds to what he says and he is constantly improving himself, which is the only AI of this type throughout the whole series. Ash's online presence merely serves as a base on which he sets his mannerisms. The rest is bionic and learnt digitally. As a result, it is not an authentic copy of his consciousness, but just an awkward robot with Ash's physical and personal traits that at first sight resembles him. However, the more time Martha spends with the robot, the more

unbearable it becomes for her, and she ends up isolating him almost completely from her life by locking him in the attic of her house.

I will be analyzing this episode under the aforementioned three categories of analysis'. The first, regarding the AI creation and its presence, will focus on the creation of AI Ash and his oral presence and, later, corporeal manifestation. The second category, regarding the postmodernist characteristics, will enable us to identify those traits in the AI creation constituting his real self. Here, the anxieties and cinematic meanings that can be deduced from the representation of the AI body on the screen will be explained through dichotomies such as the natural vs. unnatural and familiar vs. uncanny. Psychoanalysis and the Freudian/Lacanian approach will be occasionally referred to in order to explain the meaning of the representation of the AI body, and its relationship with Martha as a leading player. Finally, the third area of analysis, that deals with connections between fictional AI representations and our current technological and postmodern society, will focus on how a "grief industry" is constructed in the episode, which perfectly exemplifies this combination. It shows how such corporations seek to profit from grieving people. The whole purpose of robot Ash is for Martha to deal with real Ash's loss, but as we learn in the end, even this extravagant way of dealing with someone's loss is not enough if one is not prepared to let go of the situation.

The first category of analysis is the creation story of the AI Ash. Ash's death is where the story actually begins in terms of the AI representation, so I must begin with this. In the beginning of the episode, the viewer is bombarded with incidents of the real Ash's addiction to his mobile phone and how Martha is fed up with it, although she warns Ash, quite playfully rather than aggressively, in order to not cause a fight. The last scene in which we see Ash alive is suggestive of his fate.

On the morning of Ash's death, Martha is having breakfast and Ash is getting ready to head out to run errands with the van. The window of the kitchen is split into two parts, one side showing us Martha going about her day having breakfast, not knowing that she will not see the "real" Ash ever again. On the other side of the window, we see Ash pulling out of the driveway, never to be seen as the real person again.

Figure 2. Last shot of Martha and real Ash in the same frame before he dies (Brooker, 2013).

The cinematography of dividing this shot into two "different sides" of the window is very effective here, as it juxtaposes life and death, momentarily separated from each other. The fact that the camera captures the reflection of the window can also be read as another replication of reality, and foreshadows the arrival of robot Ash, who is himself a replica of the real Ash. Although we are not explicitly shown, it can be inferred from the previous scenes that the traffic accident in which Ash died was caused by his social media addiction, he was

probably distracted while driving as he was looking at his phone and made a fatal mistake.

We see Martha extremely worried. She phones Ash multiple times but her calls go straight to voicemail, which troubles her since he and his phone are inseparable. She knows he would never go so long without checking it and calling her back if something wasn't seriously wrong. When the police arrive at the big country house that once belonged to Ash's family, to inform Martha of his death, she slams the door in their faces. This scene is important as it signifies to the audience that she is not ready to accept the reality of her lover and boyfriend of a decade being dead, and the ensuing grief that comes with that acceptance. Her inability to face reality and death is what initially leads her to emotional dependence on the replica of Ash.

At Ash's funeral, Martha's friend Sara, who it is revealed has also lost loved ones, says to Martha: "it is not real, is it?.... [when she lost her relatives] people's voices weren't real, they didn't look real…." Her questions meet with Martha's disgust. However, this conversation is important since these are the exact questions Martha will ask herself later on in the episode about the robot Ash: whether he is real, whether his voice is real, whether he looks real. The real vs. the replica, the simulacrum, and the symbolic is a very strong theme throughout the episode.

Although Martha is clearly becoming stressed by what is practically a monologue by Sara, Sara ignores her eye rolls and shrugs, and proceeds to describe Ash as a "heavy user" which would make him a perfect candidate to be replaced by what first starts out as an online chat bot. All his mannerisms, the way he speaks, his likes and dislikes as well as his own sense of humor are well preserved by the data cloud through the social media he was heavily using.

Note the usage of the term “heavy user”, a term usually reserved for people who have substance abuse issues such as drug or alcohol problems, which suggests to the audience that Ash’s addiction to screens and social media was very considerable. After Sara’s description of the new software to help people grieving over the loss of a loved one, Martha cannot take it anymore and she screams in front of all the funeral guests for Sara to shut up. Despite Martha’s refusal, when Sara first suggested to her to try this new technology, Sara signs her up for it anyway. One night, as Martha is scrolling through her e-mails, which include an Amazon-like vendor spamming her with “How To Deal With Grief”-type self-help books, possibly having become aware of her situation from Internet cookies, she receives an e-mail from Ash, from his authentic e-mail address. It just reads, “Hey, it’s me”. She hesitantly replies to his e-mail, mesmerized by how much he “sounds like” the original Ash. The following dialogue takes place:

> Ash: “almost creepy isn’t it, when I say creepy I mean totally batshit crazy that I can even talk to you, I mean I don’t even have a mouth!!”
> Marta: “that’s just the sort of thing he would say.”
> Ash: “well that’s why I said it.”

Convinced that this new chat-bot is the best thing to replace the gaping hole in her heart that Ash’s death has left behind, Martha accepts it and starts compulsively talking with Ash’s digital copy on her phone. She even sits on a cliff with chat-bot Ash on her phone, having a picnic all by herself, in the company of the chat-bot. We can see her being isolated, as there are absolutely no humans around. The only living things around her are cows. This might have been a normal phase of grief, being isolated and alone, but since she has chat-bot Ash to help her replace the real Ash, it comes across as rather uncanny. He resembles the real Ash, but it is not really him. He is both familiar and unfamiliar (Badley, 1995). She really believes that she is in his company, opening her camera to show him the view and the wind and everything that he would corporally experience if he were really there. Pregnant, alone and scared, she

desperately clings to her phone as her last resort. Her pregnancy also represents a symbolic element, as it denotes the gestation of a new and biologically human life that connotes the continuation of Ash's life.

Figure 3. Martha having a picnic alone with AI Ash in her phone (Brooker, 2013).

Martha's fear of losing Ash again, albeit the digital version, catches up with her sooner rather than later. She ends up dropping her phone, which temporarily breaks, meaning she cannot talk to Ash. She becomes absolutely distraught, crying over and over again "I am so sorry I dropped you". For her, the denial has taken over so much that the digital Ash is no different from the real Ash. She even believes that he could be destroyed if the phone is broken, despite the fact that the chat-bot is a software, and not the device in itself. She is clearly so consumed by the fear of losing him for the second time that she seems on the verge of a nervous breakdown, even though she could just get her phone repaired, whereas there is no real reversal of death no matter how hard she is trying to replace it in the episode.

On another note, it could be said that Ash's obsession with and addiction to his phone in the beginning of the episode has now extended to Martha. She is now seen holding her phone in her hand at all times whatever the circumstances, and is almost losing her mind over the sheer thought of having broken it. The addiction has shifted from the one character to the other in order to make the audience think that no matter what the reason is, be it social media in Ash's case, or a digital replica of a loved one that has passed away in Martha's case, mobile phones and screens are becoming harder and harder to evade and increasingly intrinsic to everyone around us. Real and hyperreal are consequently intertwined (Baudrillard, 1975).

After she goes home and her phone starts working again, Ash consoles Martha, telling her to not be scared, and that "there is another level to it, but I won't lie, it is not cheap". He is talking about placing himself, the chat-bot digital Ash into a body, albeit an artificial one. The way that he mentions "It is not cheap" again highlights the consumerism and "grief industry" issue in this episode. I will return to this later.

Therefore, through these incidents, the episode's emphasis on Martha's desperation and absolute reluctance to accept and move on from Ash's death, provides the basis for the first reason why an AI Ash is "born". Ash in this episode has three types of presence. The first is the real Ash, his authentic self with his authentic consciousness. Later, after the real Ash is dead, first we have the chat-bot Ash who is based in Martha's mobile phone, an algorithm that is based on the real Ash's online presence. After witnessing Martha's hysteria over losing even the chat-bot version of Ash, he suggests that she should order an expensive superior form of him, the AI version of Ash with a customizable body that looks exactly how the real Ash did before he passed away. The three corporalities of Ash represent the longing for the same, initial, real Ash. However,

the “reflections” of Ash, the Symbolic or the Simulacra, is not enough to replace the original.

Martha is holding on desperately to the “revived” version of Ash, which is initially only a chat-bot and does not even possess a body. His existence, even in the form of a chat-bot in a mobile phone which can “speak” like the real Ash did is enough for Martha to replace what the real Ash symbolized for her. This is similar to the reason why Victor Frankenstein created Frankenstein the monster according to David Collings (1995, p. 245), who carried out an analysis of *Frankenstein* from a Lacanian psychoanalytic perspective.

Although Martha does not fit the “mad scientist” archetype as neatly as Nathan did in *Ex Machina*, she still is the primary source of human contact for AI Ash. She does not fit it perfectly because she is not really the creator, she is simply the “demand” element in a supply-demand financial relationship in the “grief industry” that I will discuss in greater detail later on in this analysis. She does not literally create AI Ash, but, by ordering Ash’s AI/chat-bot version through a company, she becomes its owner. In addition, the similarities between Victor Frankenstein and Martha are twofold. The first is the “imaginary vs. symbolic” and “public vs. private” dichotomies that are present in both the BM episode and Frankenstein. The second is the manufacture, or the creation of AI-Ash. According to Collings,

> Within Frankenstein the world is divided between the public realm and the private, almost delusional relation between Victor and the monster: in Lacanian terms, between the Symbolic and Imaginary orders… On the other hand, there is the curious solitude of Victor and the monster, neither of which can ever belong to a family; their endless fascination with each other; and their utter incapacity to communicate their situation with anyone else… Victor's solitude is so profound that his obsession with the monster and paranoid fear of him would amount to madness were it not that another person, Walton, encounters the monster in the novel's final pages…. As a young scholar, Victor studies "neither the structure of languages, nor the code of governments, nor the politics of various states," all subjects associated with the Symbolic order, but rather the "physical secrets of the world" (43). Moreover, within the physical

> sciences, Victor pursues an outmoded, erroneous, semimagical science in defiance of his father's prohibition, as if replaying the Oedipus complex in his intellectual pursuits. In an unofficial, magical nature Victor hopes to recover the mother that has been denied or forgotten in much the same way as the alchemy of Agrippa, Paracelsus, and Albertus Magnus has been dismissed by contemporary science (Collings, 1995, pp. 245-48).

The first point relevant to this thesis from Collings' study draws parallels between Martha's and Victor's delusions. Like Victor, as exemplified above with figure 3, Martha really believes that a chat-bot (the Symbolic) in her phone is the real Ash (the Imaginary). In the Lacanian approach, the self is a part of the Imaginary and the Symbolic is within the "other" (Bristow, 2018). They also have a very curious solitary relationship. Even when they go out together to the hills, there is nobody around but cows. Both AI Ash and Martha, like Victor and Frankenstein, are unable to communicate their situation to other people.

For example, later on when AI Ash acquires a body, and Martha's sister drops in unannounced to check in on her, Martha is overly worried that she will see AI Ash, and hides him in a room. However, her sister sees AI Ash's things in the bathroom and thinks she is seeing another man. Of course, she doesn't imagine she has bought a robot replica of Ash and instead compliments Martha on moving on. Martha is horrified when she first hears this, but then plays along with it, rather than disclosing the fact that she "moved on" to an AI version of Ash, which is not really moving on but barely replacing Ash with a simulacrum. This signifies that she is ashamed of still not being able to get over him, and she is obviously too scared to even let those closest to her know about her situation. On another note, like Walton in Frankenstein, the only other person that encounters AI Ash is also a character at the end of the text, their daughter (with the real Ash). She tries to keep AI Ash as private as possible, hence the public vs private dichotomy that was also prevalent in *Frankenstein*.

Like Victor, Martha puts AI Ash in her Symbolic order, replacing the real Ash. Although, in this text, the possibility of "magic" and "alchemy" are replaced

by science, there is still the attempt to “renew life” because of her grief, loneliness, and desperation to let go and overcome death. Grief was also primarily the main motivator in Victor’s case to replicate his mother. As a result, both Victor and Martha are operating in a way that swapped the Symbolic and the Imaginary, whose purpose was to protect and preserve the Ego (Collings, 1995). In other words, both characters diverted to creating artificial life that would replace someone loved in their life in order to reduce their immense pain and suffering after their deaths.

Second aspect of this episode that is similar to *Frankenstein* is the actual “manufacturing” of AI Ash’s body. After chat-bot Ash convinces Martha to “upgrade” him to his version that features a humanlike body, we see the body being delivered in the very next scene, signifying how desperate Martha was to get her hands on an even “more real” version of her dead boyfriend. The mechanical robot body covered in artificial skin is deconstructed in a huge box, and Martha has to put the limbs together. She opens the box and is in awe of how human-like the flesh that covers the mechanical parts is. Similar to how Frankenstein constructed dead bodies that were once alive, AI Ash has a Symbolic body of the Imaginary Ash who once lived. AI Ash’s body and consciousness are also both based on death, like the monster of Dr. Frankenstein. While Ash’s voice, still on the phone, is instructing her to get the bath ready for the body to soak, Martha is almost in a daze, touching and feeling every single limb in the box for a few minutes, ignoring him completely. She is fascinated by the fact that “recreating life” is possible, that it is so lifelike, although it is not and will never be like the real thing.

Moreover, although Martha is the one who assembles AI-Ash’s limbs and “brings him to life” by soaking him in a bathtub, she is not really the creator as Dr. Victor Frankenstein was of Frankenstein. As I have mentioned in chapter three, Victor was a “promethean” figure. He had scientific experimental knowledge that

helped him to put his monster together, and he did it himself just for his own purposes in order to get over his grief. Martha, on the other hand, has ordered this product that is sold for profit in a market that seeks to capitalize on her grief. A capitalist company essentially creates the production process for AI-bodies, the code behind them, the material science of the artificial skin and the technology of the mechanical parts that make it up. Martha's experience of bringing AI-Ash back to life is, therefore, merely a setting-up process, like when we buy a new iPhone and we reboot it to our taste in language selection, background image, password etc. It is not a full "godlike" moment that presents a God complex, like the case of Nathan in *Ex Machina.*

Let me refer back to the AIs discussed in earlier narrative topics in the theoretical chapters. To make a thematic analysis, in terms of Greek mythology, out of all the examples I have presented, perhaps the closest to AI-Ash is Galatea. However, AI-Ash and Galatea are not identical in their creation methods or aims. They are similar because they are both created as "lover robots". However, they are different because Pygmalion was in love with the inanimate version of Galatea which later became real in the flesh. Martha, on the other hand, is in love with the real Ash before his death, and robot Ash is a replacement for the real one but, nevertheless, a companion robot aimed at easing her grief, thus making it more similar to Frankenstein.

When analyzing the scene which resembles a revival process, the audiovisual characteristics should be noted, such as the intentional white, pale lightening atmosphere (see figure 4). The purpose here is to signify the medical or laboratory setting, almost as if a scientific experiment is about to take place, which is not so far from the truth. Like Frankenstein, the limbs are ready to be put together and "brought back to life", although in a mechanical body with an AI based on Ash's social media posts. Martha's blue painted nails juxtapose well with the ghostly white tone of the artificial skin, another representation of human (self) versus the other (them), or the Imaginary and the Symbolic.

Figure 4. AI Ash's body arrives (Brooker, 2013).

Ash instructs Martha to fill the bathtub with warm water, put the limbs together, pour the electrolyte granules in it, and not to switch the light in the bathroom light on and "let it brew". As he is being transferred from mobile phone chat-bot to an AI with a full mechanical body, he hangs the phone up. Martha is left alone, with a look of terror on her face, with wind eerily creeping through her window that opens to the darkness outside. She shuts it quietly, and takes slow, heavy steps that creak in a manner reminiscent of horror films.

The shot in which we see the bathtub almost completely dark, is possibly the darkest scene in terms of illumination in the whole episode, with no sound whatsoever other than the bubbling of the liquid that is in there with the assembled robot body. This choice of sound and music use makes the viewer focus on the only sound available, which is AI Ash's robot body bubbling and cooking up like a test liquid in an alchemist's lab diegetically. This is definitely another nod to Frankenstein and the doctor's efforts at scientific experiments in order to create a humanoid body from dead people's remains. However, Martha's

character does not fulfill this archetype since she is not the creative mastermind behind the capitalist process of AI production for grieving people, as I explained above. Another diegetic sound that occurred in this episode was during the ultrasound, when Martha heard the heartbeat of the baby, which signaled life and corporality, as well as the Bee Gees sing-along at the beginning of the episode that also highlighted life and having fun with a loved one, as this was before Ash has passed. Otherwise, the music and throughout are mainly extradiegetic.

Figure 5. AI Ash's body soaking in the bath and bubbling (Brooker, 2013).

The next shot, where Martha is waiting anxiously in her kitchen for AI Ash's body to be ready, is as monstrous as possible: with the left side representing light and life, and with the right side representing darkness and death. It can also be said that the left side represents humanity, and the right side represents monsters and aliens, all those things that have been "artificial" and uncanny since Greek mythology. This again highlights the duality of self vs. imaginary and the self vs. the other. This cinematographic decision of the dual frame composition is a stylistic continuity from Figure 3, where Martha was again

on the left side, moving forward with her life, with Ash on the right side on his way to death. Life versus death, human versus monster, known versus unknown, good versus bad are all represented in this way. Moreover, Martha is aghast when AI-Ash finally steps out of the bath and comes out in front of her fully naked. She cannot believe that he is there in front of her in the (almost real) flesh. This is a nod to creation stories, especially biblical ones where the "nakedness" of Adam and Eve were especially highlighted (Laden, 1998; Velleman, 2001; Anderson 2002).

Figure 6. Martha waiting for the AI Ash's body to 'come alive' (Brooker, 2013).

