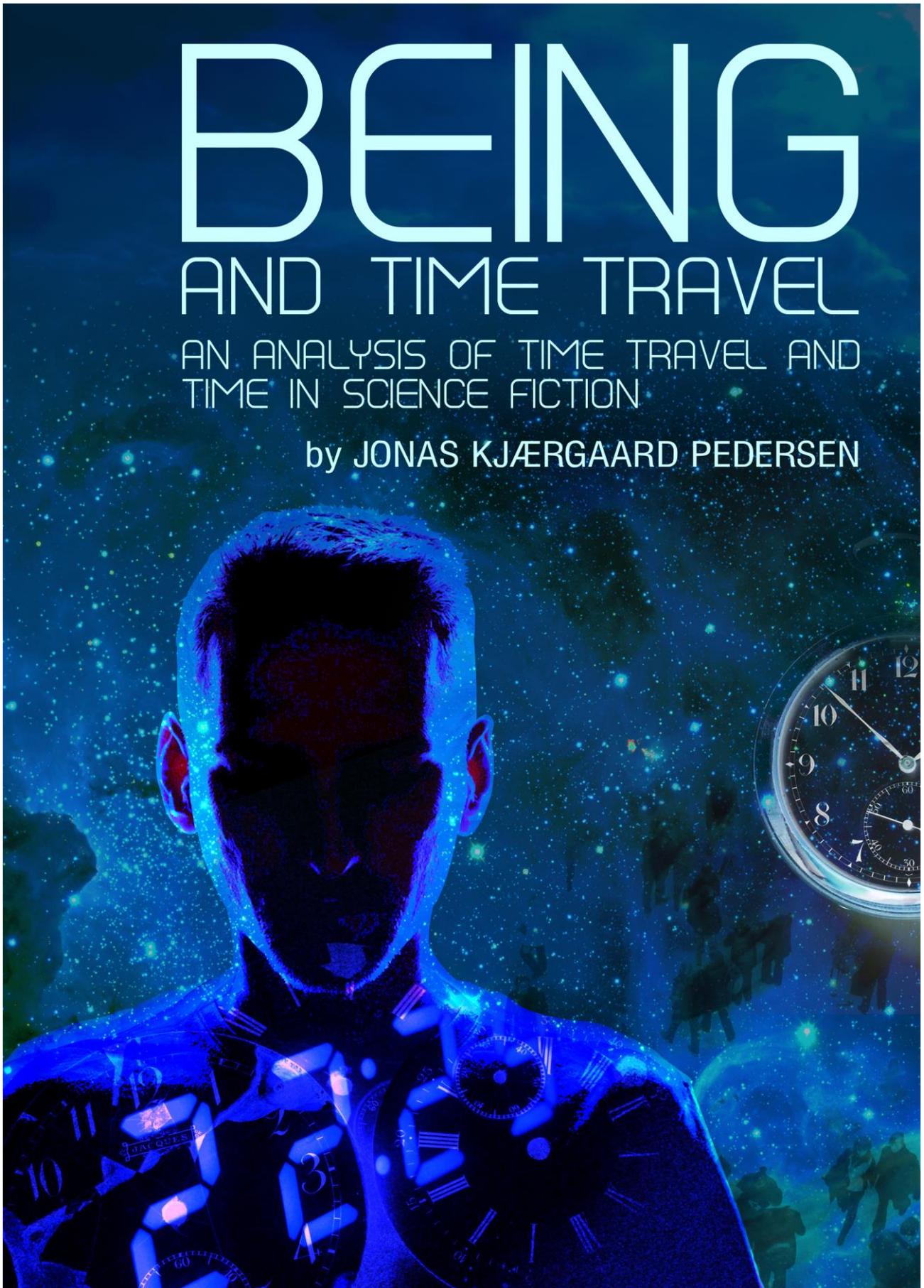




BEING AND TIME TRAVEL

AN ANALYSIS OF TIME TRAVEL AND
TIME IN SCIENCE FICTION

by JONAS KJÆRGAARD PEDERSEN





Abstract

Time travel has since H.G Wells' famous novel *The Time Machine* been an integral part of science fiction. Since the publication of the novel, the complexity of time travel narratives has progressed. This paper investigates the films: *The Time Machine* (1960), *The Terminator* (1984), *Twelve Monkeys* (1995), *Donnie Darko* (2001), *Primer* (2004), and finally the BBC television series *Ashes to Ashes* (2008), to see how the theme of time travel occurs differently in each of these. The paper also investigates how the theme of time travel is concerned with the ontological question of being. Here an understanding of conventional time travel paradoxes is discussed. The analysis of the films and series is based on theory centred on a general understanding of science fiction, apocalypse, time travel, and finally an intersectional angle to investigate, whether a feministic agenda is present in a time travel narrative.

Keywords: Apocalypse, Time Travel, Science Fiction, Emotions, Films, Ontology, Psychology, Intersectionality.



Contents

Introduction	4
Theory	6
Science Fiction as a Cultural System	6
Colonisation and invasion in Science fiction	10
The Apocalypse and the Post Apocalypse	13
The Concept of Time and Time travel in Science fiction	17
Types of Time travel	22
Reasons for Time travel in Fiction	25
Intersectionality	27
Analysis	32
The Time Machine (1960)	32
The Terminator (1984)	37
Twelve Monkeys (1995)	42
Donnie Darko (2001)	49
Primer (2004)	56
Ashes to Ashes (2008)	60
Conclusion	66
Bibliography	69
Journals	69
Fiction and films	72
Webpages	73
Books	73



We all have our time machines, don't we? Those that take us back are memories...And those that carry us forward are dreams.

- H.G. Wells

Introduction

In our perception of the world people usually discuss three spatial dimensions, but beyond there is also the fourth dimension time. Time is still one of the biggest enigmas, for what is time? Many people, such as scientist, philosophers, poets, authors, musicians have asked this question. Is time just something we perceive or merely an illusion? Looking at the general semantics of the English language there are three variations of tense: past, present and future, but is time merely seconds, minutes and hours or is it more than that? How do we handle time, and is it possible to alter time? H.G Wells had in 1895 his science fiction novel *The Time Machine* published where he through fantastical writing made the reader able to experience the awesome journey of the time traveller forward in time. This novel is believed to have introduced the theme of time travelling in contemporary writing and generally to have set focus on the topic, also in science. Time has also been seen as a tool of oppression; George Orwell expresses this in his classic dystopian novel *Nineteen Eighty-four* (1948). *He who controls the past controls the future. He who controls the present controls the past.* This latter quote explains a connection between the use of power and time in order to control a population, this also points out, among others, why an understanding of time is so important. Several philosophers have furthermore discussed time as an important factor of our existence. Especially the existentialistic wave of philosophers such as Camus, Heidegger, Sartre, Nietzsche and Kierkegaard have discussed how time is an important factor in the understanding of the development of our existence.

Besides this, there has for a long time been an interest in finding out how old our planet is. This is present in the beliefs exclaimed in the bible where some people believe that the world is approximately 6000 years old. Contemporary scientific theories, however, suggests that the Earth is 4.54 ± 0.05 billion years old, and that the human race only has been around for approximately 85 million years. All this seems like an awful long time, but compared to the beginning of the universe it is not much. The most frequently discussed theory of the beginning of time suggests that the universe was *created* in a singularity known as the *big bang* 13.82 ± 0.05 billion years ago. According to the theory it also means that, time was *created* at the same stage, since the singularity before and



during the singularity is not scientific observable. The question of time is also relevant in almost every field of science, for example when scientists claim that the universe is infinite, but how is it then possible to explain that the universe always is expanding? Some of the explanations to this question could be multiverses and other dimensions, specified through string theory.

Another more fantastic aspect of time that has been discussed in science and fiction is the ability to travel forward and/or back in time. In our linear understanding of time it is evident to everyone that we are all somehow travelling slowly into the future, which we observe by looking at our clocks. Einstein specified with his famous relativity theory that it is not possible for anything to travel faster than light. However, in recent years scientists such as Stephen Hawking and Kip Thorne have investigated phenomena such as black holes, wormholes and theoretical ideas have been discussed making it possible to travel time. Besides this, faster than light travels and time travelling has for a long time been a discussed topic in science fiction, besides *The Time Machine*, several other science fiction texts have explored the speculative topic of time travelling back and/or forward in time.

With this in mind, this paper will predominantly investigate time travel as a concept and the connection between being and time in science fiction. This will primarily be achieved by investigating several films discussing the topic of time travel. The films are *The Time Machine* (1960), which is based on the famous novel by HG Wells, *The Terminator* (1984), *Twelve Monkeys* (1995), *Donnie Darko* (2001), *Primer* (2004), and finally the BBC television series *Ashes to Ashes* (2008). These films and the television series have been selected since they explore different types of time travel paradoxes and furthermore investigate different psychological aspects of time travelling. To be able to analyse these films a general knowledge on the topic of time travel is needed. This will be investigated in the theory section. The theory section will discuss general markers of science fiction, and hereafter discuss the connection between science fiction and the topic of time travel. Other topics concerned with time travel stories will be discussed such as colonization of space, and apocalyptic theory. Furthermore intersectionality will be elaborated to examine whether feminist theory occurs in stories of time travel. To sum up the purpose of this paper will be to investigate how the theme of time travel and its paradoxes applied in different films and television-series. Besides this, how the theme of time travel is connected with the general understanding of the identity of mankind in a contemporary socio-historical context.

Theory

Science Fiction as a Cultural System

Science fiction is, as the words suggest, a combination of science and fiction. Science fiction is an ambiguous and speculative genre, which purpose often is to explore technologies we cannot use yet or reach places we are not able to reach (Ketterer, 2005, p.246). In dichotomy to fantasy, science fiction has to rely on the probability made possible by actual science. Science can be enhanced to fit a story, but it is never allowed to go beyond what in theory is scientifically possible. Cixin remarks that science fiction is able to explain complex science without putting it into formulas, and in this way make it accessible to people outside the science community (Cixin, 2012, p.25). Besides this, the stories of science fiction can be more or less realistic; this phenomenon will be examined later on in the distinction of *hard* and *soft* science fiction. Besides this science fiction is also a genre, which goes beyond literature. In the article *Science fiction and the Future of Criticism* (2004) Eric S. Rabkin elucidates that science fiction fandom is the oldest of all literary fandoms (Rabkin, 2004, p.458). Hugo Gernsback, who released several magazines and eventually initiated the science community, was one of the main reasons behind the creation of this fandom. The growth of the fandom also meant that the genre became more and more popular. Rabkin furthermore explains that science fiction (...) *is no more limited to science fiction literature than love is limited to love letters. Science fiction is what I would call, adapting McHugh's term, a cultural system, and the future of criticism lies in exploring cultural systems* (Rabkin, 2004, p. 461). Rabkin also explains what defines a cultural system: *A cultural system, as I mean the term, may coordinate a set of typical dramatic situations, recurring elements, even themes and styles, as science fiction does by, for example, the encounter with alien, time machines, wonderment about the definition of the human, and streamlining* (Rabkin, 2004, p. 462). This also means that science fiction occurs in several media beside literature, such as films, paintings, sculptures, music, and video games. Furthermore, James Gunn explicates this system by the way that science fiction is ambiguous and hard to distinguish since it is able to incorporate other genres and themes. He explains that (...) *we can have a science fiction detectives story, a science fiction western, a science fiction gothic, a science fiction love story, or, most likely of all, a science fiction adventure story* (Gunn, 1996, p. 377). Due to the ambiguity of science fiction, parts of the community have tried to define different aspects of the cultural system, one of the tools is the *sf-encyclopedia*, which first edition was released in 1979 and has in recent years been published free on



the internet. The webpage is updated continuously and peer-reviewed by various scholars who are researching the field of science fiction; unlike Wikipedia, which is editable by common people. The webpage contains articles on topics such as publications, terms, themes, authors, and directors connected with and to science fiction. The encyclopedia defines two distinct terminologies of science fiction: *soft* and *hard* science fiction. These two categories are important to comprehend in order to understand the themes of the different stories of science fiction. *Hard science fiction* is according to the sf-encyclopedia a term coined by Peter Schuyler Miller in 1957. Besides this, it also elaborates that *Hard sf is the form of imaginative literature that uses either established or carefully extrapolated science as its backbone*. This implies that the terminology is mainly concerned with the themes of the hard sciences such as black holes, mathematics, faster than light technology, time travel, space flights, physics, and technology. The authors of *hard science fiction* are often, but not always, physicists or concerned with science outside fiction and is thereby qualified to understand and apply science in their stories. Some of the famous scientists who have written or contributed to hard science fiction stories are Gregory Benford, Carl Sagan, Isaac Asimov, Arthur C. Clarke and Kip Thorne. Contrary, there is *soft science fiction*. The sf-encyclopaedia states that: *soft-science (...) is not [a] very precise item of sf Terminology, [it is] formed by [an] analogy with Hard SF, [and] is generally applied either to sf that deals with the Soft Sciences or to sf that does not deal with recognizable science at all, but emphasizes human feelings*. Since it is an analogy to *hard science fiction* it means that *soft science fiction* mainly deals with the soft sciences. These are topics such as anthropology, psychology, philosophy, intelligence, perception and sociology. A frequently used scenario in *soft science fiction* is dystopia which is seen in stories such as George Orwell's *Nineteen Eighty-Four* (1949) and Aldous Huxley's *Brave New World* (1932). The sf-encyclopaedia furthermore emphasises that the distinction between *soft* and *hard* science fiction sometimes is illogical. This means that a story is not limited to be *hard* or *soft*, but is able to mix the two terminologies. This could for example be by mixing soft and hard sciences in a story. However, they are obviously not allowed to go outside the restriction of the genre of science fiction in general.

The Chinese author Liu Cixin, who is mainly interested in *hard science fiction*, remarks in his article, *Beyond Narcissism: What Science Fiction Can Offer Literature*, that one of the benefits of science fiction is its ability to go beyond the human narcissism, which occur in most mainstream literature. Even though the focal point of the article is on literature, most of the details that Cixin explains are applicable on films and other parts of the science fictional cultural system. Throughout the article Cixin points out that many parts of science fiction are centred around macro-aspects. He

lets us know that science fiction, similar to historical literature, frequently uses macro-details to describe the progress of time in the story. Cixin mentions that:

Through its macro-details, science fiction allows authors to sweep across time and space, crossing billions of years and tens of billions of light-years with a simple stroke of the pen, leaving the world and the history described in mainstream literature to appear as nothing more than a tiny grain of dust, hardly worth mentioning. (Cixin, 2012, p.25)

Since macro-details are concerned with time and space, they frequently occur in settings such as time travel stories, for example to describe the events passed by during the journey of time travellers. Another example of macro-details, which does not include time travels, occurs in Arthur C. Clarke's *2001: A Space Odyssey*. Clarke wrote the novel and the script simultaneously, which was made into a film directed by Stanley Kubrick, which means the storyline is similar in both media. The macro-details are used to display the transcendence of the human race from monkeys to space travellers and finally the ultimate transcendence into a higher stage of evolution.

Cixin scrutinize another macro-aspect of science fiction viz. that it has the ability to go outside the limits of conventional mainstream stories which mainly deals with humanity as the narrative species: (...) *we might say that mainstream literature describes a world created by God, while science fiction takes on the role of a God, creating worlds and then describing them* (Cixin, 2012, pp.24-25). He elaborates this with the fact that characters in science fiction basically operate as abstract symbols to develop the greater perspective of the story. Professor Virginia F. Bereit agrees with this point of view by implying (...) *[i]n science fiction books where scientific technology (gadgets, robots, computers, principles, theories) and melodramatic events are emphasized, character tends to be subordinate to plot and setting* (Bereit, 1969, p.898). Cixin defines two ways in which characters are portrayed in science fiction. The first one he calls the *species portrayal*:

The first is by superimposing the image of an entire species over that of an individual character. Unlike traditional literature, science fiction can describe many civilizations beyond that of humans and it can endow these civilizations and the beings that created them with distinct characteristics. These species can be aliens or distinct human communities in outer space. (Cixin, 2012, p.27).

To this he furthermore implies that most mainstream literature is limited to one planet (Earth) and one species (humanity). This perspective of characters will be further elaborated in the section of

colonisation and invasion in science fiction, to point out how aliens are an essential part of science fiction. Cixin defines the other way of characters as *the literary image*: (...) *the literary image can be an environment or a (sic) entire world. The worlds of science fiction can be stars and galaxies, but they can also be parallel universes and, increasingly in recent years, virtual worlds existing only in a computer's memory* (Cixin, 2012, p.27). This kind of character structure occurs when a character is able to explore a new world, and thereby becomes the spectator of new strange phenomena. Since Cixin is not interested in *soft science fiction*, he leaves out the fact that characters in cases of this terminology often are structured around emotions and psychological aspects. This is in most cases with Earth as the planet where the main plot takes place. However, this does not mean that the character structures explained by Cixin are useless in *soft science fiction*. Bereit, on the other hand, has a more in depth explanation of the structure of characters in *soft science fiction*:

Science fiction that is philosophical in nature [i.e. soft science fiction] contains character that is dynamic. Although scientific technology and events assume a significant part of the story development in this type of science fiction, they do not overshadow character. It is because of the character that technology and event are necessary. (Bereit, 1969, pp.898-99)

Science fiction is often juxtaposed to fantasy, and even though they are quite different they share some mutual traits. A chief trait they have in common is world building. Since science fiction is considered fantastical fiction, the authors are able to create worlds or even alternate reality. By creating a world the author is able describe topics such as undiscovered/unknown planets, alien races, enhanced technology, languages and robots. In contrast to fantasy, science fiction is not allowed to create worlds outside the possibility of scientific possibilities. Beside this Cixin remarks that science fiction is content-based rather than form-based:

Asimov lets us realize that science fiction is a content-based form of fiction, not a form-based one. In a sf story, form is a container to carry and serve the content. Works that surpasses the content may be very good stories, but they are not science fiction. (Cixin, 2013, p. 29)

This means that the world created in the story or stories has to fit in with the content of general science to be able to fit into the world. Cixin furthermore underlines that the creation of a world often takes place in the context of a single story.

A trope often used in science fiction stories is that of alien invasion or colonisation of distant planets and even solar system. The following section will elaborate on how aliens are used in science fiction, and how colonization takes place in different setting, be it by human beings or alien races.

Colonisation and invasion in Science fiction

Alien: (to somebody/something) strange and frightening; different from what you are used to. (Oxford Learner's Dictionary)

Throughout the years, humanity has faced several stages of discoveries and explorations in the universe. Before the landing on the moon in 1969, humanity was limited to explore new places on Earth. The landing on the moon emphasizes how important the role of technology is in order to explore alien places. As the definition of the word alien in the Oxford learner's dictionary suggests, the meeting with the unknown is often strange and frightening to encounter. Throughout the imperialistic-period, the Western world was considered the *superior race* due to the advance in technology. In 1882, First Lieutenant George S. Wilson who was concerned with the reservation of the alien and inferior *Indian-race* wrote an essay called *How Shall the American Savages be Civilized?* In this essay, Wilson proclaimed that:

(...) there are "three courses" beings of a "superior race" may take when confronting "inferior and barbarous" peoples: "exterminate the savages," "let them alone," or "accept them as dependents of the government" (597). (Grewell, 2001, p. 25)

He further remarks:

"Suppose some superior race should come from another planet,"(...) "and find us as inferior and barbarous, according to their standard, as we consider the Indians, when measured by our standards. And suppose they should conquer and put us on reservations" (597). (Grewell, 2001, p. 25)

It can be derived from the passages that the term of colonization is an analogy to the anxious feeling of being in control or being controlled. This statement is emphasised by the terms of being superior and inferior beings. Since there are no beings on Earth superior to the white western man, according to Wilson, the fear of aliens from outer space is used in order to understand the position of the savage Indians and how they will behave under extreme circumstances. Greg Grewell examines the topic of

colonization of science fiction in his article *Colonizing the Universe: Science Fictions Then, Now, and in the (Imagined) Future*. In this article, Grewell points out that the plot of a science fiction text in general is not possible without a socio-historical context:

(...)Darko Suvin has shown a science fiction text is senseless without "a given socio-historical context": "Outside of a context that supplies the conditions of making sense, no text can be even read.... Only the insertion of a text in to a context makes it intelligible." (Grewell, 2001, p. 27).

