Imagining Artificial Intelligence as Sentient Synthetic Anthropomorphs and Their Possible Future Relations with Humans: Representation and Form and Style in Popular Postmillennial American and British Fictional Film and Television.

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Abstract

The twenty-first century has been a significant time for artificial intelligence (AI), with a number of key developments in the field changing the world as it was once known. Capturing the cultural zeitgeist, popular postmillennial American and British fictional film and television have produced a number of AI narratives during this time, and are two of the foremost ways that the public is exposed to AI, thus, signalling their importance as cultural artefacts for examination within academia. This thesis draws upon a sample of these texts as case studies, and using close textual analysis, foremostly underpinned by narrative theory, genre theory, and star studies, examines how elements of fictional film and television form and style affect the representation of AI in popular postmillennial American and British fictional film and television, specifically in the imagined form designated by this thesis as 'sentient synthetic anthropomorphs' (SSAs). Chapters on SSAs in complex narrative television, their escape from the exclusive purview of the science fiction (SF) genre, their repeated portrayal by a particular Hollywood star actor, and their depiction in the children's SF film, point to the original and significant intervention of this research project, and draw upon, and are complementary to, an existing body of (inter)disciplinary literature from within and across the humanities and sciences fields. Principally, however, this thesis is an intervention within film, television and media studies, which aims to stimulate further productive dialogues about the representation of AI in popular American and British fictional film and television and beyond, drawing attention to the ways in which elements of form and style might be utilised to produce diverse and engaging AI narratives, contributing to their future vitality and longevity among a range of audience constituencies, as actual AI technologies continue to develop and progress.

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Introduction

Throughout the twenty-first century, as its field has shown an 'upward trend in growth', artificial intelligence (AI) has become 'more and more institutionalized' in everyday life, and has been enjoying an 'explosion of coverage' across a range of fiction and nonfiction narratives (Liu *et al.* 2018, 34403; The Royal Society 2018, 7). Whilst early imaginings of intelligent machines with semblances to modern conceptions of AI can be traced as far back to Ancient Greece in Homer's *Iliad* and *Odyssey,* a much 'greater density' of AI narratives has emerged in this postmillennial era, reflecting its rapid and increasing real-world development during the same period (Liveley and Thomas 2020, 25-6; Cave, Dihal and Dillon 2020, 5).

Fictional film and television have been identified as key sources of exposure to AI for the public in the postmillennial era, forming an accessible 'reference point in the discourse […] surrounding AI' (Kantar 2019, 148; Hermann 2021, 319). Following in the footsteps of their antique predecessors, many of these AI narratives from fictional film and television reflect enduring human cultural motifs, first 'the 'desire to create a living, intelligent or conscious creature of our own, independent of the real technical possibilities', and second 'the anxiety that the creature will grow over our heads that we will lose control and finally be dominated by it' (Hermann 2021, 322-9).[1] AI narratives in fictional film and television are, thus, 'analysed as shaping the fears and hopes of the technology', forming important cultural artefacts that give insights into how those involved in the creative process have understood AI and how that is subsequently communicated to broader public audiences, necessitating (inter)disciplinary treatment from scholars within and across both the sciences and the humanities (Hermann 2021, 319).

Using American and British texts (justified below), the representation of AI in popular postmillennial fictional film and television is, therefore, the focus of this thesis, which is foremostly grounded within film, television and media studies, but may prove useful to researchers from wider (inter)disciplinary fields with interests in

[1] Hermann refers to the 'Jewish legend of the *Golem* and Mary Shelley's *Frankenstein*' as key examples of these antique stories, which have inspired numerous contemporary AI narratives (2021, 322). The latter was the inspiration for science fiction (SF) author Isaac Asimov's 'Frankenstein complex', a term that encapsulates both the motifs outlined by Hermann, and has become 'a basic feature of twentieth and twenty-first century AI fiction' (2021, 322). Some examples of this basic feature in operation, include *The Matrix* franchise (1999-), *I, Robot* (2004), *Ex Machina* (2015), HBO's *Westworld* (2016-22), and *I Am Mother* (2019).

AI and its surrounding narratives.[2] As my forthcoming literature review will demonstrate, AI narratives research is flourishing, however, there is much scope for more contributions. Indeed, this research project's original and significant intervention within this area emerges from its in-depth consideration of questions of how representations of AI within popular postmillennial American and British fictional film and television are affected by elements of form and style, specifically platform/narrative, genre, stardom, and audience. The thesis aims to stimulate further productive dialogues about the representation of AI in popular postmillennial American and British fictional film and television, drawing attention to the ways in which elements of form and style can be utilised to create a diverse range of engaging and thought-provoking AI narratives, contributing to their continued relevance, vitality, and longevity among a range of audience constituencies as AI continues to develop in the real-world.