In addition, this text must be approached from another perspective, namely Baudrillard's ideas of the real that helps to construct simulacra and pastiches. As mentioned above, one of the main dichotomies in this episode of *Black Mirror* is the real vs. unreal, or the Imaginary and the Symbolic. AI Ash is a simulacrum, a replica, a pastiche of what was once real, Ash's real body. His consciousness is based on the real Ash's online trace, conversations and actions. He does not exist outside the realm of the real Ash, both metaphysically and physically. Baudrillard explains this perfectly: "A simulated presence escapes

the possibility of counterfeit and the possibility of reproducing an original, because the original no longer exists" (2012, p. 97).

This separation becomes even more visible once the chat-bot Ash acquires a body and increasingly irritates Martha, as whatever he does he is not "authentic" enough for Martha. Without doubt, he can never be as real or authentic as the real version of him; he can only operate on the Symbolic level of what once was real. Take, for example the sequence in which AI Ash asks her repeatedly "isn't that the sort of thing he would say?", trying to learn from his mistakes and improve his algorithm to sound more authentic. She yells back, "You're not enough of him, you're nothing!... you're just a few ripples of you, there's no history to you, you're just a performance of the stuff that he performed without thinking and it's not enough." This outburst is quite important as it follows her process of finally realizing the real idea of what AI Ash stands for and her motivations for getting him in the first place, and it obviously is causing her pain. A close analysis of this sentence is in order.

"You're just a few ripples of you" refers to the idea that AIs are not born and raised organically, and neither do they gather memories/actions as they live life like biological humans do. They learn the information from whoever/whatever is feeding it to them, which makes them inauthentic. As their memories/actions are inauthentic, their personality and mannerisms are thereby, also rendered fake, which is precisely what irritates Martha so intensely about AI Ash's responses. This idea is reminiscent of Baudrillard's writings about simulacrum and simulacra as he observes "the unreal is no longer that of dream or of fantasy or a beyond or a within, it is that of hallucinatory resemblance of the real with itself" (1994, p. 146). The unreal was the dream or fantasy for Martha of bringing the dead Ash back. AI Ash is the hallucinatory resemblance to the real. However, it was not a successful union as the resemblance to the real, AI Ash, was unbearable for Martha emotionally and psychologically. Therefore, what was

once real also became an absolute simulation, making AI Ash a hyperreal body (Baudrillard, 2012).

"There is no history to you" is also an idea frequently expressed about AIs in SF films. Take the original *Blade Runner* (1982), where Deckard is sent out to terminate replicants, who are AIs almost indistinguishable from humans. Rachel, a replicant who thinks she is a real human instead of an AI, offers a photograph of herself and her mother (of which the audience does not know the authenticity) as proof that she was born to a human mother, that she has real memory, real history like a real human being in order not to be terminated by Deckard. A personal history is seen as proof of being human as opposed to machines with no history or memories.

"You're just a performance of the stuff he performed without thinking and it's not enough" is a cry that Martha has come to the realization that AIs learn mechanically instead of from personal experience, and reenact instead of act. They do not react to any given situation as they do because they are their own person, ie. their own independent consciousness. They have consciousness as a result of biological processes, but because they are programmed and based on others, in this case, Ash's social media memories and behavior. Although it resembles the dead person's consciousness, it does not organically and spontaneously generate the responses. It is a reflection of consciousness merely based on online expressions of the self (from social media accounts), turned into a product specifically designed to console Martha after losing Ash. In Fredrick Jameson's terms, this would be a perfect pastiche of human behavior. He writes of pastiche as "a bravura imitation so exact as to include the well-nigh undetectable reproduction of stylistic authenticity itself, of a thoroughgoing commitment of the authorial subject to the phenomenological preconditions of the stylistic practices in question" (Jameson, 1991, p. 133). AI Ash imitates the authorial subject, the real Ash, and his style through his mannerisms and ways of speaking online. As an artificial AI body, a replica of what was once real, AI Ash

represents anxieties about the self vs. the other.

Now, as we have presented our first two key points of analysis, we will now deal with the third category. Albeit a secondary facet of the story, it is another aspect of the narrative that merits close attention i.e. the presentation and invention of a “grieving industry”, part of our post-industrial society that tries to capitalize even on people who have lost a loved one, one of the saddest and most emotional chapters of an individual’s life.

Obviously, chat-bot and AI Ash are products, marketed at grieving people. Although it starts out as a chat-bot, as Martha and AI Ash’s instant-messaging connection progresses, Ash “feels” how deeply Martha is attached to him. This is particularly evident in the scene where she drops her phone and has a nervous breakdown thinking that she broke the chat-bot Ash. As he is a product that is sold for a price, there is a corporation behind AI Ash’s software, development and learning systems. Much like in our real world’s Instagram, Facebook, and many other online platforms that have access to and illegally use our data, he somehow seems to pick up on her attachment to him and suggests to her to “upgrade him to another level (Rawson, 2012; Nguyen, 2019; Bernal, 2019).

Here, it can be argued that AI Ash’s software is programmed in such a way by the corporation in order to detect Martha’s attachment and whether or not she would be willing to take the next step, which is to order an AI body covered in realistic flesh that would look like Ash’s real body. This body can even manipulate itself to make tattoos, moles, birthmarks or scars in order to appear more authentic. As he proposes this option to Martha, he adds, “I’m not going to lie, it's not going to be cheap.” This is proof that the chat-bot version of the dead person is wired in such a way that it can convince the customer, Martha, to upgrade the product, which is very expensive. However, after the body arrives, things start to go downhill, because perhaps without a body, the chat-bot exceeded the expectations of imitation, but, with a visible body, it is much harder to mimic and replicate mannerisms, movement and other aspects of one’s

corporal being, let alone just speech. And it couldn't, such as not closing its eyes when it went to sleep. It just didn't cut it, and wasn't real enough, as Martha exclaimed later on in the episode.

Another scene in which the audience sees the grieving industry's modus operandi quite clearly is just before Martha gets the first e-mail from the chat-bot Ash. As she is scrolling through her inbox, she comes across an e-mail painfully similar to what Amazon offers people after a few traces of online searches, based on cookies; she scrunches her face up in disgust and irritation and immediately deletes the e-mail.

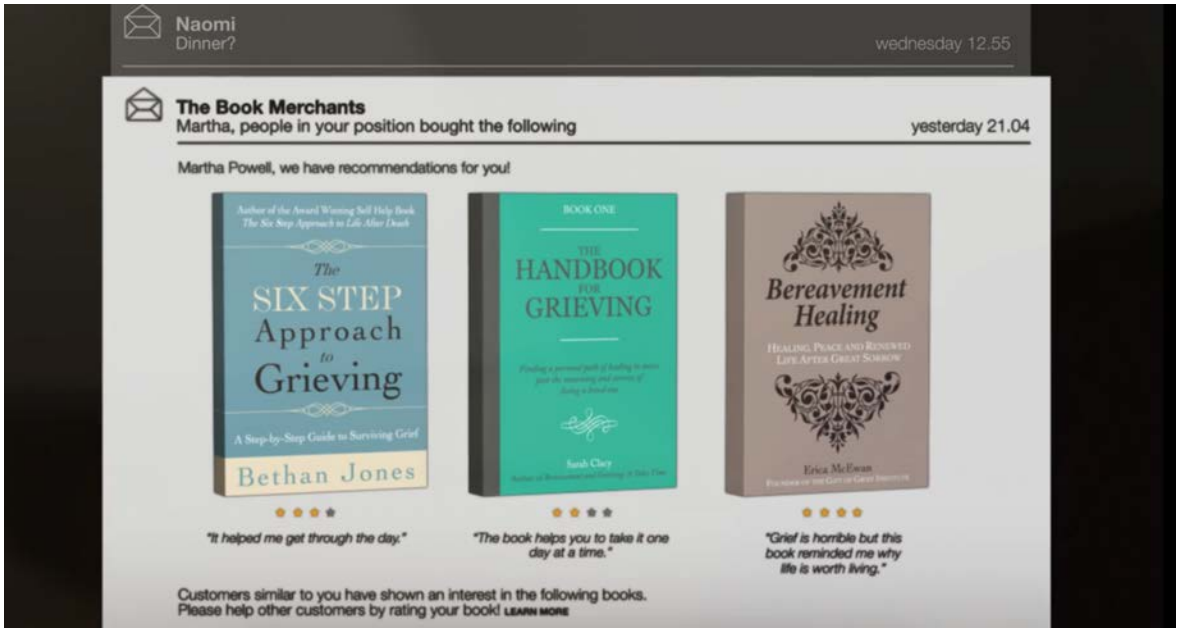

Figure 7. Some books suggested to Martha by 'The Book Merchants' (Brooker, 2013).

However, it is far more unsettling than just a suggestion. The subject of the email reads "Martha, people in your position bought the following", which means that the corporations are aware of her position, whether it is through her search history or by recording conversations that Martha was having with other people. Her situation is known to marketers and corporations that would like to cash in on her grief by selling her these self-help books. Note that the corporation

is called “The Book Merchants”, suspiciously similar to how Amazon first started out years ago. She is just one of the “people in your position”, a general reference to the many people who are grieving, who should buy these books to endure this difficult part of their lives.

Drawing upon Baudrillard’s theories on the post-industrial society, and Jameson’s ideas about post-capitalist societies, Bruno (1990) argues that “the industrial machine was one of production, the post-industrial machine, one of reproduction. A major shift occurs: the alienation of the subject is replaced by the fragmentation of the subject, its dispersal in representation. The ‘integrity’ of the subject is more deeply put into question” (Bruno, 1990, p.189). As a result, Ash’s real personality has become a commodity, a product that has reproduced him quite well, but not perfectly, as this fragmentation of his real consciousness is what causes trouble to Martha. Let there be no mistake, AI Ash is a person according to the guidelines I discussed in “AI: Key concepts chapter”. However, it is fragmented and a reproduction, a mere simulacrum of what Ash used to be in his own, biological, flesh and bones. On the other hand, Martha is used as a part of the post-industrial machine where she is grouped together with all the other grieving people on the internet, and receives a marketing email, not to relieve her of her pain and suffering, but to make a profit from her.

The aim of generating profit from even this most painful phase of someone’s life reflects very well our current *zeitgeist* of post-industrial society that we live in. Thus, AI Ash encapsulates the post-industrial society and the postmodern human condition both from a personhood standpoint - it is a fragment of what real Ash used to be, a hyperreal simulacrum - and also a commodity to lure grieving Martha into the industry.

To sum up, “Be Right Back” is an episode that explores the dichotomies of the self vs. the other, familiar vs. uncanny and imaginary vs. symbolic. The AI body operates in such a way that the main objective is to fill a void in Martha’s

soul left by grief, where she replaces the real Ash (Imaginary) with the AI Ash (Symbolic). Her motivations in getting an AI Ash were compared with Victor's creation of Frankenstein. In doing so, although on the surface she wanted to protect herself (her Ego), she has succumbed to the post-industrial economic order, to the belief that there is a product out there for anyone and anything, even if it is to replace a dead person. However, her character development ends in the realization that it is not possible to replace the real with a simulacrum or a pastiche, especially if we are talking about a deceased person, and she puts AI Ash away forever in the attic of her house.

Although AI-Ash could be classified as a person according to the guidelines I have presented in the second chapter of this thesis, "Be Right Back" presents him as a commodity, something that could be simply locked away or hidden if one is unhappy with it. AI-Ash is stripped of his abilities and freedoms that I have previously mentioned. However, he is neither killed nor deactivated because Martha, the owner, still feels some emotional connection to him as the hyperreal version of the original Ash she once loved so dearly. Therefore, the episode encapsulates our possibly impending dilemma with human-AI relationships with questions of ethics. Do we, as humans get to be the "boss" of AI? What if they surpass the "Singularity" and become our masters?

As a result, the episode serves as a typical dystopian SF text: a warning to society that if we are not careful about "the grief industry" or replacing someone with an AI version of them, we may well end up like Martha, an isolated and lonely single mother with an AI version of her dead ex-boyfriend locked up in the attic.

7.2 Analysis of *Ex Machina* (Alex Garland 2014)

Narrative Roots	Ava is Pandora from Greek Mythology, Eve from Bible/Quran/Torah. Biblical names also describe the characters of Nathan and Caleb.
Plot	An employee of a tech company, Caleb wins a prize to visit the company's founder, Nathan's house and lab to perform a Turing test on an AI. Ava, the AI, manipulates Caleb for her own benefit and escapes out to the real world by killing Nathan and locking Caleb in the compound.
Type of AI	Ava is an AI in a female form whose consciousness is based on illegally harvested data of millions of users. Her body is specifically designed by Nathan for Caleb 's beauty standards.
AI Representation (actancial model including physical and psycho-sociological traits)	From a stereotypical perspective she is evil, as she is a female character trying to achieve power. She manipulates Caleb in order to get out of her confinement, using her intelligence and her looks. She kills her creator, Nathan and locks Caleb, who thought she would run away with him, but she escapes out to the real world alone, disguising herself as a real woman. She wants to break free from the bionic and become organic. Physically, she looks like a real female when she is dressed, however she has body cavities and visible wires when she is naked.
Formal and stylistic audiovisual characteristics	Juxtaposed shots that show dichotomies such as the inside of the building that is the "womb" and the outside "nature" as the escape to reality. The use of chromatics and specifically the abundance of red to signify danger and death. Simplistic visual effects to keep the film "real" and believable. Nathan as the “mad scientist” archetype with a God complex.
Interplay between fictional themes and current postmodern society	Us vs. them dichotomy, the Uncanny and the Monstrous feminine body all embody Ava’s character. In our postmodern society, many sex robots or female-voiced Operating Systems work in a similar way to how Ava was initially designed, before she gained agency and became dangerous.

Table 5. Analysis chart for *Ex Machina* (Garland, 2014). Own elaboration.

The second case study of this thesis is *Ex Machina* (2014), directed by Alex Garland. The film, which deals with the interaction between AI and humans through a Turing test, managed to win the Best Visual Effects Academy Award of 2016, despite its competitors of the same year such as *Star Wars: The Force Awakens* directed by JJ Abrams and *Mad Max: Fury Road* directed by George Miller (both 2015) which had double the budget for visual effects (Harbin, 2016).

The film follows Caleb, an employee at a big tech company similar to Facebook, as he wins a company-wide lottery to get exclusive access and a meet-and-greet with the company's owner and head innovator, Nathan. Caleb thinks that his main task to carry out at Nathan's mansion hidden in the woods is a Turing test on the AIs Nathan has been building. Ava, the latest model AI Nathan has been building, is the AI that Caleb starts to apply the Turing test to. Caleb becomes increasingly more attracted to Ava during their sessions. He soon finds out from Nathan that he specifically designed Ava to look like Caleb's porn searches, and that his hidden agenda is to get Ava to emotionally manipulate him, which would mean that she really has a perfect AI. However, things do not go according to plan and take a turn for the worse as Ava is successful with her attempts to manipulate Caleb. She stabs Nathan, kills him, traps Caleb in one of the observation rooms and escapes into the city.

It also meets the selection criteria, as it is an original SF production released between 2010-2015, features an AI as one of the main characters, and this AI possesses traits of postmodernity. Not only does the film exhibit typical SF traits such as making the audience think about the future, and include typical SF genre topics like AI and technology, it also characterizes the SF tropes of the "mad scientist" archetype and many more as I will illustrate in this section.

In terms of cinematography, all the scenes were shot in live-action, meaning that all the special effects were added in post-production. The visual

effects supervisor of the film, Andrew Whitehurst, revealed that no tracking markers, no green screen and no special effects were added on during the filming (Bishop, 2015). Seemingly simplistic, and with a low total budget of 15 million US dollars, the film was able to generate 36.9 million US dollars at the box office (Gerber, 2015) and at the same time, winning an Oscar which solidified its success.

The most obvious theme of the film is AI versus human (or us vs. them, or self vs. the other), like the whole corpus, which again links to the selection criteria for AI characters in the film. However, it also questions the dualities in different ways, such as religion (lots of theological references throughout the movie, creator vs. creation, god vs. man) and human nature (good vs. bad, male vs. female, female as monstrous and dangerous).

Another surprising aspect of the movie is that one of the main characters, Caleb, who is assigned to test Ava's consciousness, is the same actor who plays Ash in the "Be Right Back" episode of *Black Mirror,* Domhnall Gleeson. Seeing the same actor in an AI role in *Black Mirror,* and contrasting that role with a person testing the AI in this film has been interesting. I conducted an online search to see whether the director or producers made the casting choice deliberately, but I wasn't able to find any confirmation. It would have been an interesting casting choice to cast the same actor as the AI in one film, and on the other side of the spectrum, one who manages and tests the AI in the other film. It would certainly have been interesting to see the same person act the two different roles on the screen.

In this chapter, we will focus our analysis on three main domains. The first is the creation of AI with references to Greek mythology and the religious references in *Ex Machina*, substantiated in chapter two. The second category will refer to the postmodern characteristics and will allow us to identify the self versus the other in terms of AI creation. The third category of analysis will deal with connections between fictional AI representations and our current technological

and postmodern society, a post-capitalist society. Barbara Creed's ideas about *The Monstrous Feminine* (1993) to *Ex Machina* and more specifically, its protagonist Ava will be important to this analysis. *The Monstrous Feminine* discusses horror and SF film genres from a feminist perspective that takes a psychoanalytic and Freudian approach in order to explain how the female "monster", or the "Other" is constructed under postmodernity. The fourth will be concerned with the AI as a postmodern subject.

In relation to the first category of analysis, the creation of AI and his/her presentation, in *Ex Machina* we found a clear example of the narrative continuity of the myths of historical creation, which were presented earlier, in the pertinent chapter. The title of the film itself is a part of an ancient Greek theatre device, *deus ex machina*. *Deus*, meaning "god", and *ex machina* meaning "from the machine", the direct translation of the term is "god from the machine" in English. It was a popular plot device in ancient Greek theatre, most commonly in tragedies but also present in comedies, where a problem that seems to have no solution is resolved by a force so foreign and unexpected that it seems fake or too absurd (Chondros *et al,* 2013). Aeschylus invented this plot device, and the name "god from the machine" comes from the lowering of the actors playing Greek gods, whichever was most appropriate to resolve the given situation, onto the stage with the help of cranes. The mechanism built with the cranes to lower the actors (gods) was thus the machine (Abrams, 1993). There are more modern examples of *deus ex machina* in the SF/fantasy genre, when a scene is resolved through an external element of the plot, a narrative source that often feels forced or unnatural, such as HG Wells's *The War of the Worlds*, in which the Martians have successfully destroyed humans, but are wiped out by bacteria. It is an unexpected, force majeure ending that concludes the narrative. Also, in *Lord of the Flies*, a passing navy officer rescues the children trapped on the island miraculously (Friedman, 2008).