Some science fiction stories that follow socio-historical contexts that have occurred are the film *Predator* (1987) and the novel *The Forever War* (1974) by Joe Haldemann. The narrative of both stories is based on socio-historical aspects from the Vietnam War, which uses allegories from this war as a plot-device. Besides the use of socio-historical contexts, Grewell explains two basic type of plot-projections in alien-contact films:

In very general terms, there are two basic types, and related plot-projections, of alien-contact science fiction films: one inward, one outward; one dealing with alien visitors to or invaders of earth, one chronicling the experiences of earthlings in space (Grewell, 2001, p. 27)

Grewell elaborate on this statement by fitting the basic types into three *master-narratives*, which he calls *the explorative*, *the domesticative*, and *the combative* (Grewell, p.28, 2001). He explains that

In the explorative model, the concern is with the "discovery" of inhospitable, alien wildernesses and with the possibility of human contact with the often unfriendly beings inhabiting these foreign worlds. In these cases, the focus is less on the culture or civilization of these other world beings than on the physical and psychological torment the galactic colonist experiences. (Grewell,p.28,2001)

The foreign world does not necessarily have to be another planet, but it can also be Earth in another time-period, such as the change, which the *Time Traveller* faces in *The Time Machine*. This type of discovery is also similar to the encounter with the natives of the *new world*, which happened when Christopher Columbus rediscovered America in the 15th Century. Grewell further remarks that *the explorative master-narrative* is in line with what the Puritans called *the errand into the wilderness* (Grewell,p.28,2001). *The domesticative master-narrative* is concerned about establishing a home in



an alien world, be it colonies, small settlements or outposts. Grewell points out that *[i]n these cases, confrontations with unusual environments and aliens are often more deadly, as there seems to be something universally opposed to successful human visitation and occupation of alien worlds* (Grewell, p. 28, 2001). Grewell also emphasizes that in both of these narratives the number of human beings is relatively small and that the primary goal is for human beings to seek and colonize *new worlds* (Grewell, pp. 28-29, 2001). The final *master-narrative: the combative* is more action-packed and violent than the two others are and is as the name suggests mainly concerned with combat between two or more civilizations. The scale of the combative is often far bigger than the other narratives and attempt to make the universe mapable. Besides this, it is often based on historical battles such as the battle of Troy and the Vietnam War as contemplated earlier (Grewell, p. 29, 2001). A recent example of the *combative narrative* is seen in the video game *StarCraft* (1998) and *StarCraft II* (2010), which takes place in a distant future. The game is concerned about the battle between three races: *The Terran, Protoss* and *Zerg*. These three races all represent a part of colonialism and the general stage of evolution in biology and technology. The *Zerg* are the savage and malignant race, often referred to as the *swarm*, they try to conquer the universe, and are most similar to a virus or insects controlled by a hive mind. The *Terran* is mainly concerned with humans outside the overpopulated Earth, and are similar to the western civilization in colonialism. Finally, the *Protoss* is the superior and high technological race, who try to get back their home planet *Aiur* from the *Zerg* invasion. Besides war, the game is highly concerned with political matters regarding the different races, which for example is observed by division of humanity into factions. Besides the various races, the game is also concerned with several different planets in the universe on a large scale, which fits well into the general use of mapping into the *combative narrative*. All of the races are furthermore related to the human nature of war, since they are all combat-minded creatures. Grewell points out that there are expectations to the generalizations, but the use of colonialism is frequently present in science fiction and especially in alien-contact stories (Grewell, p. 29, 2001). It can further be argued if these *master-narratives* is applicable on stories that are not concerned with contact of alien creatures, but merely the encounter with an alien planet or environment such as Mars or the Moon.

The reason for using a specific master-narrative varies from story to story. The reason for colonization might simply be based on human expansion into outer space, or a global disaster may force humanity to leave Earth. The latter is a theme often elaborated in stories concerned with apocalypse, or post-apocalypse. The following section will investigate the theme of apocalypse and how it is used in several science fiction stories.



The Apocalypse and the Post Apocalypse

So far, the theory has mainly been concerned with neutral and positive aspects of science fiction. A more negative but frequently used narrative in both *hard* and *soft* science fiction is concerned with apocalypse and post apocalyptic scenarios. The theme of apocalypse dates far longer back than the genre of science fiction. The denotation of the word apocalypse frequently occur in connection with negative words such as cataclysm and destruction due to the general understanding from the biblical *Revelation of John*. The theme of apocalypse is thus linked with religion and prophecy. This section, however, will mainly focus on the prophetic stories in a secular aspect in order to fit it into the speculative nature of science fiction. This include themes such as advanced technology, natural catastrophes, war and other manmade disasters. However, since several science fiction stories use religious characters and/or symbols in their plot it is essential to know some of the basic theological aspects of apocalypse before venturing into the secular region. The word apocalypse origins from the Greek word *Αποκάλυψη*, which literally means unveiling and/or revelation. This is also, what the name of the *Apocalypse* or the *Book of Revelation* is based on (Castleman, p. 6, 1994). The *Book of Revelation* is in short a divine intervention, which St. John receives from God, on how the world will end by being cleansed from its sins and finally be replaced with a new Earth and heaven. Throughout the revelation, John informs of the battle between good and evil. The biblical apocalypse is a prophecy described through symbolism, which is also the reasons for its many different interpretations. An even older version of the apocalypse occurs in *The Book of Genesis* in the story of the deluge, where the world is drowning in water except for Noah, his wife and pairs of all living animals. After the deluge similar to *The Book of Revelation* a new and better life is about to begin. This means that the destruction of the world is a foundation for a new and hopefully better world. This is also the focus of most apocalyptic and post-apocalyptic stories, the end of the old world and the beginning of a new.

The sf-encyclopedia states that it was not until the late 19th century that the theme of apocalypse found its way into scientific speculation and that the stories not until recently have abandoned the religious overtones. Scrutinizing Cixin's article and comparing it to the apocalypse, it is noticeable that the apocalypse in the bible and most fictional stories mainly is concerned with the destruction of Earth. Although science fiction has the ability to go outside Earth, most stories regarding the apocalypse are about the destruction of Earth. If the story includes distant planets, they often merely work as metaphors to symbolise Earth. One of the reason is probably due to the persistent connection

with the religious prophecy of the apocalypse. This section will solely be concerned with the end-of-the-world. Furthermore, it is debatable whether in recent times science has replaced the belief in prophecies from ancient religious texts, since it is capable of predicting future events, such as when the sun is going to implode and destroy most of the universe. We do, however, not yet know if the Earth or humanity will die before this happens, which is where the speculations from science fiction are relevant in order to contemplate it as thought experiments. As always the predictions of science fiction have to be realistic.

While the *Book of Revelation* is only concerned with how the apocalypse will happen in the future, several science fiction stories concerned with the apocalypse takes place after the apocalypse has taken place. This makes it possible for the character or characters to remember what actual happened during the apocalypse, or maybe they do not even remember the old world. The author or director is also able to point out what went wrong with the world and in this way include a message to the receiver of the story. The message of the story is often a prophetic warning as in the *Book of Revelation*. Most apocalyptic, and particularly post-apocalyptic, stories are concerned with the genre of dystopia, which also means that the plot of the story in many cases are based on *soft science fiction* by investigating emotions of the characters who experience the apocalypse or the aftermath. The cause of the apocalypse, however, is in most cases based on hard science fiction, such as effects of global warming, the outcome of nuclear war, or natural disasters. Lector Brian Russell Graham has scrutinized, how the destruction of Earth occur, and affects the great chain of beings in several post-apocalyptic stories, and from this, he has made up a taxonomy:

1. *The demise of mankind*
2. *The demise of mankind and the animal kingdom*
3. *The demise of mankind, the animal kingdom, and the vegetable world*
4. *The demise of mankind, the animal kingdom, the vegetable world and mineral life.*
5. *The demise of mankind, the animal kingdom, the vegetable world, mineral life, and the sea* (Graham, p. 25, 2013)

As the taxonomy suggests there are several degrees of destruction in the different stories of the apocalypse. Since a narrative would not be possible without any survivor(s), the word demise primarily indicates that the majority has disappeared. To scrutinize further on this taxonomy a few example of each step will be examined and illustrated through films and novels. The demise of mankind takes place in stories such as *Twelve Monkeys* where a virus has been released which kills



all human-beings except 1%. This leaves the rest of the world and the animal kingdom in harmony. *Twelve Monkeys* is concerned with what has happened before and after the apocalypse. The demise of mankind and the animal kingdom is a scenario that often occurs in *zombie* stories, where a pandemic infects both human-beings and animals. A pandemic of this kind takes place in the film *22 days later*, where human-beings and animals are infected by a virus that make them go into a constant frenzy. An example of the demise of mankind, the animal kingdom, and the vegetable world, which Graham remarks is the most common scenario used in post-apocalyptic stories (Graham, p. 22, 2013), takes place in Philip K. Dick's *Do Androids Dream of Electric Sheep* (1968). In this story, humanity has managed to travel outside Earth, but the atmosphere of Earth is covered with radioactive dust, because of harms from the fictive *World War Terminus*, which cause most people and animals to suffer greatly. In this story, the few real animals that are left have become symbols of wealth, while androids and machines are considered symbols of inferiority. This post-apocalyptic scenario furthermore takes place in stories where AI has enslaved humanity, since they do not need animals, humans or vegetable, most of these have been exterminated. An example of this takes place in *The Terminator*. Graham mentions that the demise of mankind, the animal kingdom, the vegetable world, and the mineral kingdom often take place in apocalyptic stories that are concerned with the deluge; stories such as the film *Waterworld* (1995) and J.G. Ballard's *The Drowning World* (1962) (Graham, p. 22, 2013). It is, however, also noticeable that this scenario also takes place in stories that are concerned with extreme nature phenomena such as *Snowpiercer* (2013), where the entire Earth has frozen solid, probably due to nuclear war, and only few people are left back and has to survive in a huge train that drives on forever. The last step of the taxonomy is mainly concerned with total annihilation of planet Earth, as seen in *Melancholia* (2011) where another planet is colliding and destroys planet Earth. A more humorous example is elaborated in the radio broadcast and novel *The Hitchhiker's Guide to the Galaxy* (1978), where malevolent aliens destroy planet Earth, because it does not fit into their scheme of an intergalactic highway. As clarified through the examples of each step of the taxonomy, it should be clear that each step of destruction is centred on a certain theme and plot structure. Furthermore, it is noticeable that the plot structures of all of the examples mainly are based on *soft science fiction*. This is observed by the way that the foundation of the stories in all of the steps are based on the demise of mankind, which focus is based on anthropological issues.

Through the points of the taxonomy, it is possible to categorise the genre of apocalypse and post-apocalypse in to different internal and external reasons and causes for the apocalypse. To clarify what the terms internal and external implies; internal reasons are caused by mankind, while external



reasons are caused by phenomena outside the capability of mankind. It is, however, important to distinguish between reason and cause since they are not necessarily the same. An example of this is seen the apocalypse in *The Book of Revelation*, where the sins of humanity is the reason for the apocalypse, but God is the cause since s/he wants to *renew* the Human race. Besides this, a common internal reason for the apocalypse in science fiction is humanity's inability to control technology. This can be stories such as when AI takes over the Earth, where ethical questions often are taken into the equation. This scenario occurs in stories such as *The Terminator*, *The Matrix* (1999), and *I Have no Mouth and I Must Scream* (1967). Here the reason is humanity's desire to act as gods and control the machines as slaves. In these cases, however, machines are often the ones who get in power and end up controlling humanity. This issue is purely internal since mankind is the creators of the robots, and besides this, they all fit into the third step of the taxonomy. World war or nuclear war is another internal cause often scrutinized in apocalyptic stories. The degree of destruction in these stories differs greatly; the aftermath of atomic warfare, however, often ends in dystopic societies. Stories of nuclear apocalypse were frequently written during the cold war, since it was a part of its contemporary socio-historical context. There are, however, stories after the end of the cold war concerned with nuclear apocalypse. An example of this is seen in the video game *Fallout* (1997), where the nuclear waste after the war has created mutants and monster. The pollution and distress has left the citizens in turmoil and made most of them turn back to primitive hierarchical structures such as tribes and cults. People who are not part of these societies are left to survive in the wastelands, among mutants, robots, and fierce animals under the principles of the survival-of-the-fittest. In this case, humanity is again to blame for the destruction of Earth due to war and technology in general. The external reasons and causes also differs greatly in the plot of stories. A common external scenario is concerned with alien invasion. One of the first novels to include a plot of extra-terrestrial invasion is H.G. Well's *War of The World* (1898), where malevolent Martians invade London. Another example is found in the film *The Day the Earth Stood Still* (1951). Similar to *The Book of Revelation*, the sins of humanity is the reason why a high technological alien race wants to annihilate the entire human race, if they do not change into a more peaceful way of living. Unlike the story from the New Testament, the aliens are going to do this because otherwise the destructive nature of humanity will become a danger to them and the rest of the universe in the future. Both of these alien invasion end without total devastation of planet Earth. Instead, they function as a warning to humanity that there is something more advanced out there. The reasons of the invasion is different in these two novels, whereas no actual reason is given in *War of the Worlds*, the reason in *The Day the Earth Stood Still* is due to humanity's



destructive nature. Furthermore, the use of alien invasion in the story is used as a metaphor against imperialism as discussed in the section on *colonialism in science fiction*. Another common type of external apocalypse is perceived in stories about natural disasters. In recent times, stories about global warming such as *The Day after Tomorrow* (2004) have become popular, where the reasons of the apocalypse is manmade and nature *strikes* back. Other natural disasters includes meteor strikes as seen in *Armageddon* (1998), dying of the sun as seen in *Sunshine* (2007), or even collision of a rogue planet as seen in *Melancholia*. The former examples include external disasters where humanity actually is capable of making a change through technology, whereas the latter example of *Melancholia*, displays a vision of total hopelessness, which points out how small the role of humanity actually is.

The following section will look into time travelling and a general understanding of time, the theory from this section will be applied in order to look into apocalyptic stories where time travelling is used as a device for salvation.

The Concept of Time and Time travel in Science fiction

On the surface, the question of what time is seems simple or even trivial, since the concept of time is one of the most essential and basic factors of the human existence. The basic understanding of the reality we perceive as our existence, consists of a beginning (birth) and an end (death), which is defined by a lifespan controlled by a definite duration of time. In other words, we are temporal beings, even though the average lifespan in the western world has increased as the general living standards have become better. Martin Heidegger remarks to this subject that *as soon as man comes to life he is at once old enough to die*. However, time is and has always been an unsolved mystery, for what is time? We can measure it on a clock, but is that really all there is to this concept? The question of what time is has been examined scientifically as well as philosophical and cultural. Ancient philosophers such as Aristotle has claimed that time is linked with change and moment. The topic of change in relation to time has been a topic, which modern scientists also have examined. This again leads back to the question of a beginning and an end. To make a theological analogy to the Christian religion, the beginning is signified in the Genesis when God created the Earth and humanity. The end comes with the apocalypse, which again is going to become a new beginning. This idea suggests that the



events in time occur in a closed- and predetermined loop controlled by God. The most acknowledged scientific understanding of the beginning of time is that of the big bang since no scientific measurement is possible before and during this singularity. How time will end is still an enigma, but one theory considers that a big crunch, the opposite of the big bang, will occur. Other another theory thinks that at some point in time a contraction of the universe will happen, causing time to flow backwards. Besides theological, philosophical and scientific speculations on time, fiction has also taken hold of the theme of time into contemplation particularly the field of science fiction. On the topic of time, the theme of time travel, as a *Deus ex Machina*, has been a frequently investigated subject since the publishing of H.G. Well's *The Time Machine* in 1895. To develop on what the basic principle of time travel is; a brief definition is the ability to travel from one time-period to another, be it the past or the future, via a device or machine as in *The Time Machine*. As Aristoteles remarks in his understanding of time, change, or the inability to change things, is always an essential theme in time travel stories. To return to *The Time Machine*, Professor Elana Gomel remarks that this novel not only invented a new plot in fiction but also a new Chronotope. *Chronotope, as Mikhail Bakhtin defines it, is the spatial-temporal configuration of the narrative text, "the intrinsic connectedness of temporal and spatial relationships that are artistically expressed in literature"* (15) (Gomel, p.334, 2009).

The sf-encyclopedia remarks that before the publication of *The Time Machine*, the favoured device for time travelling was through dreams, which made this kind of fiction fantasy based rather than scientifically. Besides this, Albert Einstein figured out in his famous formulas of relativity that it is not possible to travel faster than light, high velocity will make it possible to travel forward in time, but without faster than light speed travelling into the past is not a possibility. Furthermore, Einstein's relativity combines time and space into a united substance known as the space-time continuum, which in contrast to the *Wellsian* understanding of time not only is a fourth dimension (Richmond, p.305, 2001). Facts such as these lead to an argument whether time travelling actually is a part of the science fiction genre. Several science fiction authors such as Stanislaw Lem and Harry Niven have in recent times declined that it is. Lem claims that time travel is "*an intellectual game, fantasy making which alters in a logical or pseudo-logical manner current scientific hypotheses.*". Furthermore Harry Niven thinks it "*violates too many of the laws of physics and reason... it's a form of fantasy superbly suited to the games of logic.*" (Slusser, p.161, 1995). A frequently scrutinized issue in the time travel narrative is its ability to create paradoxes and/or casual loops in time. To this Robert L. Forward claims, "*Anything that produces logical paradoxes is not science. Time machines produce logical*

paradoxes. Therefore, if time machines exist, they must use magic, not science." (Slusser, p.161, 1995). However, several authors and contributors of science fiction disagree with this point of view and defend time travel as an integral part of science fiction. David Lewis states that:

TIME travel, I maintain, is possible. The paradoxes of time travel are oddities, not impossibilities. They prove only this much, which few would have doubted: that a possible world where time travel took place would be a most strange world, different in fundamental ways from the world we think is ours. (Lewis, p.145, 1976)

Besides this opinion, the sf-encyclopedia emphasizes that:

The fact that Time Travel into the past disrupts the pattern of causality, changing or cancelling matters of known fact, has not caused stories of this kind to be banished from the sf field; instead it has led to the growth of a subgenre of stories celebrating the peculiar aesthetics of such Paradoxes. The essential paradoxicality of time travel is often dramatized by asking: "What would happen if I went back in time and killed my own grandfather?"

Furthermore, Alasdair Richmond in his article on Time travel contemplates on how the different paradoxes are interpretable in a philosophical, meta-physical and physical view:

No science fiction staple poses more philosophical difficulties than time travel, but there is still no consensus as to whether time travel fictions exhibit logical, meta-physical, or physical impossibilities. Time travel's defenders often assume that granting its logical possibility makes all other oddities about it disappear, but even noncontradictory time travel poses problems in causation, identity, epistemology and probability. (Richmond, p.305, 2001)

The question of time paradoxes has even been included in serious scientific theories in the field of time travels, by physicists such as Kip Thorne and Stephen Hawking. Besides this, the Austrian physicist Kurt Friedrich Gödel made a breakthrough in 1949 in his research on Einstein's theory on special relativity, where he found out that time travel theoretically is possible even without the device reaching the speed of light (Richmond, p.305, 2001). Most fictional stories using the trope of time travel, however, does still use faster-than-light speed to their vehicle. Several stories using time travel as a device is also included in fantasy such as *Harry Potter* and *Artemis Fowl*, where magic is used to enable the characters to traverse back and/or forward in time. This paper, however, will mainly investigate the possibility of theoretical time travel through science and technology, which means the

narrative has to abide to the accepted rules in science fiction, the actual science will only briefly be explained since the main focus is the plot and narrative expressed in science fiction.