Before further outlining this thesis's key questions, the type of AI that it considers throughout necessitates delineation. As Cave, Dihal and Dillon explain, the term AI is currently employed in reference to a 'heterogenous network of technologies – including machine learning, natural language processing, expert systems, deep learning, computer vision, and robotics – which have in common the automation of function of the human brain' (2020, 4).[3] AI is, therefore, a 'monolithic term', and it is often broken down into 'evolutionary stages' (Kaplan and Haenlein 2019, 15). Currently, in the real-world, AI is in its first evolutionary stage and is considered 'weak' or 'narrow', capable of just one or two specific tasks (Kaplan and Haenlein 2019, 15-6). The second evolutionary stage is 'strong' or 'general' AI, which may exist at some point in the future, and would be capable of planning, reasoning, and working autonomously, even performing tasks it was not designed for (Kaplan and Haenlein 2019, 16). Finally, the third evolutionary stage is identified as 'super' or 'true' AI, which would be conscious, self-aware, and far surpass human intelligence, and although is not outside the realms of possibility, has proven far more difficult to construct than AI's pioneers foresaw (Kaplan and Haenlein 2019, 16; Bostrom 2014, 4).

[2] By 'film', this thesis refers to conventional feature-length film productions.
[3] Similar definitions are proffered elsewhere, for example, by Minsky (1968), Gasser and Almeida (2017) and Kang and Haliburton (2020).

However, contrary to its present weakness or narrowness in the real-world, within fictional film and television, 'AI is often portrayed as human-like or autonomous, regardless of the actual technological limitations' (Hermann 2021, 319; see also, The Royal Society. 2018, 4; Devlin and Belton 2020, 359). Indeed, owing to their frequent recurrence in fictional film and television, it is these human-like AI that are the focus of this thesis.[4] As The Royal Society reason, this reliance on human-like AI occurs because visual storytelling mediums require bodies, human actors to enact human dramas, 'the simplest way in which machine intelligences can be included in such dramas is therefore to take human form' (2018, 8). This makes it easier for audiences to identify with AI protagonists, 'because they are in fact human actors expressing human emotions in recognisable plots of escape and self-discovery' (The Royal Society 2018, 8). What this also means, however, is that fictional AI narratives in film and television are often highly speculative and extrapolative, although they may take inspiration from current AI in the real-world, they are rarely aligned with it (Hermann 2021, 320).

Despite the relative specificity of autonomous, human-like AI frequently imagined in fictional film and television, these entities have been afforded numerous designations. As Recchia's study of English-language film subtitles shows there is a lexicon of twenty-four terms used to refer to AI agents 'possessing at least some level of "intelligence" and containing some artificial/manmade components', a number of which are 'related to digital/biological hybrids underscore[ing] the difficulty of disentangling "artificial agents" from humans', including 'robot', 'android', 'cyborg', 'mechanical woman', 'gynoid', and 'fembot' (2020, 392-4). These last three terms are particularly significant, drawing attention to the frequent gendering of AI in fictional film and television, who often possess the 'secondary sexual characteristics […] of women', hyper-sexualised in 'conventional beautiful female forms such as Ava in *Ex Machina*' (The Royal Society. 2018, 8). On the occasion that male-gendered AI do appear, they often have 'exaggeratedly muscular bodies and aggressive tendencies' such as the titular character featured in *The Terminator* (The Royal Society 2018, 8).

[4] Additional examples that are not subject to analysis within this thesis include, *Blade Runner* (1982), *The Terminator* (1984), *A.I Artificial Intelligence* (2001), *Almost Human* (2013-4), *Ex Machina* (2015), *Raised By Wolves* (2020-22), and *M3GAN* (2023).

It is, however, not within the scope of this thesis to distinguish between and adopt such a wide range of nuanced terms in reference to these imagined human-like AI in fictional film and television that it gives consideration to, as has been attempted elsewhere (see, for example, Stein 2019, xv). Instead, I propose the use of the broad-spanning term 'sentient synthetic anthropomorph' (SSA) throughout this thesis, which encompasses these imagined AI entities' embodiment and human-likeness, and their capacities for autonomy, consciousness, and the experience of feelings and sensations, whilst distinguishing them from other AI forms in both fiction and reality.[5][6]

With this, this thesis proposes three key research questions: How has AI, in the imagined form of SSAs, and their possible future relations with humans, been represented within popular postmillennial American and British fictional film and television? How do elements of fictional film and television form and style (platform/narrative, genre, stardom, and audience) affect the representation of SSAs? How do these texts' representations correspond with and/or contest AI narratives from wider media and popular science/technology? As a feminist scholar, this thesis often returns to the issues surrounding the gendered representations of AI in both fiction and reality throughout.