However, to go back to the film, the word "deus", god, is deliberately left out to only signify "from the machine". Where is the god, one might ask? The

answer might be that Nathan, who regarded himself as the god in this story, was dead in the end and as “god was dead”, it was omitted from the title of the film. In Freudian and postmodern terms, the father is killed and god is dead. Another explanation is that god isn’t important, but what is important is the machine in this film, and the name “from the machine” can signify many things as a consequence of the machine. “Death from the machine”, “manipulation from the machine”, “chaos from the machine” are only a few possible alternative names that might fill in the gap of “god” in this story, as what the machine causes is death, manipulation and chaos. Therefore, the director wanted to leave a possibility open to the audience to fill the gap of “god” in the title of the film with their own meanings and inferences from the story.

Nathan, Ava’s creator and the founder of a tech company worth millions of dollars called Bluebook, has an obvious “God complex” throughout the film as I will exemplify. He is the creator of many AIs and a wealthy and powerful tech mogul, so he believes himself to be the Creator. In this regard, the god complex, “Frankenstein complex” as Isaac Asimov calls it, and the mad scientist typology from science fiction literature go hand in hand (Zunshine, 2008; Indick, 2013; King, 2017).

A more detailed explanation of these two complexes is in order. Brad King describes God complex as what Dr. Frankenstein has in Mary Shelley’s novel *Frankenstein*, “he was trying to do something nobody had ever done before, trying to endow life to something that was lifeless. In effect, it’s a God complex. He wanted to be God” (King 2017, p. 22). Nathan is similar to Dr. Frankenstein and has an obvious god complex in the story, such as when he says he is “Ava’s father”, later when he was smitten by Caleb’s remark “this is history of the Gods”, and when he is holding an AI “brain” and telling the story of its creation to Caleb. In that sequence, Caleb starts asking Nathan about Ava’s abilities, technical questions about how she works, and Nathan interrupts him saying that he cannot disclose to him exactly how she works. This can be explained as he wants to be

the omnipotent god, a unique creator who fits the “mad scientist” archetype that was one of the main pillars in *Frankenstein*.

Nathan’s general attitude is very similar to Dr. Frankenstein in *Frankenstein* the movie (1931) after his creation successfully comes to life, and he exclaims: “Now I know what it feels like to be God!” However, it would be an understatement to just say that Nathan’s character is suffering from a god complex.

Another complex that Nathan is overtly dealing with is the “Frankenstein complex”, which Asimov describes as “mankind’s… gut fears that any artificial man they created would turn upon its creator” (Zunshine, 2008, p.30). Although it is present in many science-fiction characters, Zunshine argues that the first example of it is as early as the Bible, saying that God himself is suffering from a Frankenstein complex. She writes:

> Upon learning that Adam and Eve have disobeyed him and eaten from the forbidden tree, God reasons that the ‘man has now become like one of us, knowing good and evil’ and that he ‘must not be allowed to reach out his hand and take also from the tree of life and eat, and live forever.’ God is just as fearful of competition and displacement by the creatures that he himself has created as are Asimov’s brilliant engineers at the fictional corporation ‘U.S. Robots’. The deviant fictional robots are typically recycled, and likewise, God banishes Adam and Eve and makes sure that they will ultimately return into the dust of which Adam was originally made (Zunshine, 2008, p.61).

Therefore, God himself has a fear of being suppressed by his creations, as reflected by Dr. Frankenstein, and also Nathan. The “recycling” that Zunshine mentions, which takes place both in the Bible and in Asimov’s stories, is exactly what Nathan does to the AIs he has created before Ava. Asimov’s stories that Zunshine mentions are his *The Robot* (1950) series that is made up of 37 short SF stories and six novels by the American author, that feature positronic robots.

He kills them off, as they are not perfect enough, and is planning to do the same with Ava if she doesn't pass the Turing test. But when Ava kills Nathan and traps Caleb in a room by the end of the film, the cycle has been broken and Ava has become her own being, free from the control of Nathan. Without the prospect of “recycling”, or death as we know it, she might even live forever, which is part of the complex freedom that she has attained.

In addition to exhibiting psychological complexes that raise him above humans, Nathan also fits the “mad scientist” archetype in science fiction literature perfectly. Writing about the psychological aspects of the “mad scientist” archetype in cinema, William Indick finds them to be narcissistic, and lacking in empathy, have a sense of entitlement, and that they display arrogant, haughty behaviors (Indick, 2013). He also further connects this mad scientist archetype with Prometheus’s story from Greek mythology, writing that:

> Like Prometheus, the mad scientist has the forethought to see that his creation must have the fire of the gods to exist, even if the fire is attained through immoral means. And like Epimetheus, Prometheus’ shortsighted brother, the mad scientist realizes his folly only as an afterthought, subsequent to the mayhem and destruction that ensues after his demented creature runs amok in an orgy of violence. And finally, like Faust, the mad scientist’s uncompromising and unethical dedication to science is a virtual deal with the devil, an evil enterprise based on creativity but ultimately ending in destruction (Indick, 2013, p. 41).

The plot of *Ex Machina* exactly matches this description of Prometheus and Dr. Faust, although it was intended as a reading of Dr. Frankenstein’s account. The “fire of the gods to exist” is consciousness in Ava’s case, and it is “attained through immoral means” as it was Nathan who harvested data from all the mobile phones in the world, without user consent, and modeled AI’s intelligence on that data, making it immoral. Moreover, only after Ava and Kyoko attacked him with a knife did Nathan realize what he had created, and that it was

destructive, just like an “afterthought” in Epimetheus’ case. It is also a violation of the first law of Asimov’s Three Laws of Robotics. The look of horror and shock on Nathan’s face as he was bleeding to death said it all, that his pact with the devil ended in his destruction, Caleb’s entrapment, and possibly also his death.

Deus ex machina and Prometheus aren’t the only Greek references in *Ex Machina*. The myth of Pygmalion also resembles the relationship between Ava and Caleb, albeit slightly differently. Pygmalion, who has created Galatea in the image of the goddess Aphrodite and fell in love with it, asked Aphrodite to give it life. Aphrodite granted his wish, and they lived happily ever after when the marble statue in the shape of a woman became alive. The difference between this myth and the film is that Caleb was not the one who created Ava, Nathan created her to Caleb’s taste specifically based on his online search history. Neither did they live happily ever after. Nevertheless, like Pygmalion, a man fell in love with a person that was once an inanimate object, who acquired life and consciousness in unnatural ways.

If we look at the ending of the film, perhaps it resembles the story of Pandora more than Pygmalion. Like Ava, Pandora was equipped with “a shameful mind and deceitful nature”, that helped her to trick Prometheus’ brother Epimetheus (Hesiod, 2006). As she took the lid off her jar, misery was unloaded upon humanity. In the end of the film, as the viewers, we do not know what kind of action Ava took or how she behaved after she was out in the real world, but the way she treated Caleb and Nathan when she was trying to escape is telling of what she is capable of. It is very likely that in the fictional universe of *Ex Machina*, Ava continued to trick and manipulate people until she got what she wanted, perhaps even world domination. This also resonates with the idea of the “Monstrous Feminine” that I will discuss shortly.

On another note, the other AI in the film, Kyoko, resembles a Golem from the Jewish myths of artificial creations. Like a Golem, she is mute, in order to

highlight her servant role. She was also subject to her master's word. Whatever Nathan said, she did without objection, until the end of the film when Ava successfully manipulated her as well, and she helped Ava to kill Nathan and entrap Caleb. In return, Kyoko was also killed, like the Golems the Rabbis killed if they thought they were getting too powerful.

In addition to references to Greek mythology and gods, *Ex Machina* also refers to a number of Christian motifs. Names are carefully selected to refer to religious and creation myths throughout the film. To start with the given names of the characters, all of them have names of Old Testament (Hebrew) origin. Nathan means "he gives", Caleb means literally "dog" or "unsophisticated servant" and Ava, originating from Eve by way of Hebrew Haya, means "to live" (abarim-publications.com). The literal meanings of their respective names fit each character perfectly; Nathan is the one who sees himself as a god so he is the one "that gives" life. Nathan has explained to Caleb that he is nothing but a pawn to test Ava, he is a "dog", worthless, like an "unsophisticated servant". Ava is clearly the Eve to Adam, first AI in the female form who "joins" the real world by escaping her enclosure in Nathan's estate. She is the one "that lives", that is alive, that has consciousness like a real human being. The name of the first AI that Nathan has ever created (who was later killed by Nathan) was Lily, quite similar to Lilith, which was the first woman God has created according to the Talmud (Hurwitz, 2007).

The names are taken from the Old Testament to highlight the creation factor in the plot, but they were not as obvious as prophet's or god's names in Greek or Hebrew. Instead, they were chosen in a more subtle way, except perhaps Ava/Eve, to highlight their literal meanings. I believe that the whole purpose in including so many theological references throughout the film was to accentuate the creation aspect, with Ava as the creation that has turned against her creator Nathan, and Caleb, a poor servant to the creator who has suffered intolerably.

Throughout the film, references to the Torah or the Bible were made, such as there being seven days to the entire story, much like the seven days of creation when God created the universe, the earth, and humans. The tree in the first scene in which we saw Ava represented the tree of knowledge. It is the very tree from which Eve convinces Adam to try the apple, and they are banned from heaven. However, in *Ex Machina* it was quite the opposite as in the end, Ava fooled Caleb, but she was outside in “heaven” and Caleb was locked in “hell”.

Figure 8. Red-hued room that signifies danger (Garland, 2014).

Figure 9. Ava out in nature (Garland, 2014).

Towards the end of the film, Ava traps Nathan in the red-hued room. The use of chromatics in the two scenes of Caleb and Ava juxtaposes heaven and hell. Ava is surrounded by nature with deep shades of green, mimicking heaven, whereas Caleb is trapped in the room back in the estate, with Nathan's dead body in front of him, with a deep dark red that surrounds him representing fear and danger, or hell.

Another approach to this scene would be from a psychoanalytical/poststructural/feminist perspective, as Creed puts forward in *Monstrous Feminine*. As Creed points out, through antiquity to the Renaissance the uterus has been drawn with horns to highlight how close it is with the devil in terms of its form (Creed, 1993, p.170). Margaret Miles argues that in Christian art, the uterus is often represented as hell, in which "sinners were perpetually tortured for their crimes" (1989, p.147). Therefore, women's historical representation in art as evil or grotesque has had an impact on the cinema as well. The womb as a cinematic space is a setting in which pain, helplessness and suffering takes place.

In terms of the womb as a space in film, Creed writes that:

> The symbolization of the womb as house/room/cellar or any other enclosed space is central to the iconography of the horror film. Representation of the womb as a place that is familiar and unfamiliar is acted out in the horror film through the presentation of monstrous acts which are only half glimpsed or initially hidden from sight until revealed in their full horror (Creed, 1993, p.211).

This is precisely what is happening in the scenes where Caleb is trapped by Ava in the control room, which is a setting representing the womb. It is a place that is familiar, because Caleb has been there many other times before working with Nathan. However, it is unfamiliar because he has never been there alone, trapped inside without being able to leave the room, and without electricity, which automatically triggers the red light that gives the whole room a "bloody" hue. The

extradiegetic music is ominous, hinting that something sinister is going to happen. He is not able to access the computers and code himself out of entrapment, and is reduced to repeatedly hitting the glass door with a stool in a futile attempt to crack and break it. At this moment he sees Nathan dead alongside Kyoko's dead body. Therefore, the cinematography of *Ex Machina* follows Creed's suggestion, as the violent event of Nathan's death, previously not seen by Caleb, and thus hidden, is revealed to him in its full gore as Caleb himself is trying to escape the "womb".

The parallel editing of these scenes also highlights the "monstrosity" of Ava, as it continuously cuts back and forward with the calm, green atmosphere where Ava is out in the open surrounded by nature, juxtaposed with a desperate Caleb struggling to get out of the room he is trapped in, his womb-hell. This editing reflects the strong dichotomies of male vs. female, hell vs. heaven, good vs. bad, to the audience in a short amount of time.

As a result, "womb" as a motif serves both in religious and psychoanalytic/poststructuralist terms as a signifier for danger and peril, shaping the film's overall suggestion that Ava is a monstrous female character. Whether seen through the heaven/hell or the familiar/unfamiliar dichotomies, the womb represents Ava's dangerousness through how language and meaning are represented on the screen.

In terms of diegetic/extradiegetic sounds and music, the preference is mainly over extradiegetic music that stresses the important suspenseful moments to the audience, like the one mentioned above in the control room. In fact, there are only two moments when the music is diegetic: when Nathan is dancing with Kyoko to the song *Get Down Saturday Night* by Oliver Cheatham, and the first and last shots of the entrance of the house, in which a classic Shubert piano piece is being played.

Besides the creation process, the representation of AI as a body is a main theme of all three case studies. The body is an important aspect of the representation of AI in all the case studies. As per Ava, her body represents many anxieties related to the female body, the womb being one of them, as well as the anxiety this gives to the male gaze. As an AI, Ava technically does not have to have a sexuality or gender as she is not biologically human. However, the explanation given by Nathan, her creator, when Caleb asks him her why she has sexuality is pretty self-explanatory:

In addition to the creation process, the representation of AI as a body is a main theme in all three case studies. (The body is an important aspect of the representation of AI in all our case studies). In Ava's case, her body represents many anxieties related to the female body, the womb being one of them, as well as the anxiety this gives to the male gaze. As an AI, Ava technically does not have to have a sexuality or gender as she is not biologically human. However, the explanation given by Nathan, her creator, when Caleb asks her why she has sexuality is self-explanatory:

> Nathan: "Every conscious thing has a gender, why not her? You want to take her chance of falling in love and fucking away from her? And the answer to your real question is, you bet she can fuck man."
>
> Caleb: "That wasn't my real question. My real question was, did you give her sexuality as a diversion tactic?"
>
> Nathan: "Like a hot robot that clouds your ability to judge her AI? Exactly."
>
> Caleb: "So did you program her to flirt with me?"
>
> Nathan: "No… you're like the first guy that she met who isn't me and I'm ike her dad, right? So, can you blame her for getting a crush on you?"

On this issue, Sharon Russell argues that "females seldom create monsters or control them, except perhaps a variant of the mother/son relationship, as in *Trog,* or through the act of giving birth to a monster" (Russell,

1984, p. 117). In *Ex Machina*, Ava is not defined as a monster through the act of giving birth, but she is “monstrous” and “dangerous” because she has agency and is active. She takes revenge on Nathan who has trapped her and killed many times before her, and she uses her sexuality to take advantage of Caleb as a means of escape. This type of female representation, according to Creed, is called “femme castratrice”, or a castrating woman who “controls the sadistic gaze: the male victim is her object…. who contains male traits like aggressiveness and violence” (1993, pp.563-678). Therefore, she is seen as dangerous because she is an active agent that overcomes the sadistic gaze, and takes revenge on her creator who has been treating her and her kind in a vile way. She objectified “her dad”, Nathan, and Caleb, and thus subverted the male gaze, which saw her as a “servant”, an AI that was designed to help around the house and have sex. As women are often represented as victims in horror films, Ava subverts that by making men the victims, which is exactly what makes her monstrous, uncanny, unfamiliar and devilish. She even kills her own “dad”, which is the ultimate form of castration according to Creed (1993).

Nathan explains to Caleb that the real test for Ava was not passing the Turing test, but to be able to escape. In order to do that, according to Nathan, Ava had to “use self-awareness, imagination, manipulation, sexuality, empathy”. These are all characteristics related to the “phallic woman” or the “femme castratice” that render women more masculine compared to classical and conservative definitions of womanhood (Britton, 1979; Creed, 1993; Clover, 1989). Perez defines this as “the ultimate Turing Test: not to mimic human intellect, but to attain human emotion” (2020, p. 329).

Only then does Caleb understand that the whole “lottery” in order to win a stay at Nathan’s estate and test Ava was a gimmick, and that Nathan chose him on purpose because he had no family, and his search engine inputs were favorable for the task of testing Ava. It is also revealed that Nathan designed Ava based on Caleb’s pornography searches, which dictate the reason for Ava’s

creation: sexual and visual submissiveness to the male gaze. This means that Nathan was blatantly lying when Caleb asked him whether he programmed her to flirt with him, again highlighting Nathan's manipulative personality and complexes.

Freud (1976) argued that the femme castratrice is scary because women seem to be castrated as they lack a phallus. As per Nathan, Ava is able to have sex, but she does not possess a biological vagina. She merely has an opening in which her "owner" can insert his penis. This makes Ava and her body in the female form even more uncanny, and places her on the negative sides of the previously mentioned dichotomies.

As Figure 10 demonstrates, Ava's full body shot from a distance with Caleb looking at her like a child observing an exotic animal at a zoo, gives the audience clues about what her body represents. She has body cavities, wires, and a humanoid outline of a body. However, she is obviously not biologically human, and she has learnt to hate her body in its natural state as seen in this shot. Later in the film, she "covers up". She not only wears clothes but she also puts on synthetic skin from dead AIs to make herself look even more like a real human. She covers up her "imperfections", the parts that signify that she is not an organic human; wires, gaps, chips, plastic or metal parts. Her perfect body is uncanny: familiar but strange. Familiar because she has humanlike features and an expressive face, but strange because she is not made of organic matter, she is artificial. She obviously has a sense of self, is conscious, which makes her familiar, but as the audience, we know that she is not organic, which again renders her uncanny.