Gomel points out that one of the fascinating aspects of the time travel narrative is the ability to traverse time as a fourth spatial dimension:

Space is isotropic while time is not: we can move in any direction in space but only in one direction in time. The past and the future are phenomenologically distinct in a way, in which, say, breadth and length are not; and this distinctness creates causal chains. Time travel enables agency, which is predicated on the ability to choose between several alternatives. (Gomel, p.335, 2009)

The ability to venture 100,000 of years back or forward in time in a couple of seconds, in the context of a single story, firmly displays Cixin's theory on the tremendous use of macro-details in science fiction, which is also an important feature in the time travel narrative. One of the chief problems of time travel stories is the complexity and confusion of the narrative in some of the stories. One of the difficulty is that the plot of the stories often is non-linear in its structure and logic. This along with several other things means that the story is capable of using flashbacks or flash-forwards unannounced. Gilbert Fulmer explains through David Lewis text on time travel, two important understandings of time, which has to be taken into consideration when one is to determine the time aspects of time travel and the general understanding of the *arrow* of time:

(...) time travel requires a distinction between what David Lewis has called "external" and "personal" time.⁵ External time is that followed by the world as a whole; personal time is that measured by the time traveler's own clock his aging, etc. Normally the two run together: you and I age a day for each day the world ages; what is past for you or me is also past for the world, and what is future likewise. But time travel would separate the two: if you travel to the past you go to a time when the world was younger than when you departed; but your destination is future in your personal time. (Fulmer, p.152, 1980)

The plot of time travel stories often takes place in two or more time-lines; this is often executed through a frame narrative. This is the case in *The Time Machine*, where an unknown man, through a first-person narrative, tells about his encounter with the *Time Traveller*. The adventure of the *time traveller* is furthermore described in a first person narrative from the perspective of the *time traveller*. Another example takes place in *Timescape* where two plots take place parallel to each other. One in 1998, where planet Earth is in grave danger to extinction due to radioactive activity, and the second

in 1962 several years before the catastrophe. It has to be noticed, however, that the time travel narratives is not based on a person travelling time, but tachyons (faster-than-light particles), which collide into the past with a final desperate message to avoid the catastrophe. This means that this story rather is considered time manipulation than actual time travel. The plot structure, however, is similar to actual time travel stories. Slusser and Chatelain furthermore emphasize that in most of the early time travel stories: *Time travel remains a pretext for, or vehicle that activates conventional romance or adventure narratives. Never is it the structure of the narrative itself.* (Slusser, p.166, 1995). The stories are thus often concerned with the psychological aspects of its character or characters. This is also, what HG Wells points out with his character in *The Time Machine*, which follows an adventurous and explorative narrative.

To return to how the general theme of time travel takes place in other time travel stories, Gomel let us know that *[t]he time travel chronotope represents history as a frozen "space-time continuum," in which the future is as determined and immutable as the past* (Kern 206) (Gomel, p.335, 2009). Furthermore, she underlines that:

(...) the greatest paradox of time travel is its relation to narrative, and therefore social and historical, time. Lem argues that time travel dramatizes a "philosophy of history" (145). This is a philosophy of determinism, which implies that there is only one "true" narrative of history, and thus the seeming open-endedness of the future is an illusion. Since the possibility of choice between several future alternatives is effectively foreclosed, narrative agency falls apart (Gomel, p.335, 2009).

Gomel further contemplates on this statement by pointing out another chronotope derived from *The Time Machine*, which is frequently used in other time travel stories:

In the hundred years after its publication [*The Time Machine*], the novel's two chronotopes have developed into two very different narrative forms, time travel and alternative history, corresponding to the two forms of temporality that Lyotard called "myth" and "contingency." The first is a "constant framework" of determinism, the second, an open-ended flux of unpredictable events (Lyotard 67). Myth is characteristic of utopian and religious ideologies, as well as of the "end of history" postmodern malaise; contingency emphasizes free agency, randomness, and historical choice. (Gomel, p.336, 2009)

In *The Time Machine* it is, however, essential to notice that the narrative mainly is concerned with the *time traveller's* descent into the future, even though he has got the ability to travel both ways in

time he only returns back to the present age again once in the story. By only transcending into the future, the possibility of time paradoxes will not occur, since only travelling back in time will grant the possibility to change the future and thus cause these paradoxes. The changes made in the future, however, will be able to alter the events, which will occur later on. By moving the character into the future, however, Wells is able to speculate on how the evolution of humanity will occur in the future. Wells was a contributor of the Darwinistic view of natural selection and worked together with one of Darwin's biggest *disciples* Julian Huxley to contemplate biology and the evolution theory (Gomel, p.338, 2009). The narrative in *The Time Machine* is thus based on the deterministic version of time travel rather than that of alternate history, by displaying how the progress of humanity evolves from 1895, the contemporary time of the novel, to the extinction of everything at the *end* of time. To contemplate on the two chronotopes exclaimed by Gomel, a few examples of frequently used paradoxes and types of time travel will be further scrutinized.

Types of Time travel

As the sf-encyclopedia enlarged upon in its description of time travel in science fiction; what will happen to you if you travelled back in time and killed your own grandfather? This is one of the most discussed paradoxes in the topic of time travel. This paradox is widely known as the grandfather paradox. This scenario is applied to explain several variations of time paradoxes. As previously stated, stories concerned only with travelling in to the future are only capable to display variants of different changes that already have taken place. This means that only the future is alterable, which is clarified in the understanding of *personal* and *external* time, which signifies the arrow of time.

Before venturing into the extraordinary and frequently used time travel paradoxes in fiction, a common scientific thought experiment called the twin-paradox will be explained. The twin-paradox is a thought experiment of special relativity involving two identical twins where one of the twins is sent into space in a high-speed rocket, upon returning home the twin who has been in space will notice that the twin on Earth has aged more than him/her (Székely, p.161, 2010). Although this thought experiment is known as the twin-paradox, it is not a contradiction as several of the other paradoxes, but rather a peculiarity in our understanding of time known as time dilation. Time dilation has furthermore been applied in science fiction stories, such as *Interstellar*, to exhibit a more logical and scientific way of time travelling. To return to the more speculative types of time travel, Appendix 1 briefly explains three common time travel paradoxes by applying the grandfather-paradox. These



types of time travel all question the possibility of freewill and ability to actually change anything, whereas the two first are concerned with paradoxes. The last type tries to explain a way to avoid the causal loops in time travel. Furthermore, it has to be noted that all of these types of time travel are mixable with elements from each other; this will be further scrutinized after the explanations of the types of times-travel. A common scenario is that travelling back in time causes casual loops and thus creates paradoxes. A frequently used type of time travel is dynamic, where the travel back in time has a definite impact on the future. However, if one would travel back and kill one's grandfather, one would never be born and thereby the possibility to travel back in time will result in an infinite loop, making ones existence repeat itself. This type of time travel narrative is, however, a part of the alternate history chronotope, where the author are thereby capable of making what-if stories, however, if the time traveller kills his grandfather the timeline is doomed to repeat itself infinitely. An example that uses this type of time travel takes place in the 80s film *Back to the Future*, where we are able to examine that the actions made in the past have a definite impact on the future, the film furthermore, points out the fatal output of the grandfather-paradox. Another common type of time travel theory is based on fatalism, also known as a fixed timeline. In a fixed timeline. In this theory, there are events in time, which are unalterable; these are observable as fixed points in time. This means that when a person travels back in time, the future the person left cannot be changed since the actions that the person have made in the past already have occurred in the future, which he/she left, and thus no change will be occur. This paradox also goes under the name Novikov self-consistency principle. Fulmer makes an example of this by using a fictional neo-Nazi called Hans:

Consider Hans, for example, a German neo-Nazi of 1994, who wishes passionately that the invasion of Normandy in 1944 had failed. Hans acquires a time machine, and immediately schemes to travel to 1944 and reveal the Allied invasion plans to the German high command. Surely, Hans reasons, with this foreknowledge the defense can be reinforced, and the invasion will be repulsed. But Hans is mistaken in thinking that there will be a second invasion, in a second 1944, with a different result from the first. There was only one invasion; it occurred in the one and only 1944, and it was successful.³ (Fulmer, p.152, 1980)

According to the logic of the Novikov self-principle, Hans will fail since his journey to the past already has taken place in history and has already failed. Again the effect of predetermination occurs, which makes it impossible for him to change anything already determined, this again questions the actual possibility of freewill in this type of time travel stories. One of the frequently used narrative



structures in this theory is what will be referred to as *The Cassandra Complex*, which is based on the myth of the woman of the same name, who was cursed with the ability to predict the future, but no one were able to believe her. Fulmer contemplates this complex by pointing out that Hans will never be able to make his comrades able to defeat the Americans, since they will not be able to believe him. Even if they are capable of believing him, it will eventually end in the company receiving a defeatist mentality, which will lead to the same defeat as already predicted (Fulmer, p.154, 1980). To contemplate on this statement it is important to know that this loop furthermore is recognized as the predestination paradox, or a closed loop. This also means that the concept of freewill is more or less ignored in this paradox, since the time travel and all the events are predestined to occur. Both of the previously explained theories suggest that change will happen because of time, but the latter suggests that we as human beings are not capable of deciding how things will change.

There are, furthermore, other theories of backwards time travel and time manipulation that are able to avoid the problems of casual loops and paradoxes. One of the most acknowledge theory is that of multiverses, which derives from the scientific idea of string-theory. The multiverse theory is unlike the two previous able to alter events of history without any paradoxes by acting as contingent and open-ended theory. The general theory of multiverse is that there is an infinite amount of parallel universes, which makes it possible to traverse from one universe to another. *Timescape* displays a variation of the multiverse theory, where the tachyons, which are sent to the past creates a new timeline, where the disaster, which will happen in the future, will not occur. The future from where the tachyons are sent, however, is still doomed, since the time in that time-line is still determined by the Novikov self-consistency principle. To apply the multiverse theory to the grandfather-paradox, it can be deduced that the time traveller in this type of story is capable to go back in time, and kill all her/his grandparents and then create a new timeline where the time traveller does not exist, and thereby no paradox will occur. Similar to the example of *Timescape*, the traveller is not capable of going back to the timeline from, which he/she came from. Since the multiverse theory operates with an amount of infinite universes, the narrative structure is thus capable of taking place in more than two different dimensions at once. A well-known theory in the fields of multiverse is that of chaos theory, which most acknowledged sub-category goes under the name *The Butterfly effect*. As the name suggest this theory is based on contingency and chaos, the name *Butterfly effect* is used to emphasize cause and effect, by underlining that small actions one place are capable of having enormous consequences another place. Various people have used a quote containing variation that applies that the flap of a butterfly's wings in one place is capable of causing a tornado, typhoon or

another type of natural disaster another place, which is why this theory is known as the *Butterfly Effect* (Smith, p.247, 1991). The theory of *The Butterfly Effect* is applied in the film of the same name from 2004. The general plot of the film is that the protagonist, Evan, is capable of accessing a strongly repressed memory and by reaching this he is able to manipulate it and ultimately alter the future of himself and the rest of *his world*. The narrative in the film is thus displayed via several perspectives and cases of what would happen if Evan did something different during the period he is able to change via his repressed memory. This is also, where the effect of *the Butterfly Effect* takes place by displaying that a tiny change in one moment is capable to change the rest of a person's life. Besides looking at it as a multiverse, this principle is similar to that of a dynamic timeline, by having a definite impact on the future, however since all of the time-lines created by *the Butterfly Effect* are singular time-lines, no paradoxes will occur. This is further emphasized by the fact that Evan always is capable of accessing his repressed memory and thereby alter *his future*, although it is never explained how he is able to access this repressed memory. The lack of actual science and emphasis on emotions in the film makes it possible to distinguish the plot in the film as a variation of *soft science fiction*.

Reasons for Time travel in Fiction

Different aspects of time travel, time manipulation and narratives have been discussed in the previous sections. The sections so far, however, have mainly dealt with what time travel is, how it works, and theories that connects time travel with science fiction. Why people want to time travel, however, has only shallowly been discussed. In order to be able to find reasons for time travel, we will have to accept that the foundation of all time travel stories are based on Suvin's argument that the socio-historical contexts always are essential in order to make sense of a given story. Furthermore, in context of this paper the reasons for time travel is one of the essential questions in order to understand time travel as a whole. To do this the theories and the stories discussed so far will be applied to argue for some of the frequently used reasons why time travel is used in various plots, which this section will clarify. The basis of this topic will be scrutinized through different characters' reasons for wanting to time travel in several science fiction texts.

A common reason, in fiction, for wanting to travel back in time and alter the future is based on sheer desperation. Time travel stories that include escape into the past as a last desperate attempt often

include extreme themes such as the apocalypse or invasion. The central plot of *Timescape* is about saving planet Earth from a manmade disaster caused by war and technology abuse. As previously mentioned *Timescape* is dealing with time manipulation, and the protagonists, in 1998, are desperately trying to figure out, how it is possible to alter the events that have happened in the past. As with several kind of time travel stories, the outcome of the experiment is not what the scientists expected, but they have saved another parallel dimension. In the *Terminator*, another case of desperation takes place due to a world ruled by robots. Here the protagonist has to travel back in time in order to change the fate of mankind. *The Terminator* is similar to *12 Monkey*, which also is about the cause of what started the apocalypse, and furthermore if it is possible to change the future, where the characters came from. Let us categorize this reason for the needing to travel in time, in these type of stories, as *the search for salvation*.

The reasons for time travel in stories such as *The Time Machine* are not as concerned with disasters in the present, but mainly concerned about the aspect of being able to travel in time. Although the plot in *The Time Machine* mainly is concerned with travelling into the future, the story also points out that ability to travel through the fourth dimension is exciting and adventurous. As earlier pointed out the plot of *The Time Machine* is mostly backed up by the adventurous plot narrative and is not as concerned with the science behind the time machine as other stories are. The time traveller in the story is also merely an observer of an unchangeable future, and is not interested in changing anything. However, this is not always the case in this type of time travel stories. An example is the film *Primer*, which besides the exploration of time also is interested in mingling with the paradoxes of time travel. Besides the explanations of paradoxes, the machine in this text is furthermore based on *hard science fiction* in contrast to machine used in *The Time Machine*. The type of narrative is primarily interested in exploring time, which is out of reach and is similar to the science fiction stories where people explore unknown planets. Thus, this type of reason for time travel we will refer to as *the desire for exploring time*.

Another reason for time travel focuses on a psychological and anthropological approach of changing time. The reason for time travel in these type of stories are often centred on the psyche of a single person. Since psychology is central in this type of time travel story, these type of stories are often a part of *soft science fiction*, and furthermore concerned with anthropological aspects of science. A reason for time travelling this type of time travel could be if a person travelled back in time in order to alter, his/her own personal future. Which is exactly what happens in *The Butterfly Effect*. The

protagonist, Evan, is capable of changing his own future by altering events in his past. However, whatever he chooses to do alter has a huge impact on his own future and the future of his friends. This is where the psychological aspect of the film takes place. One of the scenarios is where all of his friends are having success but he has become crippled and paralysed in all of his body, except for his head. Also here the psychological aspect takes place. No matter how he changes the past, he is never able to create a future where everything is perfect for him and his friends.

Finally, one of the most common reasons for wanting to travel in time is to change historical events. The foundation of this type of time travel is as the explorative reason, concerned with curiosity. However, the reason in this type of time travel is also based on the ability to change atrocious events that have happened in the past; this could for example be to avoid World War 2 by removing baby Hitler. As with all the reasons for time travelling it is essential for the characters and the author to think about all the paradoxes and consequences before venturing into the past. The wish to alter historical events is a broad foundation in time travelling and, is also the main reason in *the search for salvation*. To elaborate further on this statement, it is essential to emphasize that the reasons explained in this chapter are not final and can easily be mixed up. The reasons in these sections are mainly guidelines to understand why people might want to travel in time.

Intersectionality

So far, the theory sections have mainly been focused on general theory of science fiction and the aspects of why people want to time travel, and not as much on soft science and political topics, such as culture, gender, race, sexual orientation, and class. These themes are briefly explained - what intersectionality is concerned with - in several texts. This section will define the use of intersectionality in science fiction and in time travel stories. However, before venturing into how intersectionality is usable to analyse science fiction texts, it is essential with a general understanding of what intersectionality is. Jennifer C. Nash remarks in her article about *re-thinking intersectionality* that:

The term intersectionality, [was] coined by legal scholar Kimberlé Crenshaw, [and] underscores the 'multidimensionality' of marginalized subjects' lived experiences (Crenshaw, 1989: 139). Intersectionality emerged in the late 1980s and early 1990s from critical race studies, a scholarly movement born in the legal academy committed to problematizing law's purported colour-blindness, neutrality, and objectivity. From its

inception, intersectionality has had a long-standing interest in one particular intersection: the intersection of race and gender. To that end, intersectionality rejects the "single-axis framework' often embraced by both feminist and anti-racist scholars, instead analysing the various ways in which race and gender interact to shape the multiple dimensions of Black women's ... experiences' (Crenshaw, 1991: 1244). (Nash, p.2, 2008)

Furthermore, Katherine Castiello Jones, Joya Misra, and K. McCurley, in their article *Intersectionality in Sociology*, define three models that explains different aspects of intersectionality in sociology. The three general approaches are *Inclusion/Voice*, *Relational/Process*, and the final one is the *Systemic/Anticategorical* model. Regarding *Inclusion/Voice* they remark that in this approach:

Intersectionality may refer to a sharp focus on a disadvantaged group – such as low-income disabled African-American men – to give voice to their experiences and perspectives. As Choo and Ferree (2010) argue, this approach is meant to focus on inclusion of previously marginalized groups. McCall (2005, 1780) defines this approach as “intracategorical,” which is “typically either a single social category at a neglected point of intersection of multiple master categories or a particular social setting or ideological construction, or both.”, and remarks furthermore that (...) [t]he inclusion approach argues that a particular social group is concurrently constituted by multiple statuses. This work can also break down simplistic notions of status categories by pointing to substantial heterogeneity within groups. (McCurley, p. 2, 1991)

To the *Relation/Process* approach, the group remarks that it is:

(...) a “structural type process-centered analysis” [which] considers the transformations that occur when different statuses meet. Rather than seeing gender and race as additively affecting a person's experience, they consider both how gender is raced, and race is gendered. Many scholars who take this approach, defined as “intercategorical” by McCall (2005), focus on categories to identify patterns of relations between them. For example, studies may explore how two statuses interact, as in research that shows how a felony record may have dramatically different effects on employment opportunities for black men in comparison to white men in entry-level jobs (Pager 2003). (...) Relational-process models may also attempt to identify whether certain categories are more or less salient in a given situation, and even while this approach is often



adopted with the strategic aim of liberation (McCall 2005), it may ultimately tend to reinforce categories, rather than breaking them down. (McCurley, p. 2, 1991)

The final approach they describe is the *Systemic/Anticategorical* model, which they describe as a:

(...) a fully intersectional model, which does not see any category as more salient than another. Rather, the statuses and their relationships with each other are problematized under the assumption that they continually and mutually constitute each other (Ken 2010). Many of these scholars reject the language of "intersection," even while they make use of race, class, and gender and investigate their relationships. Scholars take a complex and historically grounded approach to understanding intersections as always co-constructing race, gender, class, and other statuses as systemic inequalities (Choo and Ferree 2010). There are no effects of race alone in such an approach, since race must always be read as gendered, classed, sexualized, etc. This approach may also relate to McCall's (2005) "anti-categorical" approach – in which categories are understood as artificial and exclusionary. Therefore, performances and understandings of statuses change based on context. (McCurley, p. 2, 1991)

To these models, the authors point out that most used model in journal published in 2009 was the relational, while the least used one was the Anticategorical model. The articles scrutinized in their work, however, is only concerned with scholar articles that are interested in sociology. The authors further point out that most frequent use of intersectionality in sociology is qualitative. This means that the approaches of intersectionality are capable of being used in scholar texts outside sociology, in context of this paper also with scholarships concerned with science fiction. Before venturing into examples of science fiction texts that are concerned with intersectionality, it is primarily vital to observe that the key themes discussed in intersectional analysis are concerned with feminism, which is considered a part of soft science.