This thesis, therefore, also has other delimitations. As explained already, this thesis is concerned with AI narratives from fictional film and television produced in the postmillennial, twenty-first century era. It is also focused on texts with American and British production/distribution origins.[7] As this thesis is already dealing with the complexities of a multi-platform approach, it is simply not within its purview to expand considerations to AI narratives in fictional film and television from other national contexts, which warrant in-depth treatments of their own. Indeed, global AI narrative outputs are already subject to significant research by the Leverhulme

[5] As per the Oxford English Dictionary, the term 'sentient' describes that 'which has sensation or feeling' and that which is 'conscious or percipient of something' (OED, 2023).
[6] For example, as The Royal Society note there is a sub-genre of narratives that portray AI in ways that are not embodied, as 'AI systems' or 'computer mainframes', this thesis is not concerned with such AI forms (2018, 9). Although this thesis does consider the disembodied AI Samantha in Spike Jonze's *Her* (2013), as discussed in chapter three, this film forges a unique sense of corporeality for Samantha through the recognisable voice of Scarlett Johansson, hence its inclusion.
[7] Whilst some might view Luc Besson's *Lucy* (2014), which is subject to analysis in chapter three, as an exception to this owing to its production by French companies, the film was distributed by America's Universal Pictures, is in the English-language, foregrounds Hollywood actors Scarlett Johansson and Morgan Freeman, and premiered in the USA, lending support to its place for consideration within the thesis as a text that is significantly American.

Centre for the Future of Intelligence at the University of Cambridge (GAIN, n.d.). Furthermore, American and British fictional film and television have global circulations, they are accessible, popular, and influential in many other regions around the world, further justifying their necessity for consideration.

As its title indicates, this thesis is further delimited by its concern with 'popular' texts, that is, those that can be considered as belonging to popular culture. As Parker explains, popular culture continues to be difficult to delineate, with various scholars offering their working definitions of the term (2011, 148). Strinati adds that it is 'not preferable to have a strict and exclusive definition of popular culture' as it is found in 'different societies, within different groups in societies, and among societies and groups in different historical periods' (2004, xiv). Considering this, this thesis adopts Hebdige's broad widely-cited definition of popular culture as, 'a set of *generally available* artefacts: films, records, clothes, TV programmes, modes of transport, etc' (1988, 47; emphasis added). To iterate, this thesis is, therefore, concerned with postmillennial fictional film and television AI narratives that have a general availability to audiences.

Notions of general availability in fictional film and television have undergone an evolution in the postmillennial era, with the significantly increased uptake of streaming services, including Netflix, Amazon Prime, and Hulu. What is generally available to audiences now, and therefore, considered part of popular culture, may not have been so just a few years ago. Not only are streaming services producing their own original content, but they are also acquiring previously released content, at times affording films and television shows new or resurging popularities with new or repeat audiences (Curtin, Holt, and Sanson 2014, 1). Moreover, whilst television 'binge-watching' practices at viewers' conveniences brought about by streaming services have the potential to mitigate casual viewer loss experienced by traditional network or cable television's episodic instalments, films released exclusively through these platforms have the capacity to become watched and revered by large audiences without traditional theatrical releases and box-office success (Gillan 2011, 7). Postmillennial fictional film and television, therefore, seem to have more avenues in which to achieve popularity, and designation under the popular culture rubric. With this, this thesis takes into consideration popular texts released through both traditional theatrical or scheduled television methods and through major streaming services, produced by both major and independent entertainment companies.

These delimitations still afford this thesis a large pool of texts as potential case studies for close textual analysis, which can foremostly be narrowed by their necessitude of at least one central character identifiable as an SSA. Whilst most of these texts can be classified as science fiction (SF), owing to their inclusion of AI as a technological 'novum', this was not a necessary criterion for their initial selection, so as not to exclude potentially significant texts that are, according to Recchia, escaping the exclusive purview of SF and appearing in other (sub)genres in the postmillennial era (2020, 385).[8] Nevertheless, SF and its surrounding scholarship remain important to the thesis, as it is from this genre that the majority of SSAs continue to emerge (Recchia 2020, 385). As mentioned, this thesis will be focusing on a small sample of case studies within each chapter for close textual analysis that provide opportunities for rich and detailed discussion, although a broader corpus will be acknowledged where appropriate to signal wider trends and intertextuality. The featured case studies have been selected on the basis of their resonance with the focus of their respective chapters, which is further outlined within the introduction to each chapter.