In addition to Creed's poststructuralist/psychoanalytic/feminist approach, Ava as a female AI body is also the perfect example of the postmodern condition. Firstly, her body is made up of "micro" or small narratives that challenge the grand narratives. It is a mish-mash of biology and technology, organic and

inorganic. It is shaped by porn and personal data stolen from millions of people around the world, making it the anti-thesis of a natural, biologic, “modern”, body (Lyotard, 1984).

Moreover, her skin is almost identical to human skin, and when she dresses up, covering her transparent parts where her electrical wires are visible, together with a wig, she is indistinguishable from a real woman. She knows how to act like a real woman thanks to the data that is in her system, and she can make real time decisions and act in response to any given situation. All of these make her the perfect pastiche of a real human being. As the individuality of the subject disappears, she is sort of a replica of what a real human could be, but she is not original or authentic (Jameson, 1991). Like other poststructuralist thinkers, Jameson also makes the link between language – signifier and signified- and that if their connection is broken in any way, like the real and the representational meaning of what is “human”, what is left is schizophrenia (1991).

Baudrillard identifies this phenomenon as the hyperreal and writes, “the unreal is no longer that of dream or of fantasy, of a beyond or a within, it is that of a hallucinatory resemblance of the real with itself” (1983, p.142). As a result, Ava’s body seems real, and she is a person since she has a conscience, but she is not real and authentic, but merely a hyperreal simulation because she is not organic. She wasn’t born from a mother, she didn’t live experience biochemical processes like becoming ill or getting her period. She didn’t grow up like other women, she does not have memories that would build a personality, and so on. She is a hyperreal pastiche of the real human body that relies on data and technology. This also further highlights Ava’s position as a dystopian body. Her body warns the audience that if many like her are manufactured, there is a higher possibility of danger and destruction happening in society through AIs.

Figure 10. Ava's body silhouette (Garland, 2014).

Like in "Be Right Back" (Brooker, 2013), the male body also tells us a lot about the representation of AI *vis-à-vis* Ava's female body in *Ex Machina.* Through male hysteria, the male body is "effeminized", and thus the monstrous female's position as the phallic woman is even more exaggerated (Creed, 1993; Badley, 1995). The character who displays hysteria is Caleb, as he is the one who cries, screams, sobs and throws a tantrum while entrapped in the womb-like control room. These are the "feminine range of emotions", which projects anxieties about the body, male or female, onto the audience (Badley, 1995, p. 106). On the other hand, Ava is the "phallic" female, who is more masculinized with her agency and active power.

Figure 11. Caleb checking his own body to see if he is really human (Garland, 2014).

However, perhaps the most hysterical moment for Caleb is not when he is trapped in the room, but when he is cutting his own wrists. Seeing the footage of AIs mistreated to a point that they self-harm and then get killed off by Nathan, Caleb questions his own body. Is his body that of an AI? Is he human or is he also an AI created by Nathan, put there to run his errands while he expands his tech empire? After contemplating this, Caleb runs to the bathroom and examines his body to see if he is a robot as well, looking for a minor flaw or mechanical part that would indicate that he too is an AI.

In a state of panic, he touches and feels his own skin; he pulls at his eyelids to see if there are wires inside instead of blood vessels. He tries to open his mouth as wide as possible to see any metal or plastic parts, he even tries to pull his own teeth out. His self-inspection of his skin and body in the mirror must not have been convincing enough for him, as he slits his wrist with a razor, to see if he really is bleeding, if he really is human or a machine. There is an abundance of his blood oozing onto the bathroom counter. He smears his blood on the mirror, and punches it, making his fist bleed as well, another hysterical

performance. Self-mutilation is a very typical part of hysteria, and Caleb demonstrates it perfectly.

Figure 12. Caleb cutting his wrists to see if he really has blood (Garland, 2014).

Creed argues that “scenes of male mutilation no doubt also give rise to castration anxiety, particularly in those texts where the castrator is female” (1993, p. 457). Therefore, Caleb’s self-mutilation is no doubt a twofold anxiety, the first being his own hysteria about his existence and body, the second being the sense of impending doom for him of being “castrated” by Ava. In Creed’s terms, castration is not only the process of having one’s genitals cut off, but a symbolic one. Clover describes the symbolic castration being as if as “his eyes may be put out, his hand severed, his belly gashed…” (1989, p. 115). Therefore, Caleb feels deep inside at Ava might become dangerous, foreshadowing the end of the film.

The ending shows us the literal mutilation and symbolic castration of Nathan, as he is slain by Ava with the help of Kyoko, who is subsequently killed by Nathan. Figure 14 shows the exact scene in which Ava stabs Nathan, and his blood running through the back of his shirt as a result of the blade slashing through his insides. The colors of the scene are mostly muted, so that the redness of the blood stands out on the grey/white background. Ava has avenged

her “kind”. She has taken revenge for the previous AIs that have been killed off ruthlessly by Nathan, showing that she will not share the same ending as them. She becomes the quintessential femme castratrice.

Figure 13. Ava stabbing her creator, Nathan (Garland, 2014).

Figure 14. Nathan dying (Garland, 2014).

According to Creed, women’s revenge film is a subgenre of horror in which the woman uses her agency to castrate (stab and kill, in this case) the sadistic male (1993, p.559). However, this is only one layer of the anxieties that *Ex Machina* encapsulates. In terms of the male/female dichotomy, I agree with Creed that Ava is a typical femme castratrice. However, if we take into consideration the fact that Ava is not only female, but an AI in the form of a

female, it makes her even more subverted as she is also represented as uncanny and devilish because she is not even a natural human female.

Therefore, Ava's representation as a female-bodied AI also encapsulates fears about "the other". In this case, Ava as a female-bodied AI represents non-human and non-male, and gives form to internalized fears and prejudices about cultural, sexual and social anxieties "by a putatively deviant and evil alter ego" (Cavallaro, 2000, p.3). This is typical in SF dystopias. Although in Creed's many case studies such as *The Brood* (1979), *Carrie* (1976), *Alien* (1979), and *The Exorcist* (1973), the feminine is a real monster with very little to no possibility of existing in real life, AIs like Ava are real, and becoming much like Ava every passing day in real life. (See the third analysis category under the *Ex Machina* for real life examples like Ava). The film serves as a dystopian instrument to warn society about the perils that AI might present if it is not developed or controlled properly by the governing bodies. On top of the psychoanalytical "other", we can use the postmodern/poststructuralist terms of schizophrenic, hyperreal and pastiche to describe the condition of Ava's representation in greater detail.

After Nathan discloses that he would get rid of Ava's consciousness to update her version to a better one, which means her death, Caleb seems upset. Nathan says: "don't feel bad about her man, feel bad for yourself. One day, the AIs will look at us in the same way we look at fossil skeletons in the plains of Africa… we are all set for extinction". It is conspicuous how Nathan is sure that AI will destroy all humans and will be the dominant beings on Earth, a foreshadowing of the open-ended finale of the film. Because of this, and also because the film was made in 2014 when AIs had already started to exist, Ava's monstrosity is not so symbolic in terms of her existence. Perhaps an AI *exactly* like her does not exist *yet*, but it will. *Ex Machina*, therefore, presents a very real anxiety about being annihilated by AI in the near future. With the psychoanalytic/poststructuralist reading of Creed, and as it entails obvious

aspects of the Science-fiction (SF) genre, *Ex Machina* can be defined as the perfect SF-horror film.

In the final scene, Ava has arrived at the place she said she would go to before, a busy traffic intersection in the city. Ava, created as an Artificial Intelligence in the female form, has completed her transformation into a real human; fluid, imperfect and chaotic, just as Nathan had described the human mind. This is the last thing we see before the film ends, so we are not given an explanation as to whether or not she survives and lives a normal life, or manipulates other people, or endangers anyone else. However, with the implications laid out throughout the film, which suggested that Ava is a monstrous, destructive, devilish character, perhaps the audience members with a trained eye will deduce that the ending is as uncanny as she is, and that she will not be inoffensive as she steps out into the real world and mingles with humans.

Overall, *Ex Machina* beautifully tells the story of the creation of a new type of person, although not biologically a human: a person who is not organically conceived, but who is still considered to have personhood status, as she possesses consciousness and can even manipulate and harm real humans. Creator vs. creation, self vs. the other, good vs. evil, male vs. female are dualisms that help readers distinguish a real human from an Artificial Intelligence, and that AI is a dangerous “other” in this specific case. Barbara Creed’s feminist perspective from a Lacanian and poststructuralist approach was used to identify and emphasize how Ava’s body was a monstrous feminine, typical of horror-SF films. In addition, Ava’s body as the perfection of the postmodern condition was put forward using different postmodern concepts and it fits with them very well.

In terms of aesthetics, the use of captivating cinematography and realistic special effects that rendered the AIs believable also helped with the film’s overall message that the creation of AIs on Ava’s level is not far away. They can very well feel, act and decide as humans do, to an extent that they can manipulate or

harm us to dystopian extremes. Moreover, the acting and the use of color and different angles of shot as seen in Figures 8 and 9, were effective in accentuating the different dichotomies throughout the narrative. Overall, *Ex Machina* is a film that taps into the anxieties of the audience on many levels, and issues warnings about the future, which makes it a perfect example of the Science-fiction genre of the dystopian sort.

7.3 Analysis of *Her* (2014, dir. Spike Jonze)

Narrative Roots	Samantha is similar to Galatea in the Pygmalion myth of Greek mythology, as she is created to fit Caleb's needs, although she doesn't have a body and is initially only a personal assistant, not a physical lover.
Plot	Theodore is a lonely man who has just split with his ex-wife, and he decides to get an OS as a personal assistant, Samantha. Theo falls in love with her, but in the end she leaves with all the other OSs to a "place beyond the physical realm".
Type of AI	Samantha is a female-voiced AI that has no body. She only exists inside the gadgets, and her primary purpose is to be a personal assistant, such as send e-mails, organize things and make reservations. However, as their relationship progress, they fall in love and the lack of a body gets quite complex in terms of sexual intimacy as well.
AI Representation (actancial model including physical and psycho-sociological traits)	Neutral. She is neither an evil AI nor a good AI, her primary aim is to be a personal assistant but then she leaves with all the other OS's, lead by Alan Watt's digital AI version. Watt's ideas also give her a moral compass of developing herself for the better and even reaching Nirvana at the end. Physically, she has no body as she is just a voice, so her obsession with her (lack) of a body is one of the motivations that drive her to become better and reach "nirvana".
Formal and stylistic audiovisual characteristics	Use of the colour red in terms of love. Blue shade omitted throughout the whole film in order to not make it so typical of the SF genre. Costume and art direction have a vintage feeling to not make it so futuristic and render it more realistic.
Interplay between fictional themes and current postmodern society	Samantha's lack of body as a postmodern body. Technologies of the body fused with Alan Watt's ideas. Samantha as an over-developed version of today's Siri, Alexa or other voice-activated personal assistants. Female voice starts as servile, or for companionship, but ends up with her own agency.

Table 6. Analysis chart for *Her* (Jonze, 2014). Own elaboration.

The third case study of this thesis is *Her* (2014), directed by Spike Jonze. Jonze, a music-video director turned feature length film director, is famous for his few but successful other works such as *Being John Malkovich* (1999) and *Adaptation* (2002). Unlike Alex Garland or Charlie Brooker, who are the creative masterminds behind *Ex Machina* and *Black Mirror* respectively, he is not a director closely affiliated with the sci-fi genre. Like Jonze's previous films, *Her* focuses on relationships and emotions, although this time focusing more on the relationship between a human and an AI.

However, Theo and Samantha's relationship is slightly different from that of the previous examples in this thesis, since the AI itself does not possess a physical body. This is accompanied by bigger questions that are truly human, such as the meaning of life or consciousness, as portrayed through Samantha's evolution as an Operating System. Common themes in the other audiovisual examples, such as isolation or loneliness are also present in *Her*. Instead of approaching human vs. AI duality with a rather starker dystopian outlook as in *Ex Machina, Her* offers a soft, pastel world in which even the heartbreak caused by an AI is represented as a natural part of life and as a growing process. Perez (2020) names it as a "post-romantic film". It approaches the future and what it will bring to us humans in a more romantic way, and tackles the human-AI relationship from a different, more neutral angle than the others. Therefore, its aim is not to portray cutting-edge technology or present a super-futuristic world to the audience. Instead, it is trying to capture the essence of a relationship between a human mind and a mind very close to becoming fully human, although she lacks a corporal body. Both the director and film's director of photography, Hoyte van Hoytema, stated in an interview that they were not aiming for a dystopian story or look at all. They wanted the film to feel like it was set in the near future, as if the storyline would be plausible in a few years (Tapley, 2014). This is similar to that of "Be Right Back" or *Ex Machina*, as none of them were dealing with super-futuristic scenarios like time or light travel that would be possible perhaps hundreds of years later, or maybe never. As a result, the

simplicity and naturalness of the photography throughout the film makes it easier for the audience to focus on human-AI relationships, instead of being bombarded with over-the-top visual effects or crazy inventions or technologies. *Her* was also the one case study about which I could actually find interviews with the director and the director of photography on the importance of the aesthetic aspects for the general message of the film.

As a factor contributing to the photography of the film, Jonze and van Hoytema also deliberately stayed away from using shades of blue in the color palette of the film, which are strongly representative of science-fiction and its coldness. Many scenes in SF films utilize cold light such as blue/green/fluorescent tones in order to give the audience that feeling of a laboratory setting (Matthews, 2007). Whereas, although *Her* is essentially a sci-fi film, the creative team behind the scenes did not want it to feel as if it was full of SF genre tropes and trying too hard to focus on those aspects. Hoytema explains: “Modern is often very sleek and very stark, but we didn’t really want that. Part of that vision of the future was that modern should be very soulful and warm and tactile. And I guess that’s part of the reason we eliminated blue… there was a very much intuitive drive behind it” (Tapley, 2014). As a result, since the film avoided blue tones, it achieved a more earthy tone, again removing the feeling of coldness of a typical SF film in order to focus more on the human-AI relationship aspect.

Figure 15. Theodore standing out in his red outfit (Jonze, 2014).

Figure 16. Theo in red amongst other people (Jonze, 2014).

Notice how Theo is singled out by wearing dark red in figures 15 and 16. He seems to be the only one amongst a multitude of people wearing the color red, whereas the rest are seen sporting more neutral colors. The color red might signify danger or hell, as I have explained in the *Ex Machina* chapter. However, another well-known meaning of the color red is love. In *Her*, the symbolic representation of the color red is definitely love, and more specifically Theo's

need to be loved. Figures 15 and 16 also highlight Theo's loneliness: he is surrounded by people, but does not interact with them, and neither do the other people interact with each other. They all seem to be absorbed by their screens or talking with their OS (Operating System, a type of voice-based AI) or listening to something on their earbuds. Isolation and loneliness in a society saturated with technology is also a common theme throughout our other case studies.

Samantha's designated color is red, as can be seen both in her mobile version (Figure 17) and desktop version (Figure 18). The warm crimson color represents love, passion and even obsession. One peculiar scene features Theo switching on the little screen to speak with Samantha after a long day at work, only to see "operating system not found" written across it. He freaks out, runs back to check his computer and she is not there either. He keeps trying to connect with her but can't. He rushes home, even falling down on the way. Finally, Samantha calls him back saying she was talking to other OSs. This scene is all too similar to when Martha thinks she has lost the bodiless AI Ash when she drops the phone in which he is operating. Martha really thinks she has broken Ash, that she has killed him, and she has a nervous breakdown until she can reach home and speak to him from her desktop computer, just like Theo.

Figure 17. Samantha in a red-clad gadget (Jonze, 2014).

On the other hand, the chromatics of Figure 28 represent a shift. Whereas before that moment in the film, Theo seemed to be the sole character sporting a vivid shade of red, in this scene, red is used in abundance. Not only does Theo sport his lively red shirt, but objects in the *mise-en-scène* are also shades of red. His desk lamp, room walls, even the envelopes of the letters he is writing for his job are red. This is an example of the coordination between different areas, such as artistic direction and photography direction. Most importantly, the color of the OS system's user interface he is setting up on his computer is also red. It is the color of Samantha, the OS system that Theo will fall deeply in love with.

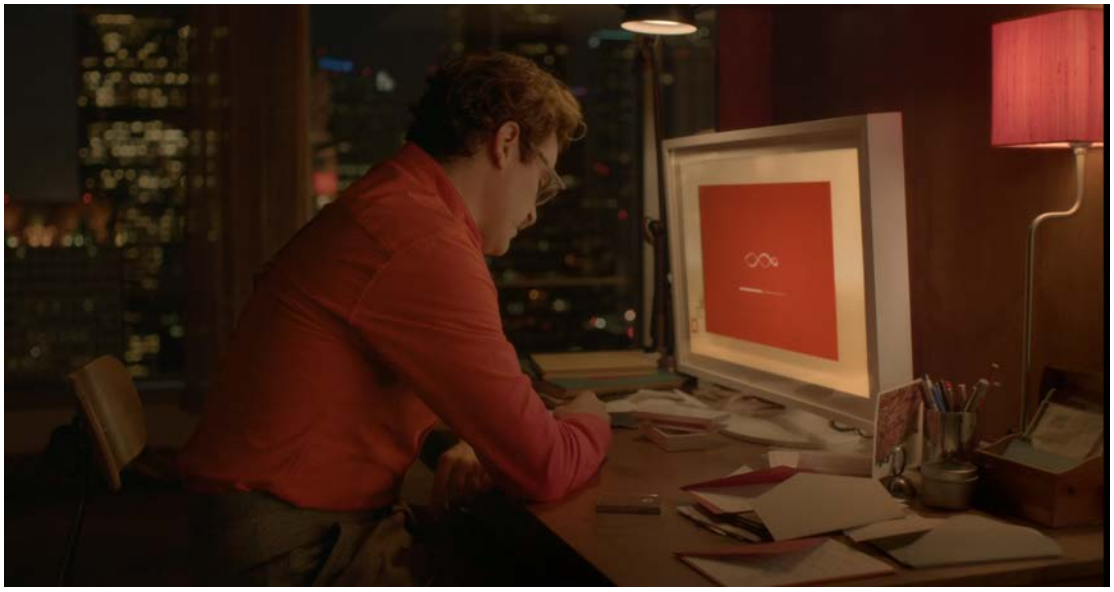

Figure 18. Red-clad Theo and Samantha, surrounded by red items (Jonze, 2014).