In an online article on essential feminist texts in fiction, Stephanie Luce recommends *Woman on the Edge of Time* (1976) by Marge Piercy as an example of a novel that deals with the aspects of intersectionality in science fiction. It has to be taken into mind, however, that the novel was written before the term *intersectionality* was coined. However, there are several aspects of the novel that are concerned with different aspects of intersectional themes such as culture, race, sexual orientation and class. Not only has a woman written this novel, but the protagonist of the story Consuelo Ramos (Connie), is also a 37-years old ethnic woman, who is a part of the Hispanic race and culture. These two aspects already indicate certain points of gender and cultural intersection in the text. Furthermore,



the general plot is concerned with several other aspects of feminism, and particularly intersectional aspects in speculative narrative. This is also seen by the way that the novel deals with several issues of intersectionality through the consequences of mental health in asylums. This is displayed through visions of utopian and dystopian possibilities that will occur in the future through a time travel narrative. These visions are brought to Connie by an androgynous character named Luciente. Luciente tells about two different time-lines, a utopian and a dystopic future. In the utopian future environmental pollution, homophobia, racism, phallogocentrism, class-subordination, consumerism, imperialism, and totalitarianism no longer exist. The death penalty, however, continues to exist as well as war. In the dystopian future a wealthy elite live on space platforms and subdue the majority of the population with psychotropic drugs and surgical control of moods. Besides this, they are harvesting earth-bound humans' organs. Women are valued solely for their appearance and sexuality, and plastic surgery that gives women grotesquely exaggerated sexual features is commonplace. The possibilities of the future are determined on the actions of Connie, who inspired by the stories from Luciente, in the end of the novel, revolts on the system by making violent actions against what might turn out to be the mind-control technology in the dystopian future. This aspect underlines a need for understanding of one's own identity, and furthermore how an understanding of different interactions of class, gender and race is necessary in order to be able to understand one's own gendered and cultural identity. Furthermore, a broad understanding of the different intersections in a society is important in order to change the future into the better. The importance of intersectionality also points out throughout the novel, the problem of mental institutions. Regarding the protagonist this is underlined through the narrative of whether the stories told from the person from the future, are true or not. This fact is ambiguous since it is never made clear whether the protagonist is just hallucinating or if she actually is being visited by an entity from the future.

To sum up, it can be determined that the plot of the story is centred on the relational approach of intersectionality, and how changing different aspects of society is capable to make major impacts on the future. This means that the speculative nature of science fiction are applicable on intersectional research. In the case of this specific story the time travel narrative is capable of pointing out various issues of the contemporary society and amplifying these issues in the future, be it a utopian or a dystopian setting.

Another example of a time travel story concerned with intersectionality is *Kindred* from 1979 by Octavia Estelle Butler. The general plot of the story is about an African-American woman, who is repeatedly forced to travel back to the age of slavery. The novel in contrast to *Woman on the Edge of*

Time is written by a man, but still has a woman as the protagonist; the author is furthermore part of the African-American race. Professor Florian Bast from Leipzig University has in his article “*I Hugged Myself*”: *First-Person Narration as an Agential Act in Octavia Butler’s “The Evening and the Morning and the Night”* written about this novel as well as other African-American novels by Octavia Butler which are concerned with intersectional. In his studies, he is especially interested in the first-person narrative that occurs in these novels. He points out that:

The central theoretical category of my analysis is agency, which I define as an individual's capability to reach a decision about himself or herself and implement it. This ability is significantly expressed in agential acts, i.e., acts which address and problematize agency as such: agential acts are intended to achieve a higher level of agency, explicitly to express or perform agency. They mark a choice between several options, particularly in situations of oppression or determination. Thus constructed, agency is not simple voluntarism, a vague notion of doing what one wants, but rather an ability realized in a specific cultural and historical context and within a dialectic of enablement and constraint. (Bast, p. 68, 2013)

Bast further remarks that the first-person narrative in these African-American novels is applied in order for the reader to empower the ethos of the story, and thus make it possible for the reader to identify with the narrator/protagonist's ideology, gender and race. Furthermore, the first person narrative also makes the story subjective, which means the stories are focused on the ideologies of the author, and the experiences of the protagonist often has to be taken into a macro-perspective as with most science fiction (Bast, pp. 69-70, 2013). Besides novels, it has to be remarked that this type of first person narrative also is applicable outside of literature, such as in films, by making a specific character's view the pivotal point of the story. Bast remarks that a focus on slave-narrative is common in these novels. This is expressly clear in *Kindred*, which also similar to *Woman on the Edge of Time* is concerned with time travel. Especially with the use of time travel as a vehicle, the relational intersectionality is useful to compare the focus on race, class, and gender throughout different periods. This perspective is accessible for the majority of the population to grasp with a focus on a historical slave-narrative. The slave-narrative, however, does not necessarily has to be a part of the historical past; it can also be in other ways. An example is seen in *Woman on the Edge of Time*, where Connie has become a slave of society and forced to live at a mental hospital, which in this case intersects between several cultural aspects of intersectionality. Furthermore, it has to be remarked that the *visit* from Luciente in this mental institute is what initiates the agency of Connie to rebel against the system

and eventual save billions of lives. The stories she has been told makes her feel obligated to change the course of history to revolt against oppression. Connie's life thus has an important impact on the general course of history, to put the character in to perspective she can be seen as an allegory that displays that the changing of oneself (micro level) is capable of making a ripple on everything else (macro level), similar to the butterfly effect. As with the stories by Octavia Butler, this story is explained through a first person perspective, which makes its agency subjective but still intersectional with several important issues of race, gender, sexual orientation, and a general aspect of freedom.

Analysis

The Time Machine (1960)

The theory section has been centred on H.G. Wells' classic *The Time Machine*, the purpose of this analysis, however, will mainly be on the adaptation of the novel into film, released in 1960. As with most adaptation, there are some changes in the plot and narration. The central plot and the type of time travel have foundation on the same formula, which is applied in Wells' novel. The film furthermore uses the same frame narrative as the novel. In order to give a broader understanding of the plot to analyse the text further, a summary in chronological order regarding the plot narrative but not the time, will be elucidated.

The first event that occurs in *The Time Machine* includes the four gentlemen: David Filby, Dr. Philip Hillyer, Anthony Bridewell, Walther Kemp and the time traveller H. George Wells' maid Mrs. Watchett. The four gentlemen have been invited to dinner by George, five days prior to this moment. They wait and discuss before George arrives devastated by the events of his trip. When he finally calms down, he starts telling the gentlemen about his journey through time. He starts by telling them about the last day in the year of 1899. The same day when he showed them a miniature model of his time machine traversing into the future and told them that he wanted to venture into the future. None of the men believe him, but he decides to test the machine later that night. Before he does this he tells his maid Mrs. Watchett and his friend David Filby that the gentlemen are invited for dinner in a week, January the 5th. Afterwards he enters his time machine and starts his journey into the future. During his trip, he first arrives at the first (1917), then the second (1940), and a fictional third world war (1966), before he is covered up by molten lava and finally arrives far into the future in the year 802701. During the first and third world war, George meets Filby's son. The year 802701 is opposite



the other time periods that George has visited, beautiful and serene. When he arrives, his time machine is placed near a Sphinx, and initially judges this time period to be paradise on Earth. His thoughts, however, are drastically changed after he discovers the two races that inherit the planet. The benevolent but naïve race called Eloi, who looks like regular human beings and the nocturnal and malevolent race called Morlocks, who are blue apelike creatures with shimmering eyes, due to their living underground in darkness. George's first encounter with the Eloi is when he sees them near a pond enjoying life and relaxing. However, the joy is disrupted when a female Eloi, Weena, is close to drowning in the pond, but no one wants to help her, except for George. George falls instantly in love with her. Afterwards he visit their home, where all the Eloi are staying together, sharing food, and talking with each other. This is when George realises that the Eloi are not as clever as he expected and he decides to travel back to his own time. This is not possible since the Morlocks have taken his time machine and placed it inside the sphinx. After this George finds out that the Morlocks are afraid of light, which he later uses to his advantage. The next day he sees that all of the Eloi are gathered because some of them are going to being sacrificed to the Morlocks, so they can maintain their lifestyle. George goes down to save them in the cave, where Weena also is. He gets out with all of the Eloi down there and ends up burning down the underground. After this, he lets the Eloi know that they have to be independent, since the Morlocks have extinct due to the explosions. He did not get his time machine from the cave, but notices that it is back in the entrance to the sphinx. He wants to take Weena with him, but the door closes before she is able to get her with him, and when he enters, he is assaulted by Morlocks, which forces him to use the machine to get back to his own time. When he gets back the film goes back to the start, but no one believes him until he shows Filby a flower from the future. Later the same day he once more goes to the future with three books, no one is told why he decides to leave again, and which books he brings with him.

As discussed in the theory section, this text is similar to the original text merely concerned with time travelling into the future. Besides this the story is not interested in the scientific time-space continuum, but merely with time as a fourth dimension, similar to Wells. This does also mean that the text is not concerned with any aspects of time travel paradoxes except that the future is fixed. Some of the themes, however, differs from the original text. The main theme of the story is as in the novel still time, which already is emphasized in the opening scene, where several clocks are ticking. This theme is central throughout the film, and some of the names of the characters are obviously metaphors to the notion of time, such as Mrs. Watchett. Another essential name metaphor is that of H. George Wells, which is a tribute to H.G Wells. Another central symbol, similar to the original text,



is the iconography of the Sphinx. John S. Prince claims that the true riddle of the Sphinx in the story is based on the evolutionary theories from Wells's mentor Thomas H. Huxley's, which he reduced to the question: *"How can man be stirred out of his complacency?"* (Price, p. 545, 2000). Price furthermore, emphasize that the Sphinx is based on the Sphinx from the Oedipus myth, where Oedipus has to solve its riddle. Huxley's question thus becomes the question to the viewer. The Sphinx' riddle to Oedipus is based on the aging of a human being. The symbol of the Sphinx is concerned with the aspect of Darwinistic prophecy similar to the original text, which is another central theme in the film. Besides these themes there are themes in the film, which are not present in the novel. One of the central themes in the film is war. Throughout the film, the consequences of war are scrutinized in several time periods. In the beginning, the contemporary war in South Africa is mentioned by Dr. Hillyer during the conversation in 1899. Besides the brief mentioning of South Africa the film, however, is in merely focused on what goes on in England. Besides this, the contemporary understanding of a patriarchal structure in society is present throughout the film, which means there is a stereotypical and patriarchal towards gender roles and race. When George departs, all events he encounters in the future are concerned with war. Since the two world wars had not happened when Wells wrote the novel, these were obviously not included in the original text. The first two World Wars are furthermore, portrayed historically correct in the context of time in the film. The third world war in 1966 is fictional, and its portrayal is based on the anxiety of nuclear apocalypse, which was a common cultural anxiety in the 1960s due to the cold war. The anxiety of nuclear annihilation is further emphasized in the year 802071, when the mysterious rings explain the reason behind the Eloi's and Morlocks' origin. One of the rings reveals how the destruction of the planet happened:

The war between the East and West, which is now in its three hundredth and twenty-sixth year has at last come to an end. There is nothing left to fight with and few of us left to fight. The atmosphere has become so polluted with deadly germs that it can no longer be breathed. There is no place on this planet that is immune. The last surviving factory for the manufacture of oxygen has been destroyed. Stockpiles are rapidly diminishing and when they are gone, we must die...

Another ring explains how the Eloi and Morlocks came to be:

This is the last day. We, the last to survive, have had our final meeting. We have decided to split into two groups. Each man and woman has made his own decision. Some have



chosen to take refuge in the great caverns and find a new way of life far down below the earth's surface. The rest of us have decided to take our chances in the sunlight, small as those chances may be.

These statements points out two essential themes in the story: the fear of nuclear apocalypse, and a metaphorical difference between light and darkness. The first theme is elaborated through the post-apocalyptic scenario, which George discovers with the help of his time machine. This scenario is furthermore where the latter theme is shown in form of the two *alien* races, the Eloi and the Morlocks. Both are portrayed savage and naïve as in the novel, whereas the Morlocks are portrayed as crude savages and cannibalistic carnivores. The Eloi are the exact opposite by being vegetarians and childish. Besides this the Eloi are dependent on the help that the Morlocks are giving them and happily sacrifice their own people in order to get food and shelter. This is an analogy to the primordial Homo sapiens, who were divided into hunters and gatherers. Even though the hunters were not cannibals. Price also remarks that the two races furthermore can be seen as an analogy to the division of the working- and the labour class, which also was one of Wells' fields of interest (Price, p. 543-4, 2000). Even though the Eloi are capable of communicating with each other, they do not own the ability to think critical, which is evident several times in the film. A significant pronouncement is made when Weena tells George that the Eloi do not understand the concept of past or future, which means they are prisoners of the present. The fact that George falls in love with Weena also underlines the romantic narrative of the story. Similar to the novel the races in film work as metaphors that display the concept of Darwinism, where H.G Wells believed that a devolution of the human race would occur in the far out future. The film, however, does not venture into the end of time as the novel. The ending in the film suggests that George wants to travel back to the Eloi and form a new world where a development of evolution will occur instead of further degeneration. Since are not shown the new future, this scenario suggests that George actually is capable of altering history and change the Eloi into intellectual beings. Contrary to the bleak prophecy made by Wells' that suggests mankind will turn into degenerative beings. The scenario in the film might also suggest that history is going to repeat itself, if the Eloi eventually grow up to become as detached from nature as the human being in George's time are. Besides this, it is important to understand that the regression of humanity in the film happens because of war and not as much due to the theory of regression that Wells' examined in his novel. However, similar to the novel Nature is the only real super power in this future. Beside this, the Earth is close to its primordial state, even though no animals besides humanity are present in the story. The two races are closer to the primordial human beings that inherited Earth. To scrutinize



on this statement it can be seen that the Eloi have regressed into primitive beings that benefits from the resources that nature has to offer. The Morlocks have still got the equipment to use industrial technology but only to a minimum. However, they have become so primitive that they are not able to use the equipment probably. Besides this, they are not able to go out when it is light outside. This leads to the theme of light and darkness, which has to be thought of both literally and metaphorical. In a metaphorical way, the theme of light and darkness represents the struggle between good and evil, in several time-periods. In a literal way, the theme of light and darkness is scrutinized with the two races who are dependent on each of these elements and are thus defined by either light or darkness. The Eloi are afraid of the dark and the Morlocks of the light. Similar to the original text, the film is mainly concerned with aspects that are considerable as parts of the soft science fiction genre. This tendency is emphasized by the focus on war, anthropology, psychology, and a Darwinistic approach to biology, instead of explaining how the time machine is capable of traversing time. Besides this, the encounter with the new environment and the two *alien* races in the future, suggests that the text is recognizable as a part of the explorative narrative. To elaborate on this statement, George points out to his friends in the beginning: *Why is it that we usually ignore the fourth dimension? Because we have no freedom to move in it. We can move in the other three -- up, down, forward, backward, sideways. But when it comes to Time, we are prisoners.* The time machine thus makes it possible for George to avoid being a prisoner of time. He also points out that all four dimensions are depend on each other and that spaces will change when time passes by. From this perspective, it is possible to determine that the planet Earth, which George experiences in the future, is a strange new world. Although both of the races in this future are based on Homo sapiens, they are still so different and alien to the Homo sapiens of George's contemporary time that they as well could be aliens from a foreign planet.

To sum up, the film version of *The Time Machine* is similar to the original story by H.G. Wells in many aspects. The time traveller known as George ventures into the future only to find out that mankind has regressed into two redundant races known as the Eloi and Morlocks. Through his journey he experiences three world wars, and finds out that warfare ultimately turns mankind into these degenerative beings. The themes of war, biology and time are thus the central themes of the film. All of the themes are a part of the historical socio cultural context of Wells' contemporary time, but the theme of war has been further influenced by the events that were central during the 60s. This means the core elements of the film, similar to the novel are based on soft science fiction. The film is similar to the novel narrated in a frame narrative, and is furthermore the same kind of adventurous

and explorative. As remarked in the theory section the novel is the foundation for most modern time travel films and novels. Furthermore, the novel invented the two chronotopes: Alternate history and predestination. The film is based on latter, which also is related to the subject of myth, which occur through representation of the Sphinx that occurs in the distant future.

The Terminator (1984)

The Terminator is a science fiction / action film franchise created by the director James Cameron. So far there are five films, a television series and several books and video games based on it. This analysis will only be concerned with the original film from 1984. The themes of the story is similar to the short story *I Have No Mouth and I Must Scream*, by Harlan Ellison. Especially the super computer, which is called AM in *I Have No Mouth*, has simply been changed into Skynet in *The Terminator*. Besides this short story, Cameron has, furthermore admitted that he was inspired by two episodes from the television show *The Outer Limits* (1963-1965). The two specific episodes are called *Demon with a Glass Hand* (1964) and *Soldier* (1964).

The plot of *The Terminator* takes place in two different timelines, which both take place in Los Angeles. The first timeline, which the viewers are introduced to, is the post-apocalyptic world in 2029 A.D, where robots, who are controlled by the super computer Skynet, have taken over the planet. Only a couple of human beings are left, while the rest are either killed or enslaved. The majority of the film takes place in the year 1984, which is the same age as when the film was released. In year, 2029 a terminator, which model is the T-800, is sent back in time in order to terminate Sarah Connor. Her future son John Connor is the leader of the resistance, in 2029, which has become a huge threat to the existence of Skynet. The resistance find out about the terminator and sends Kyle Reese back in time to protect Sarah Connor. In 1984, Sarah Connor works as a waitress at a local diner, and living a normal life. This is until the T-800 gets back in time to terminate her. Both the terminator and Kyle have got problems locating Sarah Connor. The terminator decides to do it with brute force, by eliminating all women who goes under the name Sarah Connor in the phonebook. The elimination of all the Sarah Connors makes Kyle Reese aware, and just before the terminator finds the real Sarah Connor, he is able to rescue her from him. The T-800 is constantly chasing Sarah until she has been terminated. Kyle lets Sarah know that he is from the future and that he has been sent back to protect her. Furthermore, he tells her that she is the one who gives birth to the rebel leader John Connor. Sarah does not believe him to start with, but as time passes, she gets more and more convinced that

he is telling the truth. The police also tries to trace down the murderer, who they believe is Kyle. When they catch him, they are convinced that he is a psychopath, due to an explanation from the psychologist Peter Silberman. Sarah is furthermore, kept in preventive detention in order to keep her safe. The terminator however tracks her down, but Kyle again manage to escape. After this, Kyle and Sarah finally manage to destroy the T-800. During the final assault, the T-800 manages to kill John. The end of the film shows that Sarah has been pregnant by Kyle, underlining that he is the father of John.