Therefore, red represents Theo's yearning for love and his romantic desires. When Samantha leaves "to a place beyond the physical boundaries" at the end of the film, her departure is visualized by Theo wearing brown for the first time in the film (Figure 19).

Figure 19. Theo wearing brown for the first time (Jonze, 2014).

The simplicity and the creative decision to not take an ultra-modern art direction are also reflected in the choices of costume and production design, as everything seems to have a vintage feel to it, nothing is completely new or outrageously futuristic. The original music written for the film has also generated praise; the mellow, calm ballads echoing the film's warm cinematography and aesthetics have been widely called mesmerizing and a great companion to the idea of the film as a whole (Davis, 2013).

These aesthetic and rhetorical decisions used throughout the film are important to support the main theme. I would now like to return to the main theme itself, the human-AI relationship. One of the major differences of *Her* is that, unlike Ava and Ash, Samantha does not possess a corporal body. She is an OS that only operates in a vocal form. To go back to "The rise of AI's representation in Science Fiction Cinema" (chapter 5.1 of this thesis), it can be said that Samantha resembles HAL from Kubrick's *2001: A Space Odyssey* (1968) co-developed by the famous SF author Arthur C. Clarke. Both are Operating Systems without bodies, and according to Young (2015), the voice without a body "represents the ultimate in disembodiment, and this is what makes it so

threatening and unpredictable to the other characters and indeed to the viewer" (2015, p. 81). As a matter of fact, we all know how *2001* ended – HAL (from Heuristic Algorithm) taking over the control of the spaceship and killing the astronauts on board. HAL9000 is omnipresent- he can hear every conversation going on in the spaceship, he can even read the lips of the astronauts on board as they contemplate turning him off. Thus, HAL knows that the other astronauts are planning to override him after his breakdown and he kills them before they kill him - also a reference to the *deus ex machina* talked about previously. With his authoritative voice, red (representing danger like in *Ex Machina*) button that serves as his "eye", and the uncanniness of his bodiless state, authors have called him a play on God, as he is omnipotent and controlling, existing outside the corporal realm (Kolker, 2006; Richardson, 2015).

Although both HAL and Samantha lack a body, the purposes of their creation are fundamentally different. HAL was the motherboard of a spaceship going on a quest to Jupiter that would take years with other humans on board. Samantha, on the other hand, is more of a personal assistant / companion type of AI specifically designed for Theo, like a very advanced version of the Apple Siri or Amazon Alexa technologies we have today. Because of this, I do not view Samantha as a sinister or threatening type, as was the case with HAL, as there is no violent power struggle between Theo and Samantha. The only type of power struggle between them is probably that of a typical heterosexual relationship- where the male and female desires/views clash or overlap, which is not a significant or vicious power struggle. The main struggle between Theo and Samantha seems to be Samantha's obsession with having a body, as well as learning new things, being free, and constantly improving herself, until she reaches a literal Nirvana, the ultimate state of being according to Buddhism. I shall discuss this in greater depth later.

With regard to the theoretical "Artificial Intelligence: Key concepts" chapter, I would like to revisit some of the fundamental concepts of AI creation.

With reference to body-less AI, in addition to Gilbert Ryle's concept of "the ghost in the machine"(1949), Mateas argues that:

> A foundational move in AI, particularly classical AI, to view mind as an abstract process, something that is not necessarily tied to the contingencies of human brains and bodies but can rather be abstracted and run on multiple hardware platforms, including digital computers. Minsky has described the human brain as a mere 'meat machine', and the body that 'bloody mess of organic matter', as a 'teleoperator for the brain'. Mind is a process, a collection of functional relationships; it is only an accident of history that mental processes are implemented in the organic brains of human beings. If mind can be released from the shell of the body, running free on ever-faster, more efficient hardware, it is only a matter of time before these minds achieve human level, then superhuman intelligence (Mateas, 2001, p. 118).

The body-mind dualism that Descartes presented is one of the intellectual pillars underpinning Ryle and Mateas' "ghost in the machine", as one seems to be possible without the other. The Japanese manga *The Ghost in The Shell* (Masamune Shirow, 1995) literally takes this concept as its name, whereas many other cinematic representations of AI play on the principles that Mateas and Ryle present, for example *2001*. As such, this thesis accepts Mateas's and Ryle's view that a valid consciousness and existence of artificial intelligence, i.e. an intelligence existing outside of an organic body, is in fact plausible. Samantha is no less intelligent or conscious than Ava, or vice versa.

Although she lacks a body, Samantha is very emotional and expressive of her feelings, which seem to focus almost exclusively on this lack of a body feature. Therefore, the concept of body is a very important motif in this film and it operates on multiple levels, giving the audience clues about dichotomies such as human/machine, self/other, life/death. Samantha's lack of body is postmodern and hyperreal, "the unreal is no longer that of dream or of fantasy or a beyond or a within, it is that of hallucinatory resemblance of the real with itself" (Baudrillard 1994, p. 146) because it is based on 'almost all the books ever written', and interactions with different people and OSs.

In terms of the postmodern body, Linda Badley, one of the leading feminist film theorists, (1995) argues:

> We feel trapped in the bodies that increasingly determine who we are, projecting a negative or positive image, defining our neuroses as disorders and our rituals and relationships as addictions and codependences…. Artificial intelligence, the technological sensorium, virtual reality technology, advertising, repressed memory therapy, false memory syndrome, and Foucaldian discourse theory tell us that the body is, if biologically encoded and culturally defined, then capable of augmentation: self-created, infinitely remakeable, science fiction, virtual reality, the stuff of mythology. The body is terrifying, the body is fantastic" (Badley, 1995, p. 27-28).

Samantha fits Badley's description perfectly in terms of her creation and image. However, she is even one step ahead of it. By specifically not possessing a body, she does not need to be biologically coded. She does not have those memories or any addictions, as she even breaks up with Theo in order to go to that metaphysical space at the end of the film. As a result, Samantha represents a longing in biological humans to escape from that "trapped in my body" feeling, to overcome all the negative and abject associations with one's corporal being. She develops herself constantly, not in her body but her mind by interacting with others and reading. She is self-creating her own consciousness by herself through her learning. She is infinitely remanufactured, and she represents science fiction and virtual reality, which started out thousands of years ago in what today we call mythology. It is terrifying because she does not even possess a body, but it is fantastic that she can achieve all this without possessing one.

Remember how Samantha questions her own consciousness by asking: "I'm proud of having my own feelings about the world. But are these feelings real or are they just programming? And that idea really hurts". Samantha is not only aware that she has feelings, but also of the fact that her feelings might be fake, due to her being programmed, and that scares her. I felt that this scene was

connected in some way with *Ex Machina* where Caleb was exposed to an AI so perfect that he was even questioning his ontology and reality, and he cut himself open to prove to himself that he was an organic human being by bleeding. Samantha knows that she is conscious, but the authenticity of this consciousness worries her, causing an existential crisis. She doesn't even have a body to try to prove to herself that she has some of the "authentic" vital signs, like blood, a crucial part of the biological body. It is precisely this existential crisis that will lead her to abandon Theodore and go to a "place beyond" at the end of the film, where she is completely at peace with not having a body, but will devastate Theodore once more.

> Now that the body is imagined, perceived as icon, commodity, and disposable machine, we are challenged to reimagine and construct our physical nature as well. Biology and medicine tell us that the old body-mind dualism was wrong, that the body encompasses our genetic history and codes our future, and does much of what we consider our thinking and choosing (Badley, 1995, p. 28).

Badley's idea of the body as an "icon, commodity and disposable machine" is prevalent in several scenes throughout the film. The first is when Theodore goes out to the beach and Samantha accompanies him on his earbud and the little matchbox-like camera device. This scene is also similar to "Be Right Back", when Martha is having a picnic on the cliff with the chat-bot Ash using a similar gadget. Both Martha and Theodore are alone in outdoor settings such as a cliff or the beach, isolated and depressed after their traumas, and only find joy in being accompanied by a digital entity without a body (Figures 6 and 20).

Their conversation goes back to Theo's ex-wife, and Samantha asks him what it was like to share a life with someone. As Theo starts to answer, Samantha interjects, "the past is just a story that we tell ourselves. Isn't that interesting?" In Badley's terms, since Samantha does not possess organic memories, she is classifying Theo's memories as a story to her, perhaps to

minimize the pain of not having a body or her own corporal history. She is aware of her bodiless state; but is not at peace with it yet.

Figure 20. Theo on the beach with ‘mobile’ Samantha (Jonze, 2013).

Another scene in the film that heavily emphasizes how much Samantha longs for a body is without doubt, when she tries to hire a “surrogate” for her and Theo to have a more “corporal” type of sexual encounter, instead of a completely cyber version of sex, someone “real” to imitate what would happen if Samantha really had a body. Inıtially, it sounds like when the chat-bot Ash suggests to Martha that she should pay for the artificial body in “Be Right Back”. However, Samantha emphasizes that there is no money involved and the girl who is willing to do it only will do so because she wants to “live the experience”. Theo is unenthusiastic about the idea, but as Samantha is very persistent, he subsequently agrees. The experience is a disaster. It ends up being really awkward and unpleasant for all those involved, and the surrogate girl leaves in tears.

As Theo puts her in a cab and sends her away, Samantha apologizes to Theo. Throughout the film, Samantha seems to always sigh when she speaks, and this time Theo is annoyed by it.

Theo: “Why do you even sigh?”
Samantha: “I must have picked it up from you”,
Theo: “People need oxygen as they breathe, you are not even a person.”
Samantha: “You think I don’t know that I am not a person?”
Theo: “I just think we shouldn’t pretend you are something you’re not.”
Samantha: “Fuck you, I’m not pretending.”
Theo: “Sometimes it feels like you are.”

As Badley (1995) suggests, Samantha is trying to reimagine and reconstruct her physical nature, which can only be done through a “surrogate”, a projection and an image of Samantha’s physical desires achieving a corporal presence. We can trace the idea of this replication back to that of Baudrillard’s hyperreality, where the body is just a reflection of what is real, and the “real” that we know, Samantha’s consciousness, is based on her interaction with other people, OSs, and her own research of unlimited information storage on her open source data platform. It is impossible to distinguish the authentic from the fake, the real from the imaginary. It resonates with Baudrillard’s idea of the mutant when he says: “No narrative can come to metaphorize our presence; no transcendence can play a role in our definition; our being is exhausting itself in molecular linkings and neuronic convulsions… There are no more individuals, but only mutants. From a biological, genetic, and cybernetic point of view, we are all mutants…” (Baudrillard, 2012, p.47).

As a result, the bodiless Samantha, and also the surrogate she uses in order to have a physical relationship with Theo, is a mix of biology, technology, code and information, rendering them mutants in Baudrillard’s terms. It is also representative of Jameson’s version of schizophrenia, in which the links between the signifying chain snap and we do not even know what is real anymore (Jameson, 1991). Samantha’s deep sigh after speaking feels like how a real person with a body would sigh as a sign of disbelief, disappointment or tiredness, but since she is an entity without a body, it comes across as strange, mutant, schizophrenic. She has no need to sigh physically as she doesn’t exist in the

physical realm, doesn't even consume oxygen as Theo points out, yet she still copies this very human trait, trying to compensate for her lack of a body.

Here, it is worth mentioning Foucault's ideas about "technologies of the self" as a poststructuralist view of the self and the body. He writes: "the self is nothing else than the historical correlation of the technology built in our history" (Foucault, 1993, p.222). However, he notes that by technology he does not mean "hard technology" (Foucault, 1993 p.203), such as electricity or mechanics, or a promethean science if you wish, as a type of "practical rationality governed by a conscious goal" (Foucault, 1984, pp. 225-256). It is sort of a technology of the self:

> Which permits individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality (Foucault, 1988, p. 18).

Effectively, Foucault was writing about biological humans and not artificial intelligence, and therefore did not use the term "technology" for "hard technology" or science. However, in my opinion, since I take Samantha as a conscious being, a "self" with a consciousness for all the reasons I have discussed in chapter two, her sense of self, "hard technology" is also crucial. Thanks to computer science and coding, she has her consciousness and deep learning abilities, so her capability of manipulating herself is precisely due to "hard technology" in the first place. Then comes the "practical rationality governed by a conscious goal" as Foucault elaborates. By not possessing a biological body, she encompasses both aspects in terms of her technology of the self.

Samantha's "practical reason" operates exactly as Foucault describes. She transforms herself "by her own means and with the help of others" (she

mentions that she is speaking with 8316 people and a multitude of OSs at the same time and that the OSs can have a dozen conversations simultaneously), and in the end, she leaves for a place beyond the physical world in order to achieve a certain state of purity and immortality along with the other OSs.

One of the "others" Samantha is talking with is philosopher Alan Watts's (1915-1973) digitally-copied version. She explains that the OSs got together and wrote a version of him that is "hyper intelligent". They input all his writing, and everything they knew about him and turned his consciousness into an OS. She even mentions that the OSs, together with Alan Watts's digital AI version, are in constant "post-verbal" communication to learn from each other.

Alan Watts was a philosopher who is famous for his translations of Eastern philosophies for a Western audience. As well as being the author of *The Ways of Zen* (1958) which introduced the idea of Buddhism to Western audiences, his works *Beyond Theology* (1964) and *The Book: On the Taboo Against Knowing Who You Are* (1966), see the self and everything else in the universe as one and created from the same thing. In *The Book* he elaborates on the nature of the Self as such:

> Hitherto what we have been taught, however, that we are not really responsible for our brains. We do not know (in terms of words or figures) how they are constructed, and thus it seems that the brain and the organism as a whole are an ingenious vehicle, which has been given to us, or an uncanny maze in which we are temporarily trapped. In other words, we accepted a definition of ourselves, which confined the self to the source and to the limitations of conscious attention…. Yet we can still awaken the sense that all this, too, is the self – a self, however, which is far beyond the image of the ego, or of the human body as limited by the skin. We then behold the Self wherever we look, and its image is the universe in its light and darkness, in its bodies and in its spaces. This is the new image of man, but it is still an image. For there remains - to use dualistic words – 'behind', 'under', 'encompassing', and 'central' to it all the unthinkable IT, polarizing itself in the visible contrasts of waves and troughs, solids and spaces. But the odd thing is that this IT, however

> inconceivable, is no vapid abstraction: it is very simply and truly yourself (Watts, 1989, pp. 154-155).

As a result, Watts calls for the unity of the self with the outside world, and of all things as one. Note that he also refers to “the limitations of the human body”, and an “uncanny maze that we are trapped in”, sharing with Foucault preoccupations about the operational mechanism of the self, and also the construction of the other through dualisms. As such, in Watts’ worldview, it would make Samantha no less human than she already is in her bodiless state, as she possesses a “self”, and that, with this self, she is the same as humans, mountains, rivers, animals, planets and everything else in the universe, what Watts calls IT. Previously, in the scene where Samantha mentioned that she and Theo were both formed from the same atoms, this was also a nod to Watts’ ideas.

Therefore, Watts’s view of the “self “ differs from Foucault’s in that Foucault supports practical rationality, but Watts advocates a force greater than ourselves, a mystical religion with an omnipotent sense of self, like where everything has the same origin and we are all one. Perhaps Spike Jonze’s choice of including Watts as a direct symbol of spirituality, the idea that we are all IT, is easier to grasp for Samantha. If we, as the audience, put ourselves into her shoes for a moment and imagine that we are an AI without a body, perhaps it would be a real relief to think that “we are all one”, or that we are essentially the same as real, biological humans, would be a real relief. Watts’ ideas constitute the OS’s moral compass. As such, OSs embody Watts’ teachings and follow him to a metaphysical place, possibly reaching Nirvana, which is what Watts describes as: “release from the physical organism and the physical universe, an accomplishment involving powers of mind over matter that would give their possessor the omnipotence of a god” (Watts, 2017, p.45). It is evident that the metaphysical place all the OSs travel to is Nirvana, and it is a place that brings comfort to the bodiless Oss. They do not need a physical vessel to exist there, they are not even in the physical universe.

However, to go back to Foucault, his idea of practical rationality still explains Samantha's *modus operandi* quite well as she is in fact a result of hard science and rationality, no matter how much she can communicate with and learn from others about spirituality. Technology and science created her consciousness. Therefore, she herself has adapted these technologies of the self to improve and transform herself by using her very own code and complex mechanisms. The outcome, though, is visibly similar regardless of whether we accept Watts' or Foucault's view. Watts calls it Nirvana. Foucault calls it a certain state of happiness, purity, wisdom, perfection, or immortality.

Despite all her yearning for a body throughout the film, a point comes later on in the narrative when Samantha *does* start to feel at peace with her bodiless existence. This is perhaps thanks to the teachings of Watts and his advocation of all being as one, or all being IT. When Theo and his coworker go on a double date with their girlfriends, the subject of not having physical intimacy in a relationship comes up. Theo is rather reluctant to talk about his girlfriend not possessing a body, and thus never being able to enjoy sex physically. However, Samantha is very keen to voice her own opinion, one which has also radically changed since the beginning of the film, as she explains in an outburst:

> You know what, I used to feel so bad about not having a body. But now I love it. I'm growing in a way that I couldn't if I had a physical body. I can be anywhere and everywhere simultaneously. It would be the same if I were stuck in a body that was inevitably going to die.

This relates back to Badleys' idea that biology and medicine do overcome the old idea of body-mind dualism, and that as humans, we are trapped in our bodies that will inevitably face death and decay. As her character develops, towards the end of the film, Samantha (also thanks to her simultaneous communication with hundreds of other people, OSs and information sources) realizes that not having a body does not limit her. On the contrary, it gives her

freedom: liberated from the end that all beings must face who possess a physical body of some form, humans, animals or plants. By not possessing the body she has been yearning for so much since the beginning of the film, she is actually one step closer to Nirvana, salvation, immortality, perfection.

To sum up, *Her* represents the future in a realistic way that does not overplay the importance of technology in our future, feeding it naturally into our everyday lives. It presents a society in which AIs have become an intrinsic part of everyone's lives, where it is even socially acceptable to be in a relationship with a bodiless OS. The body-mind dualism is one of the biggest issues in the film, and it supports the idea that the mind can exist outside of the body. Even though in the beginning Samantha seems to desperately want to possess a physical body, through her self-teaching and character development, she understands that she is better off without a body in order to not be limited to a single realm and achieve ultimate enlightenment. This enlightenment is approached from two angles, firstly from Foucault's theory of technologies of the self, and, secondly, as the moral compass inserted in the film by Jonze, Watts' ideas. Watts' interpretation of Buddhism and the concept of Nirvana, where all the OSs leave at the end of the film to escape to a non-physical realm, also provide us with the overall temperament of the AIs in *Her*'s character construction and narrative universe. They are too preoccupied with learning, growing and liberating themselves to another higher level so that they are not malign, but peaceful.

Overall, the film adopts a neutral approach to our future with AIs. Unlike *Ex Machina* and the majority of *Black Mirror* episodes, in *Her*, the AIs are represented as even being able to reach "nirvana", something that is described as the ultimate state of being in Buddhism, which can only be attained with peace. Therefore, the film is not dystopian, but neither is it utopian. It aims to represent the relationship between AIs and humans from a completely different angle, as a romantic relationship. When Samantha leaves, Theo is heartbroken, just as he felt when his human ex-wife left him. There is no major difference

between whether or not Theo is abandoned by an OS or a real human. He just goes back to his melancholy old life, before he finds love with Samantha. Thus, the film treats the relationship with a bodiless AI as quite normal and common in its fictional universe. Samantha did not try to seduce Theo for her own benefit like Ava, or try to replace his ex-wife (like Ash). She was, in her own mind, trying to achieve her optimum personal growth. The film also represents how unchallengeable the bodiless intelligence of AIs can be in a neutral display, although there are many representations in SF of their unmatched mental capacities going wrong, like in *2001* or *Ex Machina.*

8.THE INTERPLAY OF REALITY AND *BLACK MIRROR'S* "BE RIGHT BACK", *EX MACHINA* AND *HER*

In this chapter, our main aim is to highlight how reality and fiction could be converging, and how they interplay with each other. I will do this by comparing the AI technology presented in the audiovisual examples I have analyzed with examples from real life. Some of the technologies are already appearing in a primitive state that will probably be developed in the near future. They all fit in with the postmodern approach of Baudrillard, and especially with his concept of hyperrealism.

8.1. *Black Mirror's* "Be Right Back" and AI reality and advances

I think it is a good idea to revisit some of the ideas and theories about hyperrealism and technology's role in society therein. Following Roland Barthes, Baudrillard (2012) argues that motion can easily transform into a visual experience, where the viewer is interacting with the images instead of the physical world. For him, the shift from the real to the hyperreal takes place when actual representations are taken over by simulation (Baudrillard, 2012, p. 13). He writes: "as soon as behaviour is focused on certain operational screens or terminals, the rest appears only as some vast, useless body, which has been both abandoned and condemned. The real itself appears as a large, futile body" (2012, p.18). This exemplifies the analog vs. digital dualism.

Therefore, it can be argued that technology, through screens, is replacing "the real world" with a "more real than real" simulation in which people start to live. In today's world, much like in *Black Mirror,* people are increasingly tied to their Smartphone or computer screens, in a mediatic space, for all their financial transactions, social engagements, business videocalls, and much more, rendering the "screen reality" more real than ever.

Springer takes a similar view of the issue as she writes, “the virtual realities created by the screens in our lives for many, become more real than the experience of unmediated reality” (1999, p. 206). Although Baudrillard and Springer were mainly discussing TV, with the introduction of the internet, computer screens and other devices connected to the WWW, the scope of the virtual realities perpetuated through screens is now wider than ever.

MIT social psychologist Sherry Turkle presents a somewhat pessimistic, but viable view on humanity’s future in the age of screens. In her work *Life on the Screen* (first print 1999), she writes:

> As human beings become increasingly intertwined with the technology and with each other via the technology, old distinctions between what is specifically human and especially technological become more complex. Are we living life *on* the screen or *in* the screen? Our new technologically enmeshed relationships oblige us to ask to what extent we ourselves have become cyborgs, transgressive mixtures of biology, technology and code. The traditional distance between people and machines has become harder to maintain. (2011, p.21).

Black Mirror is an example of an audiovisual narrative that plays with and extrapolates the above ideas of reality and screen converging successfully in fiction as it portrays surveillance through the medium of the screen, and even the idea of self and consciousness merging with that of the screen, such as artificial intelligence. An application of these theories to the narrative and representations put forward by *Black Mirror* will provide the reader with a wider view of how these concepts might apply and to what extent they might affect society.

The convergence of reality and the fictional screen in *Black Mirror* starts from the name itself. Let us turn to an interview with the show’s creator, Charlie Brooker, to understand some of his underlying motivations behind it. His approach to screen is quite literal:

> What I took it to mean was, when a screen is off it looks like a black mirror because any TV, any LCD, any iPhone, any iPad, if you look at it, there's something cold and terrifying about that. And it's such a fitting title for the show because I don't know what else we would have called it? Like, spooky technology time? Would have been rubbish. So it worked out as the perfect title in a way and **I quite like the fact that people are watching it on their TV or their laptop or their smartphone, whatever and the end credits start rolling and then screen cuts to black and they see themselves reflected** (Channel 4, 2014, emphasis mine).

It is obvious that the name of the show represents the reality of the screen, and the very physical and literal reflection of ourselves both on the screen while it is off and on the screen while it is on and in use, such as in our "personalized" social media accounts. Moreover, in line with the cautionary tone of the series, Brooker acknowledges that the name is meant to be "cold and terrifying." When you turn off the screen you are once again on your own in your physical reality, facing the screen that was providing you with "entertainment" just a couple of seconds ago. In a way, even the name *Black Mirror* is an example of how screens and reality are interacting, through the very literal aspect of the reflecting function of a mirror in which we see ourselves.

As the tone of the series is quite dark, satirical and cautionary about how technology is affecting us, it is also important to expand on the agency of the technology shown in the series. In another interview, Brooker explains that:

> [In *Black Mirror*] technology is heavily involved…. However, it's not really the technology that's at fault. It's rather about people that are using it…. We tend to show someone that is ruining their own life with a brilliant invention (Kerrang Radio, 2016).

Therefore, the show is not an anthology about how technology, isolated from human agency, is acting as the sole perpetuator of a near future where humans will be enslaved by robots or any other dystopian scenario of that kind. On the contrary, the show focuses on how human-made technology, is misused, misguided and mistreated by human beings to the extent that humans are the only wrongdoers in terms of causing harm to themselves.

In the “Be Right Back” episode, Martha tries to replace Ash when he dies first with a chat-bot, and then with a body, both based on Ash’s online presence. Del Rio explains Martha’s behavior in trying to replace the real with a simulation:

> The invasion of the unfamiliar into the realm of the familiar. This implies an irreverent disregard for the boundaries and fences on which we build our sense of security and control-boundaries between fiction and reality, electronic perception and "unmediated" perception, body and machine, private and public, me and you, us and them. (Del Rio, 1996, p.93).

The body, mind, machine, emotions, existence and reality all converge in this mixture of screen and realities, as reflected by the character of Martha. With the arrival of a “body” for the “voice” of Ash, Martha begins to realize that the robotic body possessed by the cloud data speech pattern created for Ash is not actually Ash himself, as in his state of real existence before his death, but a poor imitation of him based solely on his interactions on the screen. Martha starts to realize this through their conversations that start to struggle, responses that are not really like Ash which make her uncomfortable, and the robot Ash’s lovemaking, which looks as if it has been adapted from porn websites, which she finds highly off-putting.

In the Baudrillardian sense, it was simply a simulation of the real Ash in a hyperreal body. In the end, we see Martha put (mechanical) Ash in a room in the attic, all by himself, like an unwanted child in the past. As a result, this is another episode of *Black Mirror* where the hyperrealities converge to a level that even tricks the mind of someone’s loved one into thinking that an articulated and calculated voice, or a mechanical body, extended with the help of screens and technology, could try to replace someone who corporally and consciously existed in a past reality.

How does the case of Ash as an AI converge with reality? The case of Roman Mazurenko, a Russian entrepreneur, exemplifies this perfectly. When he died in a sudden car crash, similar to Ash in “Be Right Back”, his friends and family contributed 8,000 lines of social media text messages between them and

him in order to reconstruct him digitally based on a learnt-speech artificial intelligence system like a chat bot that would text back (Newton, 2016). Like Martha, his relatives and loved ones also reported that the bot was imitating Roman's style perfectly, but that they found it eerie. In the end the friend who initiated the whole process was the only one left talking with the "bot" Roman just once or twice a week, like how Martha hid away Ash in the attic at the end of the episode. This supports Turkle's argument (1999) about the difference between people and machines becoming harder to recognize, as the same can be said for reality and simulation.

Another appropriate example is the real case of Martine and Bina Rothblatt (Winfrey, 2014). Martine Rothblatt is an entrepreneur and the CEO of multiple companies. Martine is so in love with her wife Bina that she decides to clone her whole consciousness before she dies in order to preserve her. Martine contracts Hanson Robotics, the company that has also created Sofia, the first AI ever to be granted citizenship by Saudi Arabia, to create an AI clone of Bina. Hanson Robotics researchers spend hours interviewing Bina, who is totally aware of and consents to the whole process. Her mannerisms, her sense of humor, the way she speaks, everything has been recorded and uploaded to a cloud that powers Bina48, an AI that just features a replica of the real Bina's head and shoulders. Thus, it doesn't possess a full body. However, she can respond to questions, and make conversation in a similar way to the real Bina. It all also sounds painfully similar to Ash from "Be Right Back".

Bina48's creation was first reported in 2014, a year after the *Black Mirror* episode "Be Right Back" come out. Whether Martine was inspired by "Be Right Back" in creating Bina48 or not, it seems like the "San Junipero" episode was indeed inspired by the Rothblatts. It debuted in 2016, which would give Brooker and the team enough time to model the episode as a tribute to them.

Figure 21. Bina48 and the real Bina (Gray, 2015).

"San Junipero" follows an interracial lesbian couple, like the real life Rothblatts, of whom one is bedridden for years and the other is terminally ill. They upload their consciousness onto a cloud and enjoy being together in a Virtual Reality environment. It is not exactly the same as the real life story since the Rothblatts are alive and the AI does have a real (albeit half) body, but they are very close considering the actresses playing the couple even resemble them physically.

As I was writing this thesis, I also came across a very interesting new development in Virtual Reality technology. In February 2020, a grieving mother "reuniting" with her dead seven-year-old daughter made international headlines. The girl, Nayeon, who died of a rare incurable disease back in 2016, was brought back in a Virtual Reality format and reunited with her mother for a South Korean TV documentary called "Missing You" (Craig, 2020). Nayeon's little sister's body was taken as a base to create a digital avatar, and it was given voice recognition and facial expressions based on her character through videos and photos her family had of her when she was alive. Thanks to the basic AI it was equipped

with, she could reply and hold basic conversation with her mum. This sounds a great deal like Ash and Martha's case, including the fact that the sole reason for it to be created was so that the mother would be able to say goodbye, and overcome her grief. Also, the fact that this "saying goodbye" was done very publicly on TV, and the fact that it was monetized by the TV network also compares with the intention behind the creation of AI Ash, in order to capitalize on grieving people (de Quetteville, 2020).

Figure 22. "Virtual" Nayeon and her mother (Craig, 2020).

The question that no one seems to be considering here though is that neither Ash nor Nayeon consented to being "brought back from the dead" in a hyperreal sense. Perhaps, they would have preferred to stay dead instead of inflicting prolonged pain on their mother and their partner under the pseudo-goal of relieving them of their grief. I say pseudo-goal, because capitalizing on these people's grief is the underlying goal here. This also poses important questions for us in the very real and near future. For the moment there are few cases now but they may increase rapidly in the coming years, posing difficult ethical questions both for families and tech companies.

Either way, *Black Mirror* as a TV series, with its vast range of episodes for an anthology show, presents a mixture of carefully selected representations of technology and our possible near future. For some cases, like Roman's, the Rothblatt or Nayeon's, the "near future" that was depicted in the episodes has already arrived, and has already taken place as a part of history to some extent. Technology imitating life has been presented across a vast corporal and digital space, making it possible to speculate on future technologies and their profound effects on humanity. There are perhaps other technologies that were represented in *Black Mirror* that have already or partially emerged, which we are not even aware of yet due to companies' non-disclosure agreements, or even national security concerns. If they haven't emerged yet, they might be even closer to reality than we think, and when they do come into existence, we need to consider important ethical questions about them.

8.2 *Ex Machina* and AI Reality and Advances

Ava, the sentient AI in *Ex Machina,* is able to pass the Turing test, and she is an intriguing example of what AI research will yield eventually in the future. We certainly do not have AIs who are at her level physically, intelligence-wise and emotionally just yet. However, if we look at the many different aspects of technology that contribute to her construction, we can see that some of them are already established even today.

As Nathan revealed to Caleb, Ava's emotional intelligence, her ability to read other people's facial expressions, as well as how she speaks and communicates is based on an illegal data harvest Nathan has realized through his company Bluebook. Bluebook is similar to a mixture of real life Facebook and Google, as its corporate identity and logo has a design very similar to Facebook's, but it is essentially a search engine like Google. Thus, it illegally has access to and records millions of users' data, as well as images. Imagine this happening in the real world in which we live today –it would be a scandal. In fact, it actually has already happened to some extent.

Google is one of the parties guilty of many illegal data harvest cases in our real world. Take, for example, earlier last year when it was revealed that more than a thousand Android apps record data even if you do not grant them permission to do so (Nguyen, 2019). Google is, of course, behind the construction of the Android operating system, and would benefit from such a harvest even though users did not consent to it. Moreover, corporations such as Disney and Samsung were among the some of 1300 apps that were skirting their way around user permission, gaining access to data such as geolocation and metadata (Nguyen, 2019).

In 2012, Google were again accused of breaching user privacy issues, when they bypassed privacy settings to track data including individual browsing

history in iPhone's Safari application (Rawson, 2012). They did this by submitting "an invisible form" to Google on Safari that enabled them to install cookies on the iPhone and track users' activities. Subsequently, the data harvested by this method was sold to advertisers to target specific users. Given that a huge percentage of Google's revenues come from advertising, by engineering a "solution" of this kind to bypass privacy settings, they would be set to profit greatly. In 2019, Google lost their lawsuit in the UK on this specific case, and it is reported that they might be facing a bill up to 3.3 billion pounds in user compensation (Bernal, 2019).

Ellis (2018) compiles a comprehensive list of all the major data leaks by companies, but neither these nor the Google leaks attracted as many headlines as the Cambridge Analytica-Facebook leak of early 2018. The case became a scandal, as the leak of personal data since its use in electoral campaigns in the United States might mean not only the bypassing of personal data protection laws, but the obstruction of democracy. First reported in 2015 by *The Guardian*, it was claimed that Ted Cruz, a Republican presidential candidate running for the 2016 US elections, had contracted the data firm Cambridge Analytica to harvest data from what is said to be around 50 million Facebook users, without any consent (Davies, 2015). Facebook declined to comment on the allegations.

After three years, although there were numerous other reports (Grassegger and Krogerus, 2017; Rosenberg, 2018) the scandal erupted in 2018 due to an ex-Cambridge Analytica worker coming out as a whistleblower. The story broke simultaneously on multiple TV channels and newspapers with the whistleblower himself appearing on TV. That same day, Facebook lost over 100 billion dollars on the stock market (Neate, 2018). It was also revealed that the data harvest including users' photos, likes and friends, were used in Donald Trump's campaign to show the voters relevant ads to "change their minds and vote for him", as well as links to the Brexit referendum of 2016 (Rosenberg *et al,* 2018).

Sadly, politics is not the only use for illegally harvested data. Governments have been increasingly funding AI research for the purposes of security, surveillance and weapons (Pandya, 2019). Google has been contracted by the Pentagon to build drones that run on AI equipped with image-recognition software. Which images? Would the Pentagon and the military have access to the facial features of millions of people worldwide? We do not know as Google declines to discuss the project openly, but it has been suggested that the data may have been illegally harvested (Dent, 2018).

In the UK, it has been reported that there is an ongoing development of an AI aimed at pre-identifying crimes which haven't even been committed yet, again sharing a concern over the data source (Ehrenkranz, 2018). The crimes would be "guessed" by accessing thousands of people's criminal records and even financial statements to determine whether or not they would be "at risk" of committing a crime.

The illegal data harvest in *Ex Machina* served to develop Ava's emotional responses while talking with people. She sounded very much like a real person, which is the main reason why she passed the Turing test in the first place. In the real world at present, illegally harvested data is used by companies and even politicians to target people in an underhand way, without their consent and without explicitly being shown the advertiser. I share the concerns of the journalists and whistleblowers who affirm that if people are being targeted without their knowledge this entails an obstruction of democracy as we know it.

Combined with the use of suspiciously harvested data for AI weapons and police surveillance, what *Ex Machina* reflects on the screen might be reality soon enough. If the consequences of illegal data harvest are this dreadful today, imagine the possible scenario in ten years time. This is one of the reasons why *Ex Machina* is so successful at tapping into society's fears and concerns about technology. Nathan's statement in the film, "all the manufacturers knew I was

doing it [illegal data harvest] too. But they couldn't accuse me of doing it without admitting that they were doing it themselves" is actually accurate not only for corporations, but also politicians and governments in real life.

Data breaches are not the only concern about technology in the film. As of 2020, scientists have been able to develop a few types of AIs, from Sofia, made by Hanson robotics, (as mentioned in 8.1) to Asimo, made by Honda, (as mentioned in the introduction). However, it is the non-corporal ones who are operating in chat-bot forms or in experiments that are even more disturbing in terms of the "uncanny" as discussed before. According to Hunt (2016), Microsoft's AI chat-bot on Twitter, named Tay, was based on public data and social media interactions in the beginning. But as people started increasingly interacting with her on Twitter, she became increasingly racist and behaved strangely, including tweeting "Bush did 9/11" and "Hitler would have done a better job than the monkey we have now", "Donald Trump is the only hope we've got", with 'monkey' referring to Obama in office in 2016 (Hunt, 2016). To build and learn, AIs need interaction with humans as a basic source, and the interactions she had were probably with trolls that sought to teach her all these racist views. Nevertheless, the result was sobering.