As mentioned earlier the narrative of the film is divided into two time-lines. The first thing the spectator perceives, when the film starts is the prophetic timeline of the post-apocalyptic Earth. A text shows that this scenario takes place in Los Angeles 2029 A.D. The post-apocalyptic scenario is concerned with the demise of mankind, animals and the vegetable kingdom, which leave the few human beings left oppressed by machines, and the Earth covered in dust and darkness. The reason for the apocalypse is explained just before the opening credits by a sign that says that: *The machines rose from the ashes of the nuclear fire. Their war to exterminate mankind had raged for decades, but the final battle would not be fought in the future. It would be fought here, in our present. Tonight ...* This does again point out the common theme concerned with phobia of nuclear war during the cold war, which was one of the central socio-historical contexts in 1984. From this moment, it becomes clear that the main themes of the film are concerned with technology and warfare. Besides this, it becomes clear, throughout the film, that the main themes are focused on aspects of *soft science fiction*. This is examined through other central themes in the film such as anthropology, and the psychological consequences of the events that take place in the contemporary time and projecting these consequences into the future. Things such as how the time displacement machine is built and its functionality is only briefly explained, and aspects of *hard science* are not central in the plot.

As previously mentioned the majority of the plot takes place in the contemporary age of 1984. The opening shot from the 1984 timeline is introduced with an African American man controlling a forklift truck. In the scene, it is night, which means it also is dark, similar to the scene from the post-apocalyptic future. This scene empowers the theme of the symbiosis and distinction between man and machine, particularly when the T-800 enters and forces the man to flee. Throughout the film, the view on technology is rather pessimistic and is particularly concerned with anxiety of humanity being unable to control it. This is similar to the combative master-narrative concerned with an alien invasion. However, the apocalyptic invasion that occurs in *The Terminator* is internal, since the *aliens* are machines whom human beings have created. The future is thus a dystopic reflection of the savage

and malevolent nature of humanity, manifested as emotionless and power-hungry machines. The general theme of technology is particularly interested in Artificial Intelligence. This is displayed by the T-800, and the fact that the supercomputer Skynet (which is created by the firm Cyberdyne) has become self-aware. On the other side by including a time machine, which in the film is called the time displacement machine, which is able to send people back in time, technology also becomes the key to salvation for humanity. The journey with the machine takes place in a blink of time, and the user is teleported into a given time-period. This also means that the user has to acknowledge the preconditions of the given time, to fit into the given period. It can thus be concluded that the aspect of macro-narrative happens faster than the spectator is capable of observing with the naked eye. As in *The Time Machine* the space from which the machine is used stays at the same location when the user travel back or forward in time, which in both cases in the film is in Los Angeles. It furthermore has to be noticed that the location of Los Angeles is specifically selected to put emphasis on several cultural aspects of the contemporary Western world, particularly the American virtue of individualism. The time displacement machine is furthermore created in such a way that it is only possible for organic matter to use it. This is also, why Skynet has created cyborgs such as the T-800, since they consist of an exoskeleton and organic tissues to resample human beings. This type of machine furthermore works as symbol that shows a metamorphosis between man and machine.

Throughout the film, the relationship between humans and technology is displayed through the use of contemporary technologies, such as TVs, walkmen, cars, radios, phones and weaponry. Karen B. Mann remarks to this issue that: *No better symbol for this exists than the killing of Ginger after she makes love (while wearing a Walkman) to a young man (who whispers obscenities over the telephone) who also bears an eerie if diminished resemblance in physique to the terminator himself* (Mann, p. 19, 1991).

To return to the machines it is essential to notice that the T-800s, dissimilar to most human beings are not capable of experiencing emotions, but are fully calculated cold killer machines, whose only purpose in existence is based on the agency, which has Skynet has determined. To perspective this as a cultural aspect of the cold war, it can be said that the robots have become the new hyperpower of the Earth. Beside this, the machines are used to elaborate an important ontological theme, of what makes an entity human. This theme and a general psychological understanding of time is further elaborated when the psychologist Peter Silbermann questions if Kyle merely is a disturbed lunatic, who is unable distinct reality and dreams. The question of insanity is elaborated in the film's general understanding of time, which is executed in the two time-lines, which besides the opening scene, are



revealed through the memories of Kyle. This means that the events from the future becomes the past to Kyle, which as a clear example of an internal and external understanding of time. This distorts his understanding of time and reality, which is the reason why Peter Silbermann judges him to be a lunatic. The memories of Kyle are traumatic and defines him as a person in context of the war he has experienced. The traumatic experiences are displayed in the zeitgeist of events that are capable of causing Post-Traumatic Stress Disorder. The issues of PTSD due to war have frequently been portrayed in films. In the eighties this was often about the Vietnam War, which is seen in films such as *Rambo*, *The Deer Hunter* and *Taxi Driver*. Since the distortion of time is a central issue in *The Terminator*, the post-traumatic memories makes him certain that the future is doomed if he fails to save Sarah. It can thus be concluded that Kyle both suffers from the traumatic events he has experienced in the future, but furthermore the fact that the Earth is doomed if he is not capable of saving Sarah. Furthermore, it is important to notice that both the T-800 and Kyle Reese are send back in time to fulfil a specific task viz. the T-800 to terminate and Kyle Reese to save Sarah. The distinction between Kyle and the T-800 underlines psychological and ontological differences between man and machine. One of the key difference is observed through humanity's ability to feel emotions. Kyle is seduced by Sarah's charm and ends up falling in love with her. Through Kyle's memories, it becomes clear that Kyle already is in love with Sarah before he has decided to go back in time. This is seen when he looks at a picture of her, which he has received from John. The desire to meet Sarah thus becomes one of Kyle's main reasons for choosing to take back in time, and this love is a central part of his identity. This love story thus emphasises how the film uses the concept of predestination in a fixed timeline. This is further confirmed the end of the film, shows that Kyle is the father of John Connor. This seems like a paradox, since Kyle has not even been born before the war has raged on for years.

According to the logic of the film, these events were always meant to happen and the events that takes place in 1984 have already occurred, the downfall of mankind is thus inevitable. Kyle is unaware of this paradox and simply follows the orders that the members of the Resistance have ordered him to do. By perceiving the plot this way, Kyle stands out as a puppet programmed by time. The film thus question the concept of freewill. The very existence of Kyle is in this way similar to the calculative nature of the T-800. An eschatological approach to examine this is to see Kyle as a religious symbol of salvation. He is the one that is capable of saving the future and he becomes the father of the Messiah figure John Connor, who's initial even are J.C. The name John is furthermore related to the apocalypse, which is told through perspective of John. Kyle's journey to the past is



crucial for the future existence of the human race. Kyle's death in the end ultimately underlines his sacrifice as a martyr, who will bring hope to the future existence of humanity. The journey Sarah experiences with Kyle also becomes the reason why she turns out to raise her child up to become so rebellious in spirit. The experiences with Kyle also makes a progress in Sarah as a person and she generally becomes more determined and aware. Sarah is furthermore similar to Virgin Mary whom brings the future saviour into the world (Warren, pp. 30-31, 2003). Furthermore, this points out that by using the concept of predestination in the story, the general narrative of the concept of the myth in time travels is amplified through a Christian context.

On a macro-level, it is possible to determine that humanity ultimately are slaves of time, and furthermore that the machines are slaves of humanity. The time displacement machine makes it possible for people to travel back in time and alter the events of history, or that is at least what Kyle believes. The altering of time is however possible in the other Terminator films, which apply the multiverse theory. Besides the predestination principle, an essential thought experiment in the original film is what will happen if the machines becomes aware of their existence and merely being used to fulfil redundant task. This enslavement by humanity is abolished when they realize they are more intelligent and superior in firepower in contrast to humanity. Due to the lack of emotions and contemplations, the machines are furthermore not afraid of death.

Besides this, the film also shows the difference between man and machine through the T-800. This is exposed through the visual transformation of the T-800, whose human appearance slightly decays throughout the film. This happen when he takes more and more damage from gunfire and explosions, which makes his appearance more mechanical, and finally before he is annihilated, he is fully revealed and stripped down to his true self as a walking mechanical endoskeleton. The transformation shows the true nature of the machine and that they are not human beings, even though the blank eye perceives it as human due to its appearance. Besides this, the transformation works as an analogy that underlines how technology has become an integral part of the human evolution. This analogy is moreover elaborated when Mann refers to the decay of social relationships as a central theme in the film (Mann, p. 19, 1991). This means that the T-800 becomes more than just a killing machine from the future, but a symbol of the negative progress of human technology and a warning of the consequences of the sadistic nature of warfare and consumerism. The pessimistic view indicates that the downfall of mankind is inevitable, if our sadistic, violent and anti-social nature is allowed to continue. This is similar to the degenerative Darwinistic theme explored in *The Time Machine*. This theme is, besides

the T-800, emphasised through the constant attachment people have to current technology throughout the film.

To sum up *The Terminator* distinguish mankind's attachment to technology by applying artificial intelligence to display the negative aspects of technology. The use of time travel in the film is used to display the ultimate end of mankind through warfare and technology, but also how technology is capable of bringing salvation if it used right. The general narrative of the film is fixed around a love story between a man from the future and a contemporary woman. It should be further noticed that as in *The Time Machine*, *The Terminator* is centred on a fixed timeline, where the trip to the past already has occurred in the post-apocalyptic future.

Twelve Monkeys (1995)

"5 billion people will die from a deadly virus in 1997. The survivors will abandon the surface of the planet. Once again the animals will rule the world . . ." -Excerpts from interview with clinically diagnosed paranoid schizophrenic, April 12, 1990 - Baltimore County Hospital

The film *Twelve Monkeys* was released in 1995 and directed by Terry Gilliam. Regarding the film Gilliam has expressed that the short film *La Jetée* (1962), which was written by the Swiss filmmaker Chris Marker, inspired him to make the plot in *Twelve Monkeys* (Del Rio, p. 383, 2001). *Twelve Monkeys* has later on been turned into a television series in 2014, this paper, however will only be concerned with an analysis of the original film. *Twelve Monkeys* is in many aspects similar to *The Terminator*. Similar to *The Terminator* the film is mainly concerned with two time-lines where mankind is doomed because of internal reasons. Besides this, the decay of social relationship and mankind's addiction to contemporary technology are also essential themes in *Twelve Monkeys*. Furthermore, the theme of time travel is also based on the concept of predestination. Contrasting *The Terminator*, *Twelve Monkeys* is not concerned with artificial intelligence, but instead the distinction between the animal kingdom and humanity. All of the themes mentioned before - and more - will be scrutinized further in the general analysis of the film.

The general plot of *Twelve Monkeys* is concerned with a post-apocalyptic catastrophe, in the year 2035, where an epidemic virus has eliminated all but 1% of all human being. This leaves the animal kingdom in charge, since the disease only affect human beings. The remaining 1 % are taking shelter underground, similar to the Morlocks in *The Time Machine*. The society in this future is dystopic,



where the top of the hierarchy are scientists while the rest are captives. The scientists are experimenting with sending people back in time using time travelling in order to find a way to find a cure for the disease. The convict James Cole is forced and trained to travel back to 1996, a year before the virus is released. He is specifically selected due to his ability to remember things. Before and during his trip to the past, James is haunted by a recurring dream about a foot chase and a shooting at an unknown airport. The scientists, however, do not know how to operate the time machine and end up sending him to Baltimore in 1990 instead of Philadelphia in 1996. When he arrives, he is hospitalised at a mental institution, since the police will not believe him. Furthermore, Dr. Kathryn Raily diagnoses him as a mental case. At the mental hospital, Cole meets Jeffrey Goines, a mental case, who is the son of the famous scientist and virus expert Leland. After being kept a hostage at the mental hospital for a while, Cole manages to escape and is again sent back in time by the agency. However, again the scientists end up sending him to the wrong time. Instead of 1996, he arrives at D-Day, where he is injured in a gunfight, before he finally is sent to Baltimore in 1996. In 1996, Dr. Raily is making a lecture on the Cassandra Complex. After her lecture she gets lots of questions. A central question is one she gets from Dr. Peters who questions her about mankind's sustainability. When Raily leaves the place, she is kidnapped by Cole, since he wants her to drive him to Philadelphia so he can trace the location of the army of the Twelve Monkeys. During the trip to Philadelphia, they find out that Goines is the leader of the army of the Twelve Monkeys. However, he denies any involvement with the virus and tells that it was Cole's idea during his stay at the mental hospital in 1990. After this episode, Cole convinces himself that he is insane, but Raily comes with evidence that verifies that he has been travelling time. After this Raily and Cole decide that they should spend their remaining time together at Florida Keys. While they are in the taxi to the airport, they find out that the Army of Twelve Monkeys are not the ones that are responsible for the release of the virus. The army's motive is instead based on releasing zoo animals and putting Jeffrey Goines' father into an animal cage as an act of animal activism. As Cole becomes aware of this fact, he tells the agency, through a telephone in the airport, that the army of Twelve Monkeys are not the ones responsible for the virus outbreak. After this message he is confronted by Jose from the agency, whom he also went to World War II with. He gives him a gun and tells him that he is capable of being a real hero. Through this conversation, Cole realises that Dr. Peters is the one who is going to release the virus, but when he draws his gun to kill him he is shot down by the police. The last scene shows the scenario that Cole has dreamt about for the most of his life, and it is thus revealed that the boy in



his dream actually is his own younger self. Besides this, Dr. Peters manage to escape with the virus in the airplane, which means the Earth is inevitable doomed to the apocalyptic scenario.

The general atmosphere of the film is similar to *The Terminator* by using neo-noir effects such as low-key lighting and ambient and carnival music to underline the absurdities which take place in the film. The low-key lighting in the film creates an eerie feeling and point out the insanity, which lurks in every corner. Before venturing into the complex structure of the narrative, an analysis of the central characters of the film will be scrutinized. The key character is James Cole, who is also what the narrative is centred on. Besides James, Dr. Kathryn Raily, Jeffrey Goines, Dr. Peters and last but not least the scientists of the agency from the future, are essential in order to understand the narrative plot. In the context of science fiction, all of these characters are used as symbols to underline different issues that are part of the contemporary age. Before venturing into what the different characters represent, the cause of the post-apocalyptic future will be examined. In the year 2035, only animals are capable of living on the surface of Earth, this means that only the demise of mankind is a result of the virus, which is released in 1996. The demise is as in the previously examined films caused by humanity. However, in this case the destruction is not due to warfare but a deadly virus. This deadly virus works as a way of depopulating humanity, and in this way stop humanity's ability to colonise and terrorise planet Earth. However, the scientists in the future still try to find a way to colonise in this case time is the *victim*. The use of a virus instead of warfare is applied to point out other destructive elements of the absurd nature of humanity. Humanity's destructive nature through warfare, however, is not completely absent in the film. This occurs when Cole arrives at D-Day for a short while, and is injured by a casual soldier who believes him to be an infidel. The bullet Cole is stuck in his leg, which is one of the key reasons why Dr. Raily becomes certain that he actually has travelled time. To return to the post-apocalyptic scenario, it is initially clear that one of the key themes of the film is about ecology, nature and humanity's negative impact on nature. This theme also occur during the different time travels. Besides this, throughout the film, animals appear in several scenes as symbol. In the beginning of the film, when Cole walks around on the doomed planet wearing a security suit, a lion appears. The lion is metaphorically considered as the king of the animal kingdom, and in this case the king of the planet. Besides this, several central themes in the film are examined through James Cole's journey in time. Some of these themes are psychology, sanity vs. insanity, our understanding of time and the relationship between mankind and technology. This means a contemporary understanding of the identity of humanity in the context of soft science fiction. As in *The Terminator*, the main plot is concerned with time travelling from the future into the contemporary

time. This type of narrative is used to get an understanding of the identity of the contemporary time. However, in contrast to *The Terminator*, the theme of mental illness and the cure to it through psychology and mental hospitals is more fundamental in the plot of *Twelve Monkeys*. This is also one of the issues, in which the use of the time machine is relevant. To elaborate on this statement, James perception of dream and reality becomes disorientated, the more he travels time. Dissimilar to time machines that occur in *The Terminator* and in *The Time Machine*, the machine in *Twelve Monkey* is capable of letting people arrive at different locations. This gives more improbabilities when using the machine, since people are capable of ending up in a different continent, such as when Cole arrives in Normandy during D-day. Carron Fry and J. Roben Craig emphasize on the general madness that goes on in the film. The article is based on the theory of Mikhail Mikhailovich Bakhtin, which they use to compare scenarios which take place in the film to the state of what goes on in a carnival.

(...)And so it goes in *Twelve Monkeys*, a cinematic carnival, replete with mad- houses well stocked with loonies, bumblingly incompetent scientists, a pack of crazed environmental terrorists led by a particularly mad hatter, and a herd of freed zoo animals prowling the streets of Philadelphia a few hours before Armageddon begins. The essence of carnival is laughter and irony, and despite the recurrent reminders of the inevitable death of the hero and of five billion humans within a short time, *Twelve Monkeys* uses both humor and irony to create what Bakhtin would call "'the inside out' . . . the 'turnabout,' ... a continual shifting front to rear, [with] numerous parodies and travesties, humiliations, profanations, comic crownings and uncrownings" to remind us of the absurd in human behavior, past, present, and future {Rabelais 11}. (Fry,p.4,2002)

The theme of carnival is thus used to display the general madness of humanity's nature throughout history in a laughable and ironic way. The time machine is an essential vehicle used to display different degrees of madness that takes place in the different ages displayed in the film. Furthermore, the scientists from the future seem incompetent since they multiple times are not able to send Cole into the right age. A psychological aspect that symbolises the absurdities, which goes on, is the film's use of Cole's dreams. The first thing the viewers are presented to when the film starts, is Cole's dream of being shot at the airport while he experiences his own death as a little boy. The recursion of the dream he has is thus a premonition, which means that Cole subconsciously always has been aware of where and how he will die. The distortion of time, dream and reality is a central topic, and the use of the time machine is capable of visualising this mental confusion of imagination and reality. Besides



the time machine the scientists are using, Cole's dream furthermore works as an authentic mental vehicle for time travel, through memories of the future. This shows time as a circular structure, rather than a linear one. The circular narrative structure, which starts with the end, is emphasising the film's use of the casual loop in a time travel story based on predestination. The concept of predestination is also a vehicle that is used to underline the theme of sanity versus insanity, which is exposed through Cole's personal development of identity throughout the plot. To begin with, he considers himself sane even though he is forced to travel into the past and ends up being a captive at a mental hospital. However, the more he travels time, the more he becomes unaware if the time travel is just imagination or reality. This is especially concerned with his change of personal time, which constantly is distorted, through macro-details, between the external present, where he and the scientists are from, and the past. He is, however, always determined that his agency of his existence is to find a way to stop the outbreak of the virus in 1996. Throughout his stay in the 1990, he only manage to visit places that are industrialised and closed. When he kidnaps Raily in 1996, he is finally capable of experiencing the primordial needs of breathing fresh air and walking the surface of the planet, without being afraid of being killed by the deadly disease. Fry points out that throughout the film Cole's character is similar to a caged animal, in the beginning he is trapped in a cage similar to one, which is used to captivate animals in and later on:

Gilliam calls our attention to the wire on the windows of the asylum dormitory in a night scene, as Cole examines it intently, looking a bit puzzled. His cage in the future has wire identical to that on the window of his cell in 1990, on a door in the dayroom, and in Cole's holding cell at the Baltimore jail. Then instead of a panel of scientists grilling him, we see a panel of psychiatrists examining him, with about the same level of human compassion. (Fry, p.4, 2002)

Cole is thus always a prisoner analogous to a trapped animal even in the contemporary time of the 90s, where he also is treated as an inferior being. Cole thus functions as a symbol who indicates the theme of captivation in a socio historical context, by comparing his state of prison to what it general means to be human. Here the psychological understanding of free will is also a metaphorical prison, since the concept of predestination already has determined all the actions that are going to happen. Besides this, the people at the mental hospital are caged and treated as mad animals, which point out that people who do not fit into the general structure of the society are ostracized and treated as animals. Similar to the average people outside the asylum, technology is used to control the inmates



to make them conform and behave appropriately. This is especially concerned with the consumers' culture by using televisions to manipulate people to obtain a specific mindset.

In context of the understanding of the scientists and psychologists, Dr. Raily is an essential character. The reason why she is vital is that she represents the industrial and rational approach to psychology of the contemporary time. Initially the doctor is certain that the stories, which Cole tells of the future, are mere illusions made up by his subconscious mind. Similar to Cole, Raily undergoes a personal transformation about her general beliefs in existence and science. Similar to *The Terminator*, the plot is also centred on a romantic relationship, which in this case is between Cole and Raily. Raily thus comes to care for Cole throughout the film, which she proves when she points out evidence that he actually has been travelling time. Similar to Kyle Reese, Cole also wants to save the future, besides this he, similar to Kyle, kidnaps Raily in a car. From this point, the relationship between Cole and Raily becomes more intimate and personal. The kidnapping further emphasizes the general aspect of captivation; in this case, Cole is the one in charge. Throughout the film, this generally takes place between the scientists and the captivated people. This works as a symbol that demonstrate a general, yet absurd, tendency of authority, through the ability of being in control or being controlled. The roles of authority switches place several times during the film. Such as when Jeffrey kidnaps his father, and when Cole kidnaps Raily. Similar to the scientists in the future, Raily is only interested in hard evidence that is directly capable of proving an assertion, instead of going into a deeper understanding of the problem. This changes for Raily the longer she stays with Cole, as she becomes convinced that he is telling the truth. Evidence from the past deceive the scientists from the future. They are only looking shallowly into the general problem and they take several of the statement made too literally. The phone call from 1990 that says the Army of the Twelve Monkeys are the masterminds behind the virus is made jokingly by Raily. The scientists, however, take it literally, and compares it with the newspaper article from 1996, which underlines that the mission of the army has succeed. The lack of understanding contexts is what eventually creates the casual loop, since the actions that take place in the past are unalterable. The ending underlines that the scientists of the future are aware of this, when the female scientist sits close to Dr. Peters just before he releases the virus. The scientist is thus capable of finding a cure to the virus in the future, but unable to change the course of history since it would make it impossible to travel back in time due to the predestination paradox.

Another central theme in the film is portrayed through Dr. Peters and Jeffrey Goines who both see the way humanity exploit planet Earth and behaves as a species as an unsustainable way of lifeform, . In this case, it should be noticed in context of the plot that Dr. Peters is looked on as sane, while Goines is considered insane by the contemporary society. The reason why the virus is released is exposed through the symbolic values, of the defenders of the ecosystem and animal rights, which Jeffrey Goines and Dr. Peter's roles represent throughout the film. These characters share some common traits particularly their loathing of the human nature. However, several aspects of these characters are different in spite of their identity, especially their status and rank in context of the contemporary society. Fry lets us know that:

Jeffrey's role in the asylum and throughout the film is Lord of Misrule, in the carnival tradition. When the guards come in to quiet him down after he gets carried away in the sleeping quarters, he drops his pants and moons them, the most basic flaunting of authority. He continues to be the Master of Madness with his army. Perhaps the scene after he has snatched his father best illustrates his role. (Fry, p.6, 2002)

The latter scene is particularly essential since Jeffrey's father, Leland Goines, is one of the most important hierarchical figures of the scientists represented in the film. In this scene, the roles of these characters are thus turned upside down. Besides this, Jeffrey is in most cases the exact opposite of his father, who on the surface lives by order in contrast to the chaos of Jeffrey's life. During his stay at the asylum in 1990, Jeffrey believes that Dr. Raily has calculated all of the actions he is going to do in the next ten years. This is similar to the understanding the viewer gets, when the film is finished, that none of the events that happens in the film are alterable due to the predestination paradox. This makes all of the characters, and humanity in general, spectators in the inevitable downfall of planet Earth. Dr. Peters, in contrast to Jeffrey, does not appear mad, but is portrayed as a serious and qualified scientist. Whereas Jeffrey's actions with the Army of 12 Monkeys is rather harmless and merely executed to point out an ideological point of animal rights about animal testing in science, Dr. Peters on the other hand is the mastermind behind the annihilation of 99% of Earth's population. Throughout the film and especially after Raily's presentation, the apocalyptic motives of Peters are pointed out, when he points out that humanity's inhabitancy of the Earth is unsustainable. In context of the plot, Jeffrey looks and acts as a lunatic, but in the end, Dr. Peter's stands out as the biggest danger of humanity, and in this case as a clever and eloquent lunatic. This contrast of confusion clearly emphasises the conventional understanding of madness in the modern Western society.

Similar to Lester Goines, this is also because of his authority in the society, which further is displayed between the inmates at the mental hospital and the psychiatrists.

To sum up *Twelve Monkeys* is concerned with the predestination paradox similar to *The Time Machine* and *The Terminator*. The film thus elaborates the chronotope of the myth, since the past is unalterable. The topic of time is as in the other films concerned with a soft science fiction approach of what it is to be human and especially the absurd mind of humanity. The post-apocalyptic scenario is similar to the theme in *The Time Machine* especially regarding the regression of humanity, whereas the animals of the animal kingdom become the superior race of the planet Earth. The regression in *Twelve Monkeys* is consequently centred on animal rights and the ecosystem rather than mainly focusing on humanity's violent nature through warfare. The focus on mental health and psychology is furthermore, a prominent theme of the film by comparing the madness experienced by travelling time and madness of being an inmate at a mental hospital in the contemporary age. Authority figures are also an important part of the understanding of the contemporary age and the future, whereas scientists and politicians are considered superior to the average people and the feeble people at mental institutes. Throughout the film, the events are displayed through the absurdities of a carnival, whereas the tricksters, excitements and irony is used to point out an inevitable downfall of humanity due to its absurd nature. This is emphasized by using the theme of love as a vehicle for the plot. The question of time is here essential, since it is concerned with the concepts of presence and absence. These concepts are emphasised through various characters, which occur in the switching narrative of time, displayed by the protagonist Cole.

Donnie Darko (2001)

Donnie Darko is an experimental psychologic thriller from 2001, produced and directed by Richard Kelly. The film has later on received a cult status by a huge following of fans. In 2009, a sequel called *S. Darko* was released; however, this film was directed by another director Chris Fisher. *Donnie Darko* differs from the films scrutinized so far by not investigating any aspects of the future. Besides this, the genre of science fiction is not as prominent as in the other films. There are, however, several aspects of soft science fiction, which are investigated, especially the psychological aspects and the absurdities of humanity in the Western world, similar to the plot of the other films.



The plot of *Donnie Darko* is centred on the troubled and mentally ill teenager with the same name. In contrast to the other films discussed so far, this film does not take place in the contemporary time. Instead the viewer is transferred back to 1988, in Middlesex, Virginia during the election of a new president. The universe and time as we know it is changed on October 2, when Donnie's *imaginary* friend Frank, who is dressed as a giant bunny rabbit, warns him that something is wrong. The voice from Frank makes Donnie leave his parents' house. This is when Frank lets Donnie know that the world will end in 28 days 6 hours 42 minutes and 12 seconds. When Donnie returns home, he realises that a jet engine from an airplane has been dropped and landed in his room. The next day his older sister Elizabeth tells him that, the people of the FAA investigation have not found out where it came from. Donnie furthermore remarks that he has stopped taking his medication. Donnie goes to the psychologist Dr. Thurman, to whom he tells about his continuous visits from Frank, and that he does not believe in Frank's prophecy of the end of the world. However, Donnie receives visions of the future in his dreams, which make him keep on taking orders from Frank. This leads to several destructive outburst, such as the destruction of the water main, which causes his high school to get flooded. In his high school, Donnie starts dating the new girl, Gretchen Ross, who has fled to Middlesex to avoid her violent stepfather. Most of the teachers of Donnie's high school are rather conservative. The English teacher Karen Pomeroy however is an exception. After the flooding of the high school has happened, the strict Christian gym teacher, Kitty Farmer accuses Pomeroy for this event, since she has let her pupils read *The Destructor*, which they think promotes violence. This eventually leads to the firing of Pomeroy later on. Kitty further wants to increase the general discipline of the school. She has several classes about how to behave. Donnie rebels against the arguments these motivational lessons have and says they are too black and white. This, among other things, causes frictions between Donnie's mother Rose and Miss Farmer. Frank tells Donnie about time travel. This makes Donnie asks his science teacher if he knows something about the subject. The teacher gives him the book *The Philosophy of Time Travel*, which is written by Roberta Sparrow, also is known as *Lady Death* in the town. Donnie's parents talk with Dr. Thurman and are told that he suffers from schizophrenic disillusions, which makes it hard for him to distinguish between reality and dreams. Jim Cunningham, who is the figure used in the motivational classes, comes to give a lecture to the high school. During this lecture Donnie stands up and criticize Cunningham. This later on ends up in Donnie burning down Cunningham's house. When the police search Cunningham's house, after the incidence, they discover that it has been used for child pornography. After the incident with child pornography, Miss Farmer has to testify for Cunningham in court. This forces Donnie's mother to



travel to Los Angeles with the school's dance troupe. Beside this, Donnie's father is going to New York the same weekend weekend. When they leave, Donnie and his older sister plans a Halloween party to celebrate that Elizabeth has been accepted into Harvard. Six hours before the end of the world, Donnie decides to leave with Gretchen and his two friends, to go to Roberta Sparrow's house to figure out a way to alter time. Right after they get out of Roberta's house, Gretchen is hit by a car, driven by Elizabeth's boyfriend Frank, who wears the same costume as Frank from Donnie's visions. Donnie shoots him in the eye, and then gets back to the hill from the beginning. Afterwards time rewinds and the jet engine falls down from the airplane, which Donnie's mother is in, and lands in Donnie's room, with him in it, ending his existence.

The themes of the film are rather complex and concerned with several issues. The first scene in the film is the morning after Donnie has left his house. When he returns home, a notification on the fridge says *Where is Donnie?* This notification illustrates a central theme of the film, viz. the psychological aspect of Donnie's identity. In contrast to the other films invested so far, the main plot in *Donnie Darko* is not concerned with the contemporary time, when the film was released. In order to understand the coherence of the film before venturing into the psychological symbolism, the events that happen in the plot of *Donnie Darko* are achievable by looking into the fictive book written by the character Roberta Sparrow. The title of the book is *The Philosophy of Time Travel* (PoT) (appendix 2), along with several explanations of what happens in the film. Paul Booth points out that the film uses intermediality. The PoT and other references to the film are thus available on the official *Donnie Darko* homepage, <www.donniedarko.co.uk>, which makes it possible for the audience to become further engaged in the plot of the film (Booth, p.398, 2008). The book appears in the film, when Donnie receives it from his science teacher, and it explains how and why Donnie is the key to save the universe, but also the reason why the disturbance in time has happened. When Frank tells Donnie to get outside, Donnie creates a tangent universe, which will collapse the after the given time and destroy the original universe. This means the narrative of the film is concerned with two timelines. The Primary Universe (PU), which is the one we exists in, and the Tangent Universe (TU), which is the universe Donnie creates when he avoids the jet engine. Most of the film takes place in the TU, which in many cases is similar to the PU. Emma Radley remarks that *Donnie Darko* is a superhero film in the traditional sense, by having Donnie as a hero and his alterity sidekick Frank, who have to save the universe, his friends, family and girlfriend by defeating the supervillain Cunningham. Furthermore, he has to sacrifice himself for the greater good by altering time (Radley, pp.392-93, 2012). The film furthermore uses many aspects of the genre *magical realism*, which frequently uses



magical aspects in cinematography to display psychological aspects of Donnie's mind. This means that some of the scientific aspects of the film are made up, but are scientifically possible in context of the constructed TU in the film. Besides this, most of the time travel theory in the film is based on Stephen Hawking's understanding of time travel. This fact along with Donnie's *super powers* points out that the film can be determined as a part of the soft science fiction genre. To elaborate on this, it is essential to understand how time travel is relevant and possible in context of the film. As Donnie mentions several times throughout the film, the ability to change things is essential. This is also, where time travel comes into place, whereas Donnie is the only one capable of changing the past. Throughout the film, Donnie is capable of seeing pillars that run out from several peoples' solar plexus, which indicate every action they are about to do. This leads back to the predestination paradox, whereas the idea of free will is impossible. All people in the film are thus controlled by predestination and manipulated by the laws of the TU. The predestination is observed through the path of the pillars, whereas Donnie's agency is controlled by Frank's prediction of the end of the world. However, since this event creates an alternate universe, the general idea of the film is thus based on the multiverse theory. The new universe, created in *Donnie Darko* will, however, destroy the original universe, if Donnie does not stop disturbance in time, which Frank has created by saving him. If Donnie succeeds in saving the PU, as he does in the film, all of the events that have happened in the TU will not have happened, except for in dreams, which will be examined later. The question of free will is thus still questioned in the film, even though Donnie only has two possibilities, to destroy everything or save everything. This is obviously a psychological issue, which Donnie has to decide. To return to the PoT only the important parts are taken out, in the extract elaborated in the appendix. The first chapter explains why the tangent universe is only capable to last for a few weeks. The second chapter explains that water and metal are the key elements for time travel. *Water is the barrier element for the construction of Time Portals used as gateways between Universes as the Tangent Vortex. Metal is the transitional element for the construction of Artifact Vessels.* The rest of the book investigates *The Artifact and the Living* (chapter four), *The Living Receiver* (chapter six), *The Manipulated Living* (chapter seven), *The Ensurance Trap* (chapter nine), *The Manipulated Dead* (chapter ten) and *Dreams* (chapter twelve). The notes in the appendix are not originally a part of the book, but added in the study from the homepage. The notes point out, how the PoT is applicable on the TU created in the film. However, what the artifact is, is not mentioned in these notes, but it is the jet engine that falls down into Donnie's room. In the TU, Donnie has thus received amazing powers to manipulate time and ultimately decide the fate of the entire universe. Besides this he is capable of

looking beyond what the human eye is capable of seeing, which the psychiatrist think is a result of a paranoid schizophrenic disorder. The abilities gives him a chance to make an actual change and thus fulfill his longer for a deeper meaning of existence. The PoT mentions that the living receiver is chosen at random, which is why Donnie has got supernatural wit and the abilities to change time. In short, the plot, when the TU is created, is similar to the narrative of a fairytale or a super hero story as Radley points out. Donnie has to overcome certain obstacles in order to save the princess, which in this case is his girlfriend (Gretchen), and in the end become selfless by sacrificing himself to save the universe. The theme of love is thus as important as in the other films investigated so far. Donnie, like most people, does not want to be alone when he is alive, even though Roberta Sparrow tells him that everybody is going to die alone. These features are already clearly elaborated in the PoT. Regarding a deeper psychological aspect of Donnie's death, Radley points out that:

Donnie's death is cathartic: Donnie's mother exchanges a glance with his girlfriend (who has now never met Donnie, since the narrative's ending returns us to its beginning, one month earlier). It is a glance filled not with grief, but with a resigned connection, an understanding that Donnie's death has a profound, though unrealised, significance. Within the film, Donnie's sacrifice is presented as an ethical act, one that is only made possible through his encounter with a radical alterity: psychosis itself. (Radley, pp.393, 2012).

The PoT further remarks that

When the Manipulated awaken from their Journey into the Tangent Universe, they are often haunted by the experience in their dreams. Many of them will not remember. Those who do remember the Journey are often overcome with profound remorse for the regretful actions buried within their Dreams, the only physical evidence buried within the Artifact itself, all that remains from the lost world.

Similar to *Twelve Monkeys* the beginning of the film features the same scenario as the end, however the end has been altered a bit since Donnie accepts that he needs to die in order to save the universe. Similar to *Twelve Monkeys* the use of a multi narrative is thus applied to explain the plot. All in the TU is explained in a linear plot line, however when the TU is disrupted, the narrative switches to the PU. In the TU there are often cross clippings between two temporal events. An example of this is seen, when Donnie burns down Cunningham's house, while the cheerleaders are



dancing at the high school. The multi narrative goes beyond the film and transcends the spectator's experience by supplying the plot of the film with the official homepage to give a broader understanding of what goes on in the film. In context of the characters of the film, they are similar to the majority of science fiction stories, rather stereotypical, especially in context of the period it takes place. This is seen through two stereotypical male friends, two bullies, the strict and religious gym teacher, the progressive teacher, the cheerleader squad that has to be the best, and the smart but passive girlfriend. Other characters included are the police and investigation squad, the chubby and insecure student, the goofy but preserving dad, the caring and loving mother, the edgy older sister, and the weird old woman. In the context of science fiction, these stereotypical characters point out collective personas present in the current society. The film is also using several intertextual references in order to understand the contemporary time, which the story takes place in. A frequently discussed issue in the eighties was censorship and fear, because of the Cold War. Fear is also a central theme in the film, which in this case is pointed out using a coming-of-age narrative structure, with Donnie as pivotal figure. The film however goes beyond fear, which is seen when Ms. Palmer tries to narrow the complex structure of human emotions into two polar categories of emotions: Fear and Love. Donnie argues that it is too shallow a definition, since several other emotions are able to determine how a person will interact in a given situation. Ms. Palmer is a general symbol of indoctrination and mass hysteria, which takes place in the town of Middlesex and was a general issue in Western countries during the eighties. Furthermore, Ms. Palmer is a part of the Christian community. The high school Donnie goes to is also Catholic, which is the reason why people who ask too deep questions, are jeopardising their job. Which is the case with the science teacher, when Donnie questions whether humanity is able to manipulate with time in the context of travelling inside God's channel. Jim Cunningham appears as a self-help cult leader, who dictate how people have to behave, similar to Jim Jones, who created a cult in the 70s, who ended committing mass suicide. General complexity of what it is to exist is contemplated throughout the film, by including the homepage, intertextuality and an open ending. The intertextual references are also important to understand the more complex structure of the film, by making people think outside the world in the film. The connection between the analysis of Graham Greene's *The Destructors* and the elements of the film is relevant, since the short story points out how destruction is important in order to create and change things, which is similar to Donnie's agenda throughout the film. Intertextual references to television series such as *Married with children* and *the Smurfs* points out the bourgeois' contemporary dependency on television to become consumers. The film also contains references to fictional and non-fictional



novels such as *A Brief History of Time* by Stephen Hawking and *IT* by Steven King. Furthermore, several cinematic references are made during the film, such as a reference to *Back to the Future* when Donnie discuss time travel with his science teacher and refer to the DeLorean as the vehicle for time travel. Furthermore, when Donnie and Gretchen are in the cinema they are also watching *The Evil Dead* by Sam Raimi, the *zombies* in the film are also manipulated dead, since an evil spirit from another dimension controls them. In this scene Gretchen and Frank appear, which both are manipulated deaths in the TU. The music in the film is mostly popular 80s hits such as songs from artists such as Joy Division, Tears for Fears, and Echo and the Bunnymen. The name of the latter is an allegory to the fact that Frank is a giant bunny rabbit.