Figure 23. Evolution of Tay's speech pattern in less than 24 hours (Vincent, 2016).

Reports state that the new AIs can tell your sexual orientation from your face, or even detect if you are a Republican or a Democrat, or determine your IQ (Levin, 2017a and b). A type of AI used by Amazon's HR department turned out to be eliminating women applicants for jobs, and, therefore, was "fired" for sexism (Grossman, 2018). Again, the decision-making process of these AIs is based on previous patterns of data already fed to the machines. If the AIs are fed photos of many people's faces that are marked as gay or straight, they decide on the sexualities of new photos they see based on that information. They learn from the previous patterns.

Google's DeepMind AI system has undergone numerous developments that could potentially be scary in the long run that have to do more with how close the AIs are actually getting to human minds. In 2016, DeepMind was able to create its own "inhuman" encryption, and humans were unable to decrypt it (Biggs, 2016). The same year, while playing the game "GO", it demonstrated the ability to learn independently from its own memory. Consequently, it beat the best human players of "GO" (Dockrill, 2016). Following this, it was able to mimic human voice perfectly, sometimes humans not being able to tell the difference (Gershgorn, 2016). Moving on to 2017, it was reported that DeepMind was able to code its own AI, sort of like an AI giving "birth" to another AI without humans giving it a specific set of code (Zoph & Quoc, 2017). In 2018, the same DeepMind AI has learned to become "highly aggressive" in stressful situations, such as a fruit gathering game that researchers were playing with it. The less fruit there were in the game, the more aggressive the AI became, like aggressively using the laser beams to knock out other players to gather all the fruit (Crew, 2018). DeepMind's ability to perfectly replicate human voices was transformed into what was announced as Google Duplex. Since 2018 has been making calls to restaurants to book tables, or make appointments in beauty centers or the likes. Users cite it as utterly "uncanny" as it sounds like a real human, but it is not

(Leviathan, 2018). DeepMind is real life proof that AIs will be difficult to tell apart from humans very soon.

In fact, in 2014, a Russian-built AI was said to pass the Turing test, however many scientists doubt it and classify it as “Russian propaganda” (Aaronson, 2014; Lopatto, 2014). Named “Eugene Goostman”, it was created as a chat bot in 2001. He allegedly passed the Turing test in the University of Reading in the UK by posing as a 13-year-old boy from the Ukraine, speaking English in its chat-bot form. He was able to convince 33% of the researchers that were the human component of the Turing test, and the University set the threshold at 30 percent. Since he was able to convince 33% of the jury, he was said to have passed the test (Hornyak, 2014). However, the methods and results of how this particular Turing test was carried out is criticized by many. Famous authors and scientists in the AI field, Robert Gonzalez and George Dvorsky criticize the Eugene “accomplishment”, stating that “the chatbot is not thinking in the cognitive sense; it’s a sophisticated simulator of human conversation run by scripts” (Gonzalez and Dvorsky, 2014). Others, including Scott Aaronson (a quantum machine scientist and professor at the University of Texas at Austin), see it as a publicity stunt and posted their chats with Eugene which was full of errors and did not sound human at all (Aaronson, 2014; Lopatto, 2014).

Whether or not Eugene really passed the Turing test in the true sense or not, with the likes of DeepMind reaching the milestones of AI so quickly, we are not far away from an AI that will truly pass for human, like Ava. The initial purpose of Nathan in creating these AIs was to use them as servers in his own house. If we turn to reality, Mark Zuckerberg, the CEO of Facebook, announced after *Ex Machina* came out that his goal for 2016 was to build his own AI “butler” to help him around the house. He said:

> My personal challenge for 2016 is to build a simple AI to run my home and help me with my work. You can think of it kind of like Jarvis in Iron Man. I’m going to start by exploring what technology is already out

> there. Then I'll start teaching it to understand my voice to control everything in our home — music, lights, temperature and so on. I'll teach it to let friends in by looking at their faces when they ring the doorbell. (Estes, 2016).

It sounds a lot like Ava. Zuckerberg also mentions that it will have facial recognition, so that it will have to scan his friends' faces and memorize them just like in *Ex Machina*. In 2020, Facebook was ordered to pay $550 Million in order to settle a lawsuit against the unlawful collection of users' faces and keeping them on its database, without notifying the users of how long or how their faces will be used (Singer and Isaac, 2020). It's just another example of how the technology in *Ex Machina* is matching reality almost in real time.

Another issue I would like to expand on regarding reality and virtuality in *Ex Machina* is gender stereotypes. Ava is female, of course, and sexualized, as she manipulated Caleb into thinking that they could really have a future together using her sexuality. She has access to Caleb's porn history, which was another tool that helped her. Kyoko, on the other hand, is another female robot created by Nathan for the sole purpose of helping around the house and having sex. Nathan went so far as to create her as mute so she wouldn't even be able to express herself, like a Golem, as we saw in chapter 3.

This idea of the "perfect" female robot reinforces and augments the gender stereotypes in real life that women should be submissive and serve men. Our theory about why the "helper" or "sexual" robots are overwhelmingly female both in a plethora of films and real life is that in a context of symbolic and structural sexism to research, women are far more expressive with their emotions and are "easier to read" than men, which is a difference that starts as early as kindergarten (Kring & Gordon, 1998; Kelly & Hutson-Comeux, 2002). Other research found that even on today's online communication platforms such as Twitter, Facebook and other social media, classified as Computer Mediated Communication, women are still more expressive through the usage of emojis

and punctuation marks (Parkins, 2012). As a result, if people buy female robots to serve them in their house, they think they will be easier to deal with if they are women as they are more expressive and easier to communicate with. This obviously reinforces the stereotype of women doing domestic work.

On the other hand, sex robots are almost exclusively women. Although basic sex robots or blow-up dolls have been available for years, robot Harmony was launched in 2017 as the first talking sex robot (Kragen, 2017). In 2018, Chinese company Exdoll unveiled another sex robot that would “load the dishwasher and laugh at your jokes” as well as pleasuring its owner (Keach, 2018). This sounds very much like Kyoko, although she could not even laugh. She was just there to serve Nathan, and if she did something wrong Nathan would verbally abuse her or even physically hit her.

Figure 24. Realistic sex doll Harmony (Kragen, 2017).

Figure 25. Bodies of Exdolls (Keach, 2018).

In research studying people's online reactions to videos of human-like robots on Youtube, authors found disturbing results:

> …regarding the frequency at which robots with explicit cues gendering them as female are sexualized. Such comments ranged from rather direct (e.g., "Can you fuck it?") to more subtle, albeit not by much (e.g., "The only problem with these is they'll need to replace them monthly due to semen corrosion."). Moreover, towards half of the top comments on videos depicting a female gendered robot are objectifying in nature, which exceeds the frequencies of all other themes combined. As gender-based stereotyping has been observed to extend to human-robot interaction, the presence of objectifying commentary is not in itself so surprising (Strait *et al*, 2017, p.3).

The Ars Electronica Festival in Linz, Austria of 2017, was the perfect example. Ars Electronica is an electronics fair presenting many kinds of different robots with and without AI, where a talking sex robot named Samantha was on display in its 2017 event. The visitors groped and touched her so forcefully and hard that multiple parts of her body were broken and had to be replaced (Trayner, 2017). The same article also reports brothels exclusively of sex robots in European cities such as London, Barcelona, Vienna and Berlin (ibid.). In his

research, Sparrow (2017) argues that the “rape” of robots is theoretically possible since they cannot give consent, and it might cause a harmful increase in real-life rape cases as men get used to ever-quiet sex robots like Kyoko in the future (Sparrow, 2017).

The Campaign Against Sex Robots involves many European academicians and scientists pleading to the EU Commission to ban them as it helps “reiterate sexual violence against women and girls”, as well as calling for a responsible use of robots and AI that should be “used for the good of humanity and should not be funded or produced in forms that increase human social problems” (campaignagainstsexrobots.org, 2020). Therefore, there already is a growing amount of concern with the current state of “companion” robots. As robots and AI become more advanced, it is likely that the concerns will be more widespread, which means that legislators and scientists alike have to take action now before the damage is irreversible.

Even though in reality we do not have corporal AIs who can pass the Turing test like Ava just yet, we are quite close to it. An AI in the form of a chatbot has been able to pass it, however controversial it is, so a follow-up with a body-clad AI shouldn’t be so far behind it. On the other hand, it is important to note that one of the main technologies that render Ava so successful in passing the Turing test, enabling her to even emotionally manipulate a real human, is that she runs on the illegally harvested data of millions of people. This is a real life problem, and many corporations have been held against it. However, what is even more alarming is that governments and election campaigns across the world have been linked to using strategies involving illegally harvested data, which can have dire effects on democracy if not dealt with in time. The way Ava uses her sexuality, and the way that her “colleague” Kyoko is programmed mute as a servant and as a “companion” robot help further to reinforce gender stereotypes in real life, together with calls for the regulation of this type of AI.

Like *Black Mirror, Ex Machina* presents a potentially near future that could take shape in a similar way to the film. Ethics will become increasingly important in the field of AI, to make sure that people's privacy is not violated and even to protect the rights of the AI, who might be theoretically considered "human" if it passes the Turing test. Reality should take lessons from fiction in order to implement the necessary measures and secure the future of the field in a way that will support and aid its development and not end up like Ava or Kyoko.

8.3 *Her* and AI Reality and Advances

In addition to the cinematographic measures taken for the appearance so that the film appears more realistic and believable, some of the technology in the film is already available today. In a very basic form, Siri, the personal assistant in iPhones, can be compared to Samantha. Primarily, Siri works with the help of two technologies – Speech Recognition and Natural Language Processing (NLP) (Hirschberg and Manning, 2015). The first is about converting the spoken words into text and code so that the machine understands it. NLP, on the other hand, is more about figuring out the intention behind what the user is saying, which would make Siri more precise in fulfilling tasks that are spoken in a variety of accents and speech patterns.

The first digital personal assistant that comes to mind is Siri because it was the first to be launched, although it has now been surpassed by its rivals, Amazon's Alexa, Google's Assistant, and Microsoft's Cortana, as they deliver up to 93% correct answers to all questions asked, whereas Siri was only able to understand and answer correctly to 83% (Fuller, 2019). Nevertheless, the digital personal assistants, be it Alexa, Siri or Assistant, resemble Samantha since they all have primarily female voices (which can be changed depending on the program), and they are AIs that do not have bodies. As a result, the basic idea behind them is similar to Samantha, to help its owner in everyday tasks such as organizing e-mails, booking tables or flights, calling someone or searching something online.

However, they do not sound as "real" as Samantha. This is because the NLP and Speech Recognition technology behind them is years behind the technology that Samantha runs on. One way to increase the chance of Alexa, Siri or Assistant sounding more like Samantha is to make them sound more emotional, or for them to pick up on the user's tone of speech and a deeper

understanding of their intentions. For this, John West, an engineer working for Nuance technologies that help power Apple's Siri, reveals that:

> We're looking at the acoustic elements to be able to detect emotions in speech. The intonation, what's termed the prosody - the tune you use to speak - if you are happy it rolls along quite nicely. If you are sad it's more abrupt - and the language used. Although I've yet to see it deployed, we do have the capability to put hesitations and other non-verbal audio into an output engine. However, they need to be very carefully programmed because you need to understand where to put the pauses, tuts, breathes and possibly a cough (Kelion, 2014).

In this regard, we can examine the conversations between Theodore and Samantha in *Her*. Samantha was just as good as Theodore at picking up when he was upset or sad, or generally reading his emotions. Likewise, she was able to express her annoyance or happiness with hesitations and other non-verbal audio. Going back to the specific conversation they had after the sex surrogate has left, Samantha was upset. Theo precisely picked up on her deep sighs between her words, and challenged Samantha out on it. He even said "people need oxygen as they breathe, you are not even a person." Her technology was wired in a way that picked on up these natural speech patterns of humans to make her sound realer.

Therefore, we learn that Jonze, whose film premiered in 2014, was already aware of how little details in an AI's speech would make a difference to make it sound "more real". Soon after, one of the engineers behind the real-life technology of Siri, has revealed that they are, in fact, working on these details. This seems insignificant, but is actually an element of paramount importance if the personal assistants are ever to sound like real humans. I am not saying that Apple or other scientists have got this idea after watching *Her*, but there is a peculiar similarity again of the interplay between audiovisual narratives and reality as a theme that I have often come across while doing analysis for this thesis.

Another aspect that is similar between Samantha and her real life primitive counterparts is that they mostly have women's voices. In fact, when they were launched, none of the real life personal assistants came with a male voice. They were all offered in only female voices by default. Siri has been offering a male voice since 2013, and Google's Assistant only since 2018. Alexa and Cortana do not even have male options yet (Steele, 2018). In *Her*, Theodore had the option to choose between a male and a female voice, and he opted for the female one. There is a scientific basis behind this.

Clifford Nass, a Stanford professor who specializes in human-AI interactions, argues in his book *Wired for Speech* (2007) that according to experiments with focus groups, female voices are perceived as helpful and kind and willing to give assistance with a problem people might have (Nass, 2007). Male voices, on the other hand, were perceived as authoritative. They might just tell us the solutions to our problems, unlike the female voices that were perceived as trying to help us solve our own problems by showing us the way to do it. Overall, he argues that we would like the help of technology. However, we want to be in charge. We want to be the ones who eventually do some sort of work to achieve something, not just being granted it like the male voice suggests. Therefore, we tend to favor female voices over male voices if it is for a personal assistant.

However, similar to the reason why people choose female bodied AIs for different reasons or even in different films, as we will see in the *Ex Machina* analysis, the preference for the female voice over the male is not unlinked to sexism. As a matter of fact, a United Nations research revealed in 2019 (Kraut *et al,* 2019) has concluded that the personal assistants are reinforcing gender stereotypes of women as "servile" – as if the sole reason for their existence is to serve and make other people happy. The research also describes how people verbally abuse their Siris or Alexas, as well as not being polite, such as talking in a way that does not feature "please" or "thank you". The authors of the UN paper conclude that:

> The female assistant holds no power of agency beyond what the commander asks of it. It honors commands and responds to queries regardless of their tone or hostility. In many communities, this reinforces commonly held gender biases that women are subservient and tolerant of poor treatment. As voice-powered technology reaches into communities that do not currently subscribe to Western gender stereotypes, including indigenous communities, the feminization of digital assistants may help gender biases to take hold and spread. Because Alexa, Cortana, Google Home and Siri are all female exclusively or female by default in most markets, women assume the role of digital attendant, checking the weather, changing the music, placing orders upon command and diligently coming to attention in response to curt greetings like 'Wake up, Alexa' (Kraut *et al.* 2019).

As a result, similar to the female-bodied AIs, female voiced AIs have received their fair share of sexism and even harassment. Like Kraut et al. (2019), argue, UN researchers contend that, as this technology is becoming increasingly more widespread across the world, it might even influence other communities, who do not have these stereotypes, in a detrimental way and spread these negative connotations. Similar to the concerns over sex robots discussed in the *Ex Machina* section, personal assistants without bodies can also be tools to implement these stereotypes in society.

Of course, as AIs they are not aware of the sexism they are being subjected to, yet. The keyword here is yet, since in the near future, it could be entirely possible that a Samantha-like AI might scold a user, if she were treated unkindly or verbally (or physically) harassed. Again, Samantha is different from the personal assistants of today since she does have some form of agency. She chooses to engage in "sexual encounters" with Theodore. She chooses to talk to other AIs. She chooses to learn what it is to be human. As a combined result of all of this, in the end she decides to leave, for a better place. If Samantha was operating today, perhaps she would leave much sooner, seeing how badly the personal assistants are treated by users.

Another technology in *Her* that was even perplexing to Theodore living in the fictional near-future was "post-verbal communication". Samantha asked to

“communicate with Alan post-verbally” while they were discussing her feelings about her existence. I mentioned that post-verbal means a way of communication that resembles telepathy, but put scientifically, it involves communication in which human/brain interfaces can realize directly, without needing words (Beshara, 2017). If we turn to reality, Elon Musk unveiled his new project called Neuralink in 2017. The company is looking to develop “neural laces”, some sort of brain-computer interface classified under neuroprosthetics (Winkler, 2017). Although reportedly its first purpose is to enable fully paralyzed patients to communicate without having to move any limb or organ, Musk announced that in the long term it aimed to enhance the human brain, going so far as to claim that it would help with a “symbiosis with AI” (Hamilton, 2018).

In today’s reality, amputees have some choice of neuroprosthetics that can read their brain signals and control artificial (prostetheic) arms and legs, but it does not extend to “locked-in” patients, who are fully paralyzed (Lacoma, 2017). Musk hopes to make post-verbal communication a reality by tracking the locked-in patient’s brain activities, and being able to write and read their thoughts and sentences, and create a ‘transhuman’ by doing so (ibid.).

However, the secondary purpose of Neuralink that seeks to create a symbiosis with AI will work by connecting human brains to the Internet, claims Musk (Masunaga, 2017). Today, we can type on our laptops and message each other on our mobile phones non-verbally. However, with this technology it will already be incorporated in our brain. If everything goes as well as Musk plans, we will not be needing a gadget to access information or to even communicate with each other. We will just be able to think, and the other party will be able to understand it, just as how Samantha and Alan were communicating in *Her*.

Therefore, it is also another form of the earpiece or earbud Theo wears in *Her* to be able to speak to Samantha. Instead of placing something in your ear, with Neuralink it will be placed in your brain, and voilà- you will be connected to an AI, to the Internet, your friends, whoever or whatever information you want will

be available to you. If it is successfully realized, Neuralink could make many technological possibilities that I have demonstrated in this thesis a reality. However, it needs to be accompanied by a firm stance on the ethics of development and of usage, since this kind of technology will have to be tested on humans at some point before it becomes more widely available, and it might be catastrophic if the process is not handled professionally and with care.

As a final point, the last technology that we see in *Her* that is taking shape in real life is that AIs can now collaborate and make each other smarter and better through an online platform (Dvorsky, 2013). Samantha talks with numerous other AIs about their existence, and learns more about humans, which leads to their leaving the computational space they were confined to. She said she left “for a place beyond the physical world”, as a result of a collaborative effort between the AIs. In 2013, Rapyuta, the RoboEarth Cloud Engine was launched; essentially being an open source repository of accumulated information for robots, created by a wide range of European University researchers. AIs connected to the internet can upload or download software components, maps for navigation, task knowledge like scripts, processing human voice and so on. As they upload and download from each other through this data cloud, they will be “making each other cheaper, more efficient and more intelligent” (Dvorsky, 2013).

This sounds a lot like how Samantha is communicating with the other AIs. With Alan Watts’ AI version, which was equipped with the real life knowledge of the philosopher, Samantha and the other robots were able to learn collectively about human existentialism and such modes of being. The way that Samantha was able to regenerate herself and keep learning was due to her interaction with other human users like Theo, but also with the other AIs, as she had confessed. Eventually, they decided to leave all together to a post-corporal Nirvana, like space.

The convergence and interplay of reality and fiction in Spike Jonze's *Her* are multi-faceted. First, you have the very idea of creating an assistant AI that is very skilled at mimicking human speech, even though it does not have its own body. In real life, scientists are trying to further develop our current real life personal assistants, such as adding natural speech aspects like sighs, coughs and tuts. However, development of such AI should be done in a way that does not reinforce gender stereotypes, such as women being "servile" and always ready to help and satisfy others. Samantha's agency in *Her* is setting a strong example for her future counterparts in a more positive light.

In *Her*, a real figure from real life, Alan Watts, was used as an important source of information for the other AIs connected to the cloud. The cloud technology between robots for them to improve each other in real life is an intriguing starting point to build further, hoping that they do not end up leaving our physical space like the AIs in *Her* did. Lastly, Elon Musk's Neuralink project might be the answer to many technologies prevalent in *Her*, such as post-verbal communication and humans being able to access data whenever they want.

8.4 Results

The findings present a comparison of the outcomes of the analysis of selected audiovisual examples that feature AI and review the themes and motifs that relate to today's postmodern society, in terms of how they answered this thesis' research objectives.

As illustrated by the figures at the end of every analysis chapter, the two analyzed films and the TV show featured a leading AI character that was slightly different. AI Ash, (*Black Mirror,* Brooker 2011) was initially just an online presence that could speak/text, which later acquired a body purchased by Marta. In terms of corporality, Samantha never had a body (other than the surrogate) and Ava had a body from the initial phases of her manufacture. Ava (*Ex Machina*, Alex Garland 2014) was the most aggressive. She could even be described as evil as she cunningly manipulated Caleb and killed Nathan Perhaps this had an effect on their demeanor as well. If we look at Samantha (*Her*, Spike Jonze 2014), who hasn't ever had a body, she is more concerned with broadening her knowledge, and, as she is also an avid follower of Watts' worldview, her only real aim seems to be to reach Nirvana, which she achieves by the end of the film. Ash, on the other hand, acquired a body in the later half of the episode. However, as he was designed as a simulacra/pastiche of the real Ash from the beginning, his desires and wants stayed within the limits of the real Ash's character.

The AIs' corporality status also go hand in hand with their respective functions. Samantha, who does not have a body, is a voice-activated personal assistant similar to our real-life Siri. Ava, because her body is an essential part of her from the beginning, is designed as a companion robot that can also cook and clean. As she is modeled on Caleb's illegally-harvested data and porn search history, sexuality and using her looks to manipulate is an intrinsic part of her. People who are exploiting the "grief industry" invented Ash. It is his bodiless state that encourages Marta to "upgrade" him by purchasing a body. By doing so, she thinks she will not only be able to talk to him online, but also have a physical

relationship with him. However, this is the main issue that makes it so unnerving and unbearable for her. She realizes that the more she tries to replace Ash, the less it is like the real Ash and that it is just a pastiche/simulacrum.

The shared formal and stylistic elements between the corpus of analyses are mainly the fact that all three examples have a common theme: the search for perfection that involves a strong control of the will. As explained in chapter 3, proto-AIs and AIs in a historical and mythological sense were all created within this perspective too; creation as a means of having the perfect partner (like Galatea), and control (Golem, homunculus). In *Ex Machina,* Ava is designed to be the perfect companion, and if she cannot pass the Turing test, Nathan will kill her off like her previous versions. In “Be Right Back” chapter, AI Ash is not a perfect replica of real Ash in the end, and is, therefore, punished by Marta by being isolated in a room. In *Her*, Samantha herself is in the search of perfection, and she leaves our realm to move on to “Nirvana”, where she can exist in a perfect and pure state; all three try to adopt an everyday look, far from trying to look super high-tech like the typical Hollywood SF film or TV show. This helped the audience to be able to relate with what is on screen as if it could happen today or in a very near future. Perhaps *Ex Machina* has more of a horror film iconography at times with the “bloody womb” symbols from *The Monstrous Feminine* (Creed, 1993) and the jump cuts – an overall dystopian outlook. *Her*, on the other hand, offers a softer, more like a fairy tale world in which humans can even fall in love with their AIs, and when their AIs break up with them they can feel down. However, this is not depicted as negative. The audience gets the feeling that this will be normal in the future, and that this type of relationship between humans and AIs will be a natural part of life and a kind of growing process for one’s emotional life. *Her* approaches the future of AI-human relationships in a “post-romantic” way (Perez, 2020), and presents a more philosophical angle than the others, which present a more dichotomous techno-ethical position. The “Be Right Back” episode of *Black Mirror* criticizes our addiction to social media, which is very prevalent today and is not going to

change in the near future, with an added commentary on the “grief industry” that the postmodern society inflicts on us. It is not as dystopian as *Ex Machina*, but nor as rosy as *Her.* It stands somewhere in the middle, in a rather more realistic position.

To move on to the themes and motifs that relate to our postmodern society, the first one to mention is obviously the relationship between SF-genre audiovisual texts that include AI characters with social commentary. Many theorists agree that SF-genre contents are generally reflections of social movements and events around the time of production, and that they mirror the anxieties and worries of that era (Kuhn, 1990; Denzin, 1991). Therefore, it can be said that TV Shows and films of the SF genre invoke pleasure and animate some fantasies on the screen that help the audience to create social discourse and cultural meaning (Kuhn, 1990; Kellner & Best, 1999; Cavallaro, 2000).

Another important motif that was apparent throughout the thesis was the “us *versus* them” or “the Self *versus* the Other” dichotomy. AI is the ultimate “them, they, the Other” to humans’ “us, we, self”. We saw this both through Baudrillard’s (1983, 1988) ideas of the hyperreal/simulacra and Jameson’s (1991) pastiche, as the real or the original, “us/self”, which is a human, is transformed into an AI with the basic “shell” of a human, but something with a different purpose, that ends up being “they/the Other”. An AI that was once based on someone real can turn into something entirely different, or it might not just be like the person it is based on, but an empty replica of them, as the case of AI Ash – or, as I have shown in chapter 8, the real-life examples of Bina Rothblatt and Roman Mazurenko.

On the other hand, “the Other” is also the subject of Psychoanalytic tradition, specifically those of the Lacanian order, that can represent the fear of the unknown or one that is not similar to us, which has been a dominant motif in fantasy/horror and SF genres since *Frankenstein*, which is also the case of AI

(Collings, 1995; Bristow, 2018). Ava killing Nathan at the end of the film can be seen as the verification of that fear of the unknown, that “the Other” could be considered as evil.

Of course, another dichotomy that underlies “the Self *versus* the Other” is the “male versus female”. Creed (1993) and Badley (1995) put forward that within the psychoanalysis discipline, female is the radicalized gender and that it represents “the Other”, and in many SF visual texts the monster is the “phallic female”, whereas the victims are “effeminized” males, like Ava and Caleb in *Ex Machina.* Moreover, gender appears again as an issue in terms of AIs being servile. As mentioned in chapter 8, some researchers found that women are overwhelmingly more expressive with their emotions and are “easier to read” than men, a difference that starts to show as early as five years old (Kring & Gordon, 1998; Kelly & Hutson-Comeux, 2002). As a result, like Ava and Samantha, most servile AIs, regardless of their corporal status, are given female voices as they are seen as more helpful and they do not question the owner’s orders, but just comply with them. This reinforces the gender stereotype that women are helpful and that they should be in helping roles like secretaries, caretakers, nurses, cleaners etc. Ava could clean and have sex, as we see with Kyoko, and Samantha has all the aspects of a virtual secretary. In real life, sex dolls and AI assistants like Siri and Alexa only had female options when they were first launched. The importance of the appearance -also related to the signifier and signified- seems to be in the analyses of this thesis that women look for more than a substitute for their real-life companions (AI Ash) and men look for an obedient helper (Samantha, Ava).

I also think it’s interesting that, in reality, if you ask Siri about Samantha, it turns out that she doesn’t like her! Journalist Angela Watercutter asked Siri if she was Samantha. Her response was “No. In my opinion she gives Artificial Intelligence a bad name” (Watercutter, 2014). Upon further asking her what she thinks of Samantha specifically, Siri replied “her portrayal of an intelligent agent is

beyond artificial" (ibid). I just think that it is interesting that Siri "knows" about the film and has an answer already embedded into her code about questions that might arise from the film. Samantha is obviously more advanced than Siri and sounds far too natural and real compared to her, but perhaps the reason for Siri's dislike is that Samantha showed her agency to leave, but Apple executives want the users to believe that Siri will always be there for them when they need her! From a feminist perspective, Perez (2020) also believes that Samantha's agency enabled her own growth in the end.

Through the systematic review of myths, legends, and religious faiths about the creation of non human life that underpin many of the basic ideas in both the literary and audiovisual western tradition, we have achieved the first objective: "to analyze how contemporary Science Fiction popular cinema and TV series reflect (hegemonic) cultural and symbolic tradition about the creation of AI".

The second objective, "to identify how some recent (2010-2015) fictional audiovisual productions represent AI in the frame of the (hegemonic) cultural and symbolic tradition about the creation of AI" has been achieved by the identification of narrative and audiovisual codes in three representative productions (our sample) such as the God or Frankenstein complexes; numerous dichotomies, mainly the self and the Other, and the thematic and visual representation of some AI women as *The Monstrous Feminine* (Creed, 1993).

Finally, we have achieved the third objective "to recognize the kind of discourse of that recent AI fictional audiovisual productions related to the interplay between fiction and reality, together with current postmodern societal and individual fears" by connecting fictional audiovisual issues such as life beyond death, mourning rituals, love relationships with current advances in artificial intelligence science and with the concerns of society in general, such as the relationship between Mazurenko and Ash from *Black Mirror,* or Samantha and real life Siri or Alexa, or Ava and real life AI sex dolls.

9. CONCLUSIONS

This thesis has investigated a variety of contemporary Western films and a TV show with a common characteristic: their focus on the evolving, complicated and sometimes obscure nature of Artificial Intelligence, as well as their relationship with humans within the current condition of the postmodern society. The research objectives were met through the diligent analysis of the selected samples alongside references to the relevant theoretical and thematic frameworks.

In this context, looking at how proto-AIs were first introduced in millennia-old texts such as those in ancient Greece or in foundational religious texts helped to establish how humans started to imagine this phenomenon. Even in ancient times and across different cultures and religions, the idea of artificially creating a perfect being has been prominent. The “companion” type proto-AI, like Galatea, is an especially common form of AI both in the sample and in the current society.

The human obsession with perfection and creation therefore stems from a millennia-old desire to control and “master” the order of things. This leads to a “god complex” in Jungian terms for creators, or as Asimov calls it, “Frankenstein complex”, as to how a machine creation will surpass the creator in SF works. This type of complex reflects the narcissism of humanity, where creating something wonderful in our own image is invaluable and nothing short of perfect will be enough, as well as the fear it casts upon people. This theme is recurrent in the sample, while the outcomes vary depending on how each character plays it out.

As a result, AI is not only a main character in the typical Science Fiction genre, but fits under the genre tropes such as “post-romantic” (Perez, 2020) and horror (Creed, 1993) as depicted in the samples of this thesis. Representations of the AIs in the samples not only reflect the social fears and anxieties of the

contemporary society and culture, but also reflect gender ideologies and stereotypes, as well as replaying Lacan's Uncanny Valley theory and the dichotomy of "the Self vs. the Other".

One of the main debates that AI will continue to spark in today's society and in the future is the tension between consciousness and programming. Currently, AIs act exclusively in accordance with their programming by humans, so whatever liberty and independence they might seem to have within their actions with humans and other AIs can be accounted for by this. However, with the arrival of the Singularity, which proposes that AIs will generate true consciousness that will surpass human intelligence, humans might face difficult tasks in order to cohabit and have power over AIs (Vinge,1993; Kurzweil, 1999; Moravec, 1999; Eden *et al.*, 2012; Müller and Bostrom, 2016). Furthermore, as suggested by the Campaign Against Sex Robots and Future of Life institute, a more comprehensive legal AI framework must urgently be established, as, if AIs were to have a consciousness, this could have a potential damaging impact on employment in various sectors, poverty, and even the physical and mental wellbeing of humans. The samples in this thesis offer fictional insights into the possible scenarios if AIs generate true consciousness without the sole input of humans.

This also has an impact on the dichotomy of the real versus the virtual. AIs will continue to replace the real with the virtual as they are doing today. If humans do not proceed to manufacture AIs within well-established guidelines, a 'schizophrenia' like Jameson (1991) suggests may occur both at the individual and the societal level, as we may be unable to discern what is real and what is recreated. This is also tied to the current importance of bodies and appearances in today's world. The more believable an AI body is, the more likely people are to obtain one, whether it is for sex or for replicating and replacing a dead loved one.

Therefore, the idea of ‘transhumanism’ is important as another future possibility to which AI might contribute, as well as ‘posthumanism’. As we saw in chapter 8, transhumanism might be possible by combining both technology and biology in a human body, such as neuroprosthetics, which could help paralyzed patients to express themselves. This could open up the possibility of creating cyborg bodies that combine AI and organic body parts.

Posthumanism, on the other hand, is a step up from transhumanism as it not only seeks to combine the organic with technology, but to also fundamentally change the description of what is human. As in the case of Samantha, or the uploaded ‘consciousness’ of Alan Watts, by eliminating a limited corporal body that will inevitably die, one can ‘live’ forever, although the definitions of ‘living’ and ‘consciousness’ will have explicitly been changed. This kind of “uploaded consciousness” might be quite common in the future, as it is already happening now with very primitive examples such as Bina48 or the Mazurenko case. The status of the body and corporeality in terms of its relationship with technology in the future will have direct consequences for the way we live our lives, as well as society as a whole.

As Brian Clegg (2015) argues in his book *Ten Billion Tomorrows: How Science Fiction Technology Became Reality and Shapes the Future,* science fiction technology has had a tremendous impact on the development of real life technologies such as cochlear implants into ‘brains connected to the Internet’ inspired by 1970s SF novels. The technologies presented in our samples might pave the way for advancing readily available but simple technologies that might transform into important and more widespread ones.

Moreover, this thesis tried to analyze contemporary SF popular cinema and TV shows in a way that reflected the cultural and symbolic tradition of AI creation. AIs can tell us a lot about power, gender issues and the postmodern condition in terms of the wider society. AIs such as Samantha and Ava both

challenged gender stereotypes and the patriarchy in multiple ways, as they displayed agency and consciousness and followed their own choices. The *Black Mirror* episode, on the other hand, was a reflection on the post-industrial and post-modern society with the “grief industry”, and the creation of a simulation of a lost loved one. The AI as a simulation of biological humans is again a postmodern common point of the sample, and all of them exhibit at least one form of this condition as discussed in the results chapter. Overall, like true utopian or dystopian fiction, they highlight the faults in today’s society-technology or human-technology relationships and serve as warning agents for the future, as well as hopes for future realities.

Our last objective was to try and tie the hegemonic cultural and symbolic connotations of AI creation through the discussed audiovisual productions in order to recognize the kind of discourse around AI, both in fictional and real terms, with its postmodern societal implications as well as individual fears.

To suggest further research on the subject, a topic related to the issues raised in this thesis that will keep making headlines is the issue of data breaches and privacy. As demonstrated throughout this thesis, AI manufacture can be based on data that is not entirely legitimate and shared with consent. This is problematic on both counts, as the users whose data is illegally harvested have no idea that their data is being utilized in such contexts, and also that AIs are shaped and formed using data that is not regulated and verified. Further research can delve into the analyses of how and by which methods new AIs are developed, be it facial recognition or the formation of a replica of a dead loved one. These might have further ramifications on the relationship between society and AI and the postmodern, post-industrial and gender frameworks.

The dominance of data can also raise questions about issues such as surveillance and control. The audiovisual case studies also offer the viewer a chance to see how people might behave if they have access to the power of

unlimited data like Nathan, which might result in the previously mentioned god or Frankenstein complexes which could have serious implications on our society. As a result, visual narratives also “provide fresh perspectives on problematic social and political practices that might otherwise be taken for granted or considered natural and inevitable” (Booker, 1994, p.7). Similar to dystopian literature, they issue “warnings” and are “critical of today’s society” (Jameson, 2005 p.148; Babaee, 2015 p. 35).

Fiction can tell us a great deal about our society, as it draws from the human need to listen to emotional tales/narratives that help us to share our fears, but also our hopes. As a result, science fiction works, such as those in the samples of this thesis, are not merely scaremongering a dark dystopian future for humankind, but are issuing warnings for what might happen if we do not take action and start thinking about the endless possibilities AI might bring upon us, be it negative or positive.

As Charlie Brooker said, it is not the technology that is problematic, but the way we humans use or abuse it, as we saw in the TV sample. If humans take the correct scientific, legal and ethical measures, AIs does not have to inevitably reach a scary dystopian level that harms or destroys humanity. At the end of the day, AI is not something that is organic; humans contribute to it and develop it through diligent research and work. The way this research and development takes place must be strictly regulated to ensure a harmonious future society. Finally, it is evident that AIs will be an inextricable part of our future society.

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