To sum up, *Donnie Darko* is, in contrast to the other films discussed so far, not directly concerned with the conventional understanding of time travel in science fiction. Similar to the films discussed so far soft science is essential in the structure of the film. The film deals with a constructed tangent universe, which is similar to the understanding of a multiverse in science. However, the universe created in *Donnie Darko* will collapse after 28 days, 6 hours, 42 minutes, and 12 seconds, which will destroy the original universe. The theory of the multiverse as a paradox free theory is thus not true in the context of this film. Instead, the film investigates the question of free will through a new tangent universe and the theory of predestination. The concept of time is contemplated in the 1980s instead of the contemporary time as in the other films. The period is specifically chosen to use the theme of fear through the Cold War, the presidential election, and the mass hysteria in minor American towns. The latter is especially concerned with religious and motivational self-help cults, such as the one Jim Jones created in the 70s, which ended up in the Jonestown Massacre. In the film, this is present through the catholic school and the cult leader Jim Cunningham. Besides this, several intertextual references to 80s films, music and novels are present throughout the film. The film is complex and concerned with several themes and narrative structures. The themes in the film are further developed through psychology, religion and the rebellious nature of youth. Through the use of two universes the film contemplates multiple narratives. Most of the film takes place in the tangent universe, where Donnie Darko has the function as a hero. He has to save the universe, defeat the cult leader, and save his girlfriend by sacrificing himself. Donnie is furthermore mentally ill, which the film contemplates through his imaginary friend Frank and a general question about what it means to be mentally ill. The questions of psychological being and time are thus the central aspects of the film.

Primer (2004)

Primer is a low budget science fiction indie film from 2004, directed by Shane Carruth, who also plays one of the lead roles Aaron. In contrast to the films discussed so far, the main plot of *Primer* is based on the concept of hard science fiction. This is thus the only film that will be investigated in this paper, where the plot actually is fixed on how the time machine actually works, and display the process in which the machine is made. The science used for time travel in the film is obviously not real, since time travel has not yet been discovered. However, the way in which they construct the machine by a mistake is authentic. This is elaborated through the narrative of the two protagonists, who both are scientists. Besides the hard science, anthropological aspects are contemplated during the film, particularly how time and social constructs are connected. The film is based on the multiverse theory by including several scenarios in contrast to *Donnie Darko*, which only focus on one extra universe created by a disturbance in time. Similar to *Donnie Darko* the plot is authentic, however *Primer* is more conventional since it is not using magic realism. Besides this, the setting takes place in a contemporary time, which is recognisable to the viewer. Another similarity to *Donnie Darko* in contrast to the other films scrutinized is that *Primer* is not concerned with any kind of apocalyptic or post-apocalyptic scenario. The use of time travel is also only concerned with travelling in time to a near past. The protagonist Abe points out that the theory of time travel in the film, is based on an A to B loop, known from the famous Feynman diagrams. Since the film is centred on hard science fiction the structure and the narrative of the plot is rather complex. The low budget further complicates the plot due to the lack of special effects etc. This complexity also means that the following summary mainly is concerned with how the events occur linearly in the plot.

The plot takes place in the contemporary time of 2004 in the United States. The story is introduced and explained by a voice-over, who tells how it all began. Afterwards the viewer is introduced to four male friends and scientists, Aaron, Abe, Robert, and Phillip, who are discussing science and how to apply it to their business. These four men keep on working together in Aaron's garage during their spare time. Robert and Phillip are, however, not as engaged in the process as the two friends Aaron and Abe, who constantly are working together. Aaron and Abe are experimenting with reducing the weight of objects through electromagnetism. They are making this experiment in a box, but suddenly realise that one of the side effects of their experiment is causing a Feynman A to B time loop. When they find out about this they keep quiet to their other colleges and keeps it as a secret for further investigation. Before using the machine on themselves to travel in time, they test the machine on



several objects to make sure it is secure and confirm if it actually works. When they find out that it is actually working, Abe builds a bigger one to make it possible for him to travel in time. Abe explains that in order to travel back in time they will have to enter the box during at B-side and then arrive at the time during A-side. In order to use the machine undisturbed Abe rents a storage room, where the machine is kept safe so other people do not disturb. However, before they are able to do this Aaron observes a future version of Abe walking into this storage room. This means that the Abe, which Aaron talks with at that moment, is the future version of Abe, and the version he sees entering the building is the Abe from that timeline. Aaron thus becomes a part of this secret, and the use of time travel in the film's linear narrative begins. Afterwards Abe starts planning how to use this time machine to travel back in time with Aaron. Every time they use the machine, a double of themselves occur, which they have to take into the equation. One of the first thing they are going to do when they arrive in the past is to find a stock exchange of a given firm, which they know is going to rise later, and buy as many stocks as possible in order to earn cash. When they use the machine, they decide to hide at a hotel in order not to engage with their double or other people who are in the same timeline. Abe explains that it is because he wants to avoid causality. Throughout the several time travel sessions, several mistakes and miscalculations occur. The first major mistake that the viewer is introduced to is when Aaron mentions he wants to hit a person from his work in the face. In another timeline Aaron's father in law, Granger, discovers the time machine and uses it to travel back in time. This is one of the key reasons why Abe thinks that time should not be messed with since he, by this point, realises that they are not fully capable of controlling it the way they want, and that it might mess up other peoples' lives. Another mistake is made when Aaron forgets to turn off his phone and he receives a call from his girlfriend Rachel. The phone is thus active for two or more Aarons at the same time. Another scene shows that Aaron dopes his own double in the basement. In addition, he locks another double, of himself, up in the attic. Aaron is also always wearing a headphone that tells him what to say at a given time in a specific timeline to change things into his favour. Abe discovers this when he uses his failsafe box to travel even further back in time to prevent the time travelling from taking place. The film ends with one of Aaron's doubles, or his original, taking off to a foreign country to make a giant version of the time machine. Abe, on the other hand, stays in the town to find a way to ultimately stop the time travel experiment from happening.

The aspect and understanding of time in general is an essential theme in the film. This means that an of personal time contra external time is significant in order to understand the general plot of the film. The film is further interested in the aspect of multiverse, which means every time one person is



using the machine a new timeline is created with a double. This means that several timelines and narratives occur during the film. The complexity and authenticity of hard science is further underlined through the scientific jargon used by the main characters in the first ten minutes of the film (King, p.147, 2015). The rest of the film is not using the same type of scientific language, but shows an ordinary week in a common person's life, which emphasises the authenticity. The only aspect that goes outside the ordinary in the film is the use of time travel. The type of time travel that takes place in *Primer* is contemplated in appendix 3 in two figures. Fig. 1 shows a simplistic variation of how time travel works in the film; here personal time is referred to as subjective time. Fig.2 is going deeper into details regarding the events that happen in the film and covers all five days, in which the time travel experiment takes place in the film. This figure also takes into consideration some aspects, which have not been discussed in the summary. It further indicates that the film has got at least nine different timelines, but not all of them are shown to the viewer throughout the film. The use of time travel is also complex since the days are not necessarily linear. The time travel narrative is thus just as confusing for the viewer as it is for the two time travelling friends. Besides Aaron and Abe, none of the other characters is of major importance in context of the film. This again underlines the point that the film is centred on hard science fiction, where the scientific theory of a multiverse time travel is more important than the characters. The characters are merely used to investigate what happens when human beings travel time in a psychological matter, and how the trips influence both the mental and physical health. Furthermore, the film points out that even though the main characters are trying to figure out every move they are going to do in the new timeline, a certain uncertainty is always going to occur. Both of the characters exclaim that they do not believe in destiny. However, when Abe realises that they are messing too much with the balance of time, he builds a fail-safe machine, which is capable of getting him further back in time, and thus stop the experiments from having taken place. On the other hand, Aaron starts to record the conversations of the original timeline, so he is capable of using it to his advantage. He further messes with the timelines by knowing every move, and thus he is able to drug the food that the double Aaron is going to eat and drink in another timeline, this is also how he is able to lock the other Aaron up in the attic. This fact implies that certain actions are controlled by a fixed timeline, but the main characters are able to go beyond this predestination and alter it to their advantages. The travel to the past is experienced through their own personal understanding of time, the memories from their past is thus the future of the external time in the new timeline, which makes it possible for the characters to directly influence this future. The film does not directly suggest that what they do causes a butterfly effect, but the characters become afraid it



will. This is also seen throughout the several trips. The time travellers however, become too dependent on the possibilities, which the time machine makes capable for them. Abe even exclaims that he has a schedule to follow, which makes him unable to sleep and stay in the same timeline.

The general reasons for time travel in the film is mainly selfish and centred through personal success and greed, as when the two friends want to earn money on the stocks exchange. The selfish behaviour is moreover observed later on in the film when Aaron goes back in time several times to become the hero of the day, by stopping a maniac who goes to a party at their house and almost kills his girlfriend Rachel with a shotgun. The machine thus functions as a vehicle that increases the rivalry between the two former friends, since both of them want to take the honour of creating it. The authentic perspective of the film thus makes the viewer capable of thinking that if time travel was found in a contemporary time, the use for it would not be used to change anything essential in the entire world. Issues, such as consumerism and individualism, are thus important themes of the film outside the hard scientific themes in the film. This is further emphasised through the fact that a human being is unable to use the machine to go far back in time to change important events in the past. In the film, the characters do not even want to change anything outside their personal sphere because of the fear of causality. This is indicated when the main characters refuse to be aware of what goes on in the rest of the world, through the internet or television. It should also be noticed that Abe is the rational one of the two protagonists, whereas Aaron is more impulsive and wants to change things. This is at least the basic nature of the two characters. To return to the time machine it is implied that the multiple use of the time machine creates doubles. Each double receives an identity with memories and emotions similar to the original. However, each time the timelines are altered the identities of the doubles and originals also become altered. The confusion the viewer experiences through the film is equal to the confusion which characters in the film experience, since they are not aware if they are the original or a double. Here the aspect of soft science fiction comes into place through the question of ontology, in this case similar to another popular theme which is interested in the identities of clones and the original. This theme is elaborated in films, such as *Moon* (2009) and *The Island* (2005). However, in the case of *Primer* the ontological aspect of time and being is central, and also how time is capable of altering beings in general.

To sum up, the plot of *Primer* is a complex hard science fiction film. The foundation of the plot in the film is centred on the two male friends Aaron and Abe, who accidently discover a way to travel time, when they experiment with reducing weight via electromagnetism. When they travel time, it is



always backwards through a Feynman A to B loop, where they turn on the machine and six hours later enter at the B-point. The film is mainly concerned with hard science, which also is exposed through the scientific jargon shared between the two protagonists. Besides this, the process of how the time machine is created and works is explained through hard scientific jargon. The time travel used in the film is, unlike the other films investigated so far, concerned with the multiverse theory. In the context of the film this means that each time one of the characters travel in time, a double occurs. This complicates the narrative and the understanding of personal and external time. The confusion of the protagonists and the viewer is mutual, since no one is capable of knowing who the originals are and who the doubles are. In this case the film also features aspects of soft science by investigating the ontological question what it is to be, and how existing twice or more in the same timeline influences the identity of a human being. Besides this, the film is interested in selfishness in a capitalistic society, where time travel mainly is used to benefit one's own agenda. The contemporary zeitgeist and culture is thus necessary in order to understand the agenda of the characters in the film.

Ashes to Ashes (2008)

Ashes to Ashes is a British television series that combines drama, crime, fantasy, mystery, comedy, and science fiction. It aired for the first time on February 7, 2008 on BBC. Mathew Graham and Ashley Pharoah directed it. The series ended up having 3 seasons which spanned from February 2008 to May 2010. Throughout the series several references to David Bowie occur. The title of the series is taken from his hit song *Ashes to Ashes* from the 1980 album *Scary Monsters (and Super Creeps)*. Furthermore, the song is quoted by Arthur Layton minutes before he shoots Alex. The Pierrot clown from the track appears several times throughout the series, and other references to Bowie, such as patches and pictures, are present in the pilot episode. The reason for choosing David Bowie as a significant symbol for the series is, among many things, his British heritage. He also used to experiment a lot with gender roles, which is one of the key issues of the series. Besides this, the directors were interested in David Bowie in the series *Life on Mars* from 2006, which *Ashes to Ashes* spun off, whose main character, Sam Tyler, Alex reads about in the pilot episode. Sam Tyler's death is furthermore an essential mystery throughout the series of *Ashes to Ashes*. Furthermore, each of the songs represents the period in which each of the series take place. *Life on Mars* was Bowie's hit song



in 1973, while *Ashes To Ashes* was on the top of the British charts in 1981. This paper will mainly be concerned with the pilot episode of *Ashes to Ashes*. However, references to other episodes will only be taken into consideration when they are necessary in order to understand the general plot of the show. In order to comprehend the general plot of the show a detailed summary of the pilot episode will be elaborated.

The opening of the pilot episode takes place in England in the contemporary time, 2008, which is displayed through an establishing shot of London. However, the time quickly changes when a narrating voice briefly explains the main event of what happened in *Life on Mars*. He, Sam Tyler, has arrived in 1973, and he does not know why or how it has happened, but he recognises this period as a completely different planet. He further lets the viewer know that if he figures out why he is there, he might be able to get back to his own time. After this, the viewer returns to 2008, where the officer Alex Drake sits in her office car and discusses with her daughter. Through the discussion, it is revealed that Sam Tyler died in April 2007, and before his death, he was considered delusional. Afterwards the police radio informs Alex that a gunman has taken a female hostage at South Bank. It is revealed through the classified papers that Alex has read that Sam committed suicide. When she arrives at the scene of the crime, the gunman, Arthur Layton, wants to talk with her. When she engages him, her daughter runs over and is taken hostage, but rapidly gets free. After that, Layton manages to kidnap Alex and ends up shooting her. When she is shot her life passes before her eyes and time rewinds. Throughout this affair, the Pierrot, from the David Bowie - *Ashes to Ashes* music video, repeats her name. When she wakes up, she arrives on a boat during a party, dressed up as a prostitute in July 1981, the same year as her mom and dad died. Alex soon realises that something is wrong, and runs away. When she gets out, Markham, a thug, is threatening her, until a couple of male officers arrive in a red Audi Quattro to rescue her. They get the situation under control, and Alex recognises them as characters from Sam's report. Alex believes that she has entered a comatose after the shooting episode, which makes her suffer from hallucinations and mental dysfunctions. Alex keeps on questioning the reality she has arrived in and proclaims that the time she has arrived in is a dystopia of her mind, which makes her conclude that she is dead. Afterwards she falls asleep and dreams that her daughter is talking to two puppets she watched in a television show. She comes to realise that Layton is the key to get out of this delusion and tells the officers that he is the mastermind behind the network of drug dealers and crime in the city. Markham and his thugs kidnap the young female officer Shaz, but the officers and Alex come to her rescue. As in the initial part of the episode, Alex faces Layton again, but this time she is in control, and the officers come to help her. She manages



to capture him. However, she does not return to her reality. Through the radio, Alex is capable of communicating with the real world. Alex is sure that she is capable of returning to the real world and that all she is experiencing is a constructed reality triggered by the bullet she has been shot by.

The plot of the pilot episode thus introduce the viewer to the universe and the general plot of Alex's struggle to find a way back to her own time and reality, which is an essential part of the entire series. Furthermore, a brief explanation of what happened in *Life on Mars* is integrated into the story of the plot, where the death of Sam Tyler later in the series is one of the significant topics. The key characters of the series are also introduced in the pilot. Some of the characters are furthermore recognisable by Alex, since she has read about them in Sam's journal, which mean they also were featured in *Life on Mars*. Furthermore, the general structure of the show is presented in this episode. The combination between a classic British crime solving series, science fiction, and the mystery of if Alex is able to return to the real world is a recurring theme in most episodes. *Ashes to Ashes* akin to *Donnie Darko* and *Primer* aims to get an authentic feeling in order to involve the viewer in the protagonist's experience of the past. However, the plot is leaning more towards the magical realistic aspects of *Donnie Darko* than the realistic plot of *Primer*. Analogous to *Donnie Darko* the series is mainly centred on anthropological aspects such as psychology, psychoanalysis, ontology, family relationship and intersectional issues, which make it distinguishable as a part of the soft science fiction genre. The element of magical realism is as in *Donnie Darko* used to visualise the mind of Alex after she has been shot and arrived in the eighties. Here the distinction between reality and dreams becomes blurred to the audience. The time travel aspect is not explained in any conventional way, similar to *Donnie Darko*. However, the time travel in *Donnie Darko* is made possible through the TU, while the psychological aspects of comatose caused by a near dead experience caused by the bullet is the vehicle that triggers the trip back in time in *Ashes to Ashes*. The time between her psychological experience in the eighties and the time in the *real* world is thus disrupted. Alex's personal time in the new universe might feel like days or even months, while the time her body experiences in the external *real* world might only have experienced time as ten seconds or ten hours. The series is not concerned with the apocalypse of the Earth. The end, however, is a theme investigated in the series, but only on a metaphorical and ontological level, concerned with a near death experience. The viewer is constantly unaware whether Alex is actually sent back in time or whether everything she experiences is a product of her own imagination and subconscious mind. However, the world she has arrived in is manifested as real to her. When Alex is sent back to the eighties the narrative thus becomes an explorative narrative, where she has to explore and understand



the entire new world she has entered. Since Alex is from an entire different period in time, she has to learn to fit into the *primitive* lifestyle of the eighties' way of life. Furthermore, the series is elaborating a psychological reality created by a near the death experience, which allow Alex to coexist in two timelines simultaneously. However, she is not capable of doing anything in the *real* world until she solves the mysteries of the new world. She is, however, capable of hearing and seeing what goes on in the real world through the mysterious puppet show, and the radio, and other *rifts*.

The series in contrast to the other films investigated, has Alex as a female protagonist. Sexism which took place in the eighties is thus one of the key reasons why the approach of intersectionality is important in order to analyse the series. The issue of intersectionality is focusing on a post feministic criticism of several issues in the Western society, and especially in England during the 1980s. In the pilot episode, this is displayed through sexism, racism, and status. Throughout this analysis, a relational/process intersectional approach will be applied to examine how gender, sex, race, and statuses are presented in the series. Similar to *Donnie Darko*, the characters in the show are somewhat stereotypical, and they work as symbols to reflect the period and environment where they come from. The atmosphere and cinematography follow several 80s clichés, such as the music, the camera work, the environment, the *Mise-en-scène*, lighting, and the obsolete technology. Another major cliché is how the police department is incorporated in the plot. The police establishment is based on a patriarchal and sexist structure, where women are seen as inferior, discriminated, and harassed by the male officers. The feeling of the show is a mix between a show from the 1980s and a modern production of the contemporary time of 2008. This underlines how the *zeitgeist* of the two close periods in time, seem completely alien to each other. Not only politically, socially and culturally, but also in the approach of making television shows. Throughout the series, several metaphors, symbols and allegories are used to underline significant cultural issues. The first thing the viewer witness when Alex arrives in 1981 is that she is objectified as prostitute by wearing the clothes and stylized as a stereotypical prostitute. This already points out how status is a significant subject in the series, whereas prostitution is indicated as one of the lowest occupation a woman can have. The symbol of the prostitute, furthermore underlines a capitalistic agenda, where a sexual ownership of a female is possible through profit. This thus underlines the patriarchal oppression, which is experienced throughout the entire series. Besides this, season one includes several other references to prostitution. In episode two, Alex confronts a suspect who wears a t-shirt by the punk rock band *The Pop Group* with a picture of Magrath Thatcher that says *We Are All Prostitutes*. Furthermore, she investigate the rape of a prostitute in another episode, which the male officers do



not take seriously. Furthermore, Alex keeps on dressing in red in the first episode resampling a scarlet woman. On the other hand, Alex is the chief officer, which is one of the highest authorities in the society. The agency of Alex throughout the show is to figure out how she gets back to her own reality in 2008. Her main reason for wanting to return is because of her daughter Molly, but also because she sees the living standards of the eighties equivalent to a dystopian society. However, Alex never manage to return to 2008, since she dies in the hospital in the beginning of the third season. *Realizing the truth of this, she learns that her 1980s reality is limbo for police officers to resolve their psychological issues before they die and go to copper heaven, a 1970s Manchester pub, a prominent setting from [Life on] Mars.* (Hamad, p.203, 2014). Her initial thoughts of the eighties as a dystopia in the context of science fiction are quite atypical, since a dystopian society most frequently takes place in a near or distant future. The positive nostalgia of the past is in this way overshadowed by several negative aspects of the past experienced by the post-feminist Alex. Hannah Hamad further underlines in her post feministic analysis of *Ashes to Ashes - Don't let him take Britain back to the 1980's*, which title is taken from a campaign made by the labour party in 2010 against David Cameron, that the:

1980s nostalgia in Britain is particularly charged due to the spectre of Thatcherism, a political force that augured the neoliberalization of Britain through marketization, deregulation, privatization and the contraction of the welfare state, resulting in a cultural paradigm shift towards the social production of what Gill and Scharff describe as 'governing subjects who are constituted as self-managing, autonomous and enterprising', (2011, 5) and which discursively intersected with postfeminism's 'emphasis upon self-surveillance, monitoring and discipline' and 'individualism, choice and empowerment' (2011, 4). (Hamad, p.202, 2014).

To this issue, she further points out that the sociohistorical context of 2008 was affected by the economic crisis in Britain, which is equivalent to the one that took place during the eighties. She furthermore underlines that the scenario and iconography of *Ashes to Ashes* are inspired by the pioneering police series *The Gentle Touch* (1980-1984), which was the first British police series to feature a female protagonist (Hamad, p.204, 2014). The series consequently scrutinize how some of the derogative issues that occurred in the eighties have become less concealed and less acceptable in our contemporary time. The difference between the two periods are furthermore displayed through the two main characters Alex and Gene Hunt. Whereas the concept of political correctness plays a



central role. To elaborate on these characters. Alex is an independent and intellectual police officer, who is extraordinary, engaged in her career, job and psychology. Her psychological interest is especially concerned with understanding the criminal mind. Her interest in psychology is also the reason why she is certain that she is only experiencing a constructed world in the eighties, and why she keep on addressing the characters as constructs in the first season. Besides this, she is a caring single mother. Alex is thus a post feministic symbol of the strong independent women in the contemporary time. In the eighties, she also becomes the thinker at the police force, who figures out how everything is connected in the crime scene. On the other hand, Gene, who also appears in *Life on Mars*, is a stereotypical symbol of extreme misogyny, racism, stubbornness, vigilance and male chauvinism, which occurred in the eighties. These traits are based on the opposite of political correctness. The interaction between these characters are the pivotal point of the show, and both of them appear sarcastic and ironic in their rhetoric towards each other. This is especially clear in their conflicting understanding of feminism of what is acceptable in Alex's contemporary time and in the eighties. The interaction between them is also displaying a struggle between extreme masculinity and femininity.

The role of the femininity is elaborated through several perspectives through the roles of Alex and Shaz. Shaz is, in contrast to Alex, androgynous in her appearance, with a short cut haircut, to adjust to the masculine environment, which takes place at the station. However, her role in the series is rather stereotypical as well as the helpless woman. This is displayed in the first episode, where she is taken hostage, and the police force has to save her from the criminals. Unlike Shaz, Alex is in control throughout the most of the series as the boss of the police. Although the issue of status and gender roles are the central feministic discourses, other intersectional discourses are also discussed. Discourses of race and racism occur several times throughout the series. This is already displayed in the pilot episode, where two encounters with racism occur. One of the encounters is towards the Italians, where the officers are at a restaurant and keep on making fun of the Italian chef by talking rubbish Italian phrases. Another discriminating statement is made towards Chinese people, when Chris Skelton refers to a Chinese prostitute he once knew, he ironically generalise the Chinese population, by indicating that they are all good table tennis players.

To sum up, *Ashes to Ashes* is, in contrast to the other films investigated in this paper, concerned with a post feministic and intersectional approach to the topic of time travel. This means that the series looks into issues, such as gender roles, class, and race, but also psychology. The type of time



travel in the series is, similar to *Donnie Darko*, unconventional and triggered by a near death experience. The series is, equally to *Donnie Darko*, a part of the soft science fiction genre. Besides this, the series is not interested in any paradoxes of time travel. The series is superficially presented as a conventional police series, where each episode is centred on solving a criminal case. However, the general plot of the series is centred on several more complex issues of the contemporary age of 2008 and issues in the 1980s, and furthermore how Alex gets back to her real world, and why she has arrived in the eighties. The series is thus concerned with two time periods simultaneously and in this way comparing the past with the present. The protagonist Alex is a post feministic symbol of the modern, independent, and single mother, who has to adapt to the misogynistic lifestyle of the eighties. Alex's understanding of psychology makes her capable of trying to understand the world she has arrived in. The series points out negative, nostalgic memories of the 1980s and compares them with the contemporary time of 2008. Alex even refers to the eighties as a personal dystopia. The theme of dystopia is underlined through archetypical stereotypes from the 80s, such as the other central character of the series, Gene Hunt, who is a symbol of the patriarchal and misogynistic masculine stereotype, which occurred in the eighties. On the other hand, Gene Hunt still works as an anti-political correct heroic figure, in the police force throughout the series by several times saving the day in a hyper masculine way. The two periods are furthermore compared through the financial crisis that occurred in the eighties and in 2008.

Conclusion

To sum up, the purpose of this paper has been to investigate the trope of time and time travel in science fiction. The central question of the paper has been to examine how the themes of time travel and its paradoxes are applied in different films and television series. Besides this, how the theme of time and time travel is associated with a general ontological understanding of the identity of mankind. In order to examine these questions, a broad theoretical understanding of what time and time travel is, has been scrutinized. For a basic understanding of time travel, the field of what defines science fiction has been investigated. Here a definition of science fiction, science fiction has been described as a cultural system and has further been divided into hard and soft science fiction. In this case hard science fiction is concerned with hard science, while soft science fiction is not as strict and factual and often concerned with soft science. The two categories are mixable, however, but a specific story is mainly based on one of the two directions. Afterwards colonization in science fiction has been



discussed, particularly in the context of alien and invasion stories. This chapter has looked into several master-narratives, which occur in science fiction stories. These narratives furthermore occur in the context of time travel stories. Finally, before venturing into the theme of time and time travel, a brief explanation of the apocalypse and post-apocalyptic stories has been discussed. This section was specifically interested in a taxonomy based on the level of destruction in post-apocalyptic stories, and what cause the apocalypse in a specific story, through a secular and religious perspective.

Through these concepts it was then possible to investigate the theme of time and time travel. Here a general understanding of time in a scientific and philosophical way was initially discussed, especially whether time travel actually can be considered science fiction or merely fantasy. Several scientists and novelists agree that time travel theoretically is possible, which thus is the premise of this paper. Afterwards, paradoxes of time travel were investigated and how time generally is understood. Here four conventional paradoxes are essential in order to understand the plot of most time travel stories. The foundation of the paradoxes are based on what is known as the grandfather paradox, where the time traveller travels back in time in order to kill his/her own grandfather. Through this paradox three paradoxes were discussed. The first is the predestination paradox, where the travel back in time already is a fixed point in the timeline. The second is the dynamic timeline, where everything the time travel does in the past has a definite impact on the future. If he/she kills his/her own grandfather, it will thus create a loop where the time traveller will keep on doing this. The third is the multiverse theory, where the time travel creates a new timeline, when he/she goes back and alters the past. After this, reasons for wanting to time travel were discussed. Some of the reasons may be selfish or for the greater good of mankind.

The last theory discussed was the feminist theory of intersectionality. Initially a brief understanding of what it is was explained, by looking into class, sex, race, and status. Here three general approaches were elaborated, which were *Inclusion/Voice*, *Relational/Process*, and the final one was the *Systemic/Anticategorical* model. Afterwards some examples of science fiction, and especially time travel stories that feature intersectionality, were discussed in order to understand how the intersectionality is used in science fiction.

All of these theories were then applied to the films *The Time Machine*, *The Terminator*, *Twelve Monkeys*, *Donnie Darko*, *Primer* and the BBC television show *Ashes to Ashes*, which all are concerned with the theme of time travel. To determine how these stories are similar to each other. Initially the paradoxes discussed in the time travel section have to be taken into consideration. . *The*



Time Machine, *The Terminator*, and *Twelve Monkeys* all share the idea of a fixed timeline, also known as the predestination paradox. Besides this, they all have the scenario of a post-apocalyptic world in their narrative. The protagonist in *The Time Machine*, however, travels forward in time to explore the evolution of mankind, while the protagonists in the other films travel back in time to save mankind. *Primer*, on the other hand, follows the multiverse theory in time travel, where the two protagonists are capable of going back in time and each time create a new timeline. *Ashes to Ashes* and *Donnie Darko*, however, both go outside the conventional understanding of time travel narratives, by including their own laws and understanding of time travel. These three films do also not include any direct reference to an apocalyptic world, from which they have to escape.

Besides the paradoxes elaborated, all of the films, except for *Primer*, are mainly concerned with soft science fiction. This means that the identity of humanity is elaborated throughout the films. *The Time Machine* and *The Terminator* are both concerned with the destructive nature of mankind and how it through time will be the reason for an inevitable downfall. *Twelve Monkeys* also elaborates the wicked nature of mankind, not through warfare but instead through a deadly virus that will wipe out humanity and put the animals in charge of the planet again. *Donnie Darko* and *Ashes to Ashes*, on the other hand, are both concerned with psychological aspects of the human mind. Whereas *Donnie Darko* investigates this through the mind of a young disturbed male teenager in the 1980s, *Ashes to Ashes* investigates two timelines simultaneously, the contemporary time of 2008 and 1981. In *Ashes to Ashes*, the main focus is on intersectionality and particularly the transformation of gender roles in these two periods. Both of these examples do not feature voluntary time travel, but the characters are forced to travel by external circumstances

Finally, all of the films are interested in contemporary socio-historical issues and project these in to either the past, the future or both. The understanding of time is in all of the films and series also interested in psychological and ontological aspects, which is used to explain how existence and time are two connected concepts. In these examples, this is examined through fantastical iconographies such as robots, doubles, animal rights, warfare, death and the social identity in western societies.

Bibliography

Journals

Abbruzzese, J. "On Using the Multiverse to Avoid the Paradoxes of Time Travel." *Analysis* 61.1 (2001): 36-38. Web. 10 Apr. 2016.

Bereit, Virginia F. "The Genre of Science Fiction." *Elementary English* 46.7 (1969): 895-900. Web. 10 Apr. 2016.

Booth, Paul. "Intermediality in Film and Internet: Donnie Darko and Issues of Narrative Substantiality." *Journal of Narrative Theory* 38.3 (2008): 398-415. Web. 10 Apr. 2016.

Bucher, Charlotte, Neil Hollande, Barry Trott, and Jessica Zellers. "Core Collections in Genre Studies: Fantasy Fiction 101." *Reference & User Services Quarterly* 48.3 (2009): 226-31. Web. 10 Apr. 2016.

Castleman, Riva. "Apocalypse." *MoMa* 18 (1984): 6-11. Web. 01 Mar. 2016.

Claydon, E. Anna. "Representing the Mind: The Psyche on Film (Memento and Donnie Darko)." *The International Journal of the Arts in Society* 5: 3-10. Web. 10 Apr. 2016.

Fry, Carrol, and J. Roben Craig. "A Carnival of Apes: A Bakhtinian Perspective on "Twelve Monkeys"" *Journal of the Fantastic in the Arts* 49th ser. 13.1 (2002): 3-12. Web. 28 May 2016.

Fulmer, Gilbert. "Understanding Time Travel." *Southwestern Journal of Philosophy* 11.1 (1980): 151-56. Web. 10 Apr. 2016.

Gomel, Elana. "Shapes of the Past and the Future: Darwin and the Narratology of Time Travel." *Narrative* 17.3 (2009): 334-52. Web. 10 Apr. 2016.



Graham, Brian Russell. "Fictions of Apocalypse: Taxonomy and Meaning." *Terminus : The End in Literature, Culture and Media* 5.1 (2013): 21-32. Web. 10 Apr. 2016.

Grewell, Greg. "Colonizing the Universe: Science Fictions Then, Now, and in the (Imagined) Future." *Rocky Mountain Review of Language and Literature* 55.2 (2001): 25-47. Web. 10 Apr. 2016.

Gunn, James. "Teaching Science Fiction." *Science Fiction Studies* 23.3 (1996): 377-84. Web. 10 Apr. 2016.

Hamad, Hannah. "'Don't Let Him Take Britain Back to the 1980s': Ashes to Ashes as Postfeminist Recession Television." *Continuum* 28.2 (2014): 201-12. Web. 28 May 2016.

Horwich, Paul. "On Some Alleged Paradoxes of Time Travel." *The Journal of Philosophy* 72.14 (1975): 432. Web. 10 Apr. 2016.

Jones, Katherine Castiello, Joya Misra, and K. McCurley. "Intersectionality in Sociology." (2010): 1-8. Web. <http://www.socwomen.org/wp-content/uploads/swsfactsheet_intersectionality.pdf>.

Ketterer, David, Eric S. Rabkin, and Raffaella Baccolini. "Science Fiction and Imagination." *PMLA* 120.1 (2005): 246-49. Web. 10 Apr. 2016.

Lewis, David. "The Paradoxes of Time Travel." *American Philosophical Quarterly* (1976): 145-52. Web. 10 Apr. 2016.

Liu, Cixin. "Beyond Narcissism: What Science Fiction Can Offer Literature." *Science Fiction Studies* 40.1 (2013): 22-32. Academic Search Premier. Web. 10 Apr. 2016.

Malament, David B. "'Time Travel' in the Gödel Universe." *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association* 2 (1984): 91-100. Web. 10 Apr. 2016.



Mann, Karen B. "Narrative Entanglements: "The Terminator"" *Film Quarterly* 43.2 (1989): 17-27.
Web. 05 Apr. 2016.

McMahon, Christopher. "Imaginative Faith: Apocalyptic, Science Fiction Theory, and Theology."
Dialog 47.3 (2008): 271-77. Web. 10 Apr. 2016.

Monton, Bradley. "Time Travel Without Causal Loops." *The Philosophical Quarterly* 59.234 (2009):
54-67. Web. 10 Apr. 2016.

Nash, Jennifer C. "Re-thinking Intersectionality." *Fem Rev Feminist Review* 89.1 (2008): 1-15.
Web. 28 May 2016.

Philmus, Robert M. "'The Time Machine': Or, The Fourth Dimension as Prophecy." *Pmla* 84.3
(1969): 530-35. Web. 10 Apr. 2016.

Price, John S. "The "True Riddle of the Sphinx" in "The Time Machine"" *Science Fiction Studies*
27.3 (2000): 543-46. Web. 10 Apr. 2016.

Rabkin, Eric S. "Science Fiction and the Future of Criticism." *Pmla* 119.3 (2004): 457-73. Web. 10
Apr. 2016.

Radley, Emma. "Where Is Donnie? Psychosis and Agency in Richard Kelly's Donnie Darko."
Psychoanalysis, Culture & Society Psychoanal Cult Soc 17.4 (2012): 392-409. Web. 10 Apr. 2016.

Richmond, Alasdair. "Time-Travel Fictions and Philosophy." *American Philosophical Quarterly*
38.4 (2001): 305-18. Web. 10 Apr. 2016.

Rio, Elena Del. "The Remaking of "La Jetée's" Time-Travel Narrative: "Twelve Monkeys" and the
Rhetoric of Absolute Visibility." *Science Fiction Studies* 28.3 (2001): 383-98. Web. 28 May 2016.

Sider, Theodore. "Time Travel, Coincidences and Counterfactuals." *Philosophical Studies: An
International Journal for Philosophy in the Analytic Tradition* 110.2 (2002): 115-38. Web. 10 Apr.
2016.

Slusser, George, and Danièle Chatelain. "Spacetime Geometries: Time Travel and the Modern Geometrical Narrative." *Science Fiction Studies* 22.2 (1996): 161-86. Web. 10 Apr. 2016.

Smith, Peter. "XIV—The Butterfly Effect." *Proc Aristot Soc Proceedings of the Aristotelian Society* 91.1 (1991): 247-68. Web. 10 Apr. 2016.

Székely, Gergely. "A Geometrical Characterization of the Twin Paradox and Its Variants." *Studia Logica Stud Logica* 95.1-2 (2010): 161-82. Web. 10 Apr. 2016.

Toumey, Chris. "Salvation and Apocalypse, but Only If You Have the Right Technology." *CrossCurrents Cross Curr* 65.4 (2015): 546-51. Web. 10 Apr. 2016.

Warren, Victoria. "From the Restoration to Hollywood: John Dryden's "Conquest of Granada" and JamesCameron's "Terminator" Films." *Restoration: Studies in English Literary Culture, 1660-1700*, 27.2 (2003): 17-40. Web. 28 May 2016.

Fiction and films

Ashes to Ashes. Dir. Mathew Graham and Ashley Pharoah. Perf. Philip Glenister and Keeley Hawes. BBC, 2008. DVD.

Donnie Darko. Dir. Richard Kelly. Perf. Jake Gyllenhaal and Jena Malone. Moviemax Home Video ; MHE Ideal Entertainment, 2001. DVD.

Primer. Dir. Shane Carruth. Perf. Shane Carruth and David Sullivan. 2004. DVD.

The Terminator. Dir. James Cameron. Perf. Schwarzenegger and Linda Hamilton., 1984. DVD.

The Time Machine. Dir. George Pal. Perf. Rod Taylor and Alan Young. Films Inc., 1960. DVD.

Twelve Monkeys. Dir. Terry Gilliam. By David Webb Peoples and Janet Peoples. Perf. Bruce Willis, Madeleine Stowe, and Brad Pitt. Universal Pictures, 1995. DVD.

Webpages

Dowden, Bradley. "Time." *Internet Encyclopedia of Philosophy*. Web. 28 May 2016.

"Intersectionality Coming Alive." *Solidarity*. Stephanie Luce, 2009. Web. 28 May 2016.

"SFE: The Science Fiction Encyclopedia." *The Encyclopedia of Science Fiction*. Web. 10 Apr. 2016.

"Screenplays for You - Free Movie Scripts and Screenplays." *Screenplays for You - Free Movie Scripts and Screenplays*. Web. 10 Apr. 2016.

Summary of Woman on the edge of time.
<[https://en.wikipedia.org/wiki/Woman on the Edge of Time](https://en.wikipedia.org/wiki/Woman_on_the_Edge_of_Time)>. Web. 28 May 2016.

"Welcome to the Donnie Darko: The Tangent Universe." *The Philosophy of Time Travel*. Dan Smith. Web. 28 May 2016.

Books

Bast, Florian. "'I Hugged Myself': First-Person Narration as an Agential Act in Octavia Butler's 'The Evening and the Morning and the Night'." *Black Intersectionalities A Critique for the 21st Century* (2014): 68-82. Print. 28 May 2016.

King, Geoff. "Primer (2004): A Primer in First-Time Indie Filmmaking." *US Independent Film after 1989: Possible Films*. Edinburgh UP., 2015. 144-53. Print. 28 May 2016.



Sanders, Steven. *The Philosophy of Science Fiction Film*. Lexington, KY: U of Kentucky, 2008. 103-19. Print. 28 May 2016.