Whilst this thesis is foremostly concerned with fictional film and television, it also discusses these texts' relationships with AI narratives in wider media and popular science/technology. The majority of news articles drawn upon, from both mainstream and niche outlets, were located through the Nexis database, using keywords with resonances to the themes and case studies of the particular chapter in which they are cited.[9] Others were discovered using similar keywords in internet search engine Google, and through more organic informal processes, for example, browsing news feeds, social media, and conversations with colleagues, friends and family. The AI narratives within popular science/technology, such as the 'technological singularity' and 'uncanny valley' hypotheses were also drawn upon within chapters with themes and case studies of particular resonance and were identified through the research process, as a knowledge of their significance was developed from studying existing relevant literature.

[8] As Suvin's seminal work on the genre delineates, SF is defined by its dominant interest in a 'strange newness, a novum' (1972, 373). Therefore, any text concerned with the concept of AI – a technological novum – might be treated as SF, regardless of its other themes and content.
[9] Example keywords include, 'gendered AI', 'human-AI relations', 'AI companions', and 'AI takeover'.

As previously mentioned, this thesis employs close textual analysis as its foremost method of gathering data from its film and television case studies, which can 'lay claim to being the preferred method' in film, television and media studies, appliable to a range of texts from 'different periods, genres and national provenances' (Kuhn and Westwell 2012, 425). Textual analysis involves the interpretation of texts 'in order to try and obtain a sense of the way in which, in particular cultures at particular times, people make sense of the world around them' (McKee 2003, 1). Indeed, throughout this thesis, popular American and British fictional film and television texts are interpreted in order to contribute to understandings of how we are making sense of AI in the postmillennial era. In film, television and media studies, textual analysis of film and television involves the 'systematic activity of breaking a [text] down into it constituent formal [and stylistic] elements', such as genre, narrative, performance, mise-en-scene, cinematography, editing, and sound (Kuhn and Westwell 2012, 425; Bordwell and Thompson, 1997).

Textual analyses underpinned by different theoretical approaches in film, television and media studies produce 'different kinds of information – even if they are used for analysing similar questions' (McKee 2003, 8). A research project may necessitate combinations of these theoretical approaches to answer its questions most effectively (Corrigan 2001, 94). This thesis is foremostly underpinned by narrative theory, genre theory, and star studies. Close textual analysis underpinned by narrative theory is concerned with a film or television texts' narrative, the 'chain of events in cause-effect relationship occurring in time and space' (Bordwell and Thompson 1997, 90). As Mittell explains, a narrative theory approach asks, 'How does this [text] mean?', giving consideration to 'how meanings are constructed and conveyed via the design and structure of films and other texts, with primary attention to the patterns of storytelling' (2017, 4).

Close textual analysis underpinned by genre theory is concerned with what gives films and television 'of a certain type a common identity', the 'shared genre conventions which reappear' in texts (Bordwell and Thompson 1997, 53). This can include plot elements, themes, iconography, lighting, sound, and editing techniques, setting, characters, actors, and audiences (Bordwell and Thompson 1997, 53; Grant 2007, 2). Schatz proposes that a genre can be studied 'like a language as a formalized sign system whose rules have been assimilated consciously or otherwise, through cultural consensus', the shared knowledge of a genre's rules enable us to

understand and evaluate individual genre texts (1981, 19). Genres, however, are not static, they evolve, mix and merge with others forming subgenres and genre hybrids, and can even disappear altogether (Altman 1999, 123; Hayward 2006, 166).

Close textual analysis underpinned by star studies is often concerned with semiotics, understanding 'the star as a sign, that is to say precisely as an image constructed through a network of intertextuality' (Watson 2012, 169). This involves consideration of a stars' onscreen performances, 'but also the other texts that relate to the star through publicity and promotions' (McDonald 2000, 2). Star studies is foremostly associated with the seminal work of Dyer, who proposes that any given star has multiple meanings, rather than one true meaning (1998, 3). The specific theories from film, television and media studies that have informed and underpinned the research within the chapters of this thesis are identified and further discussed within the introductions to each chapter.

As Ifversen states, close textual analysis works at a 'micro-level, where the role and meaning of the singular text becomes important' (2003, 68). However, this thesis is also interested in the way that 'specific objects, themes, and concepts are produced and reproduced in a field made up of several texts', studying them at a 'supra-textual level', which moves beyond the importance of the single text (Ifversen 2003, 62). In studying texts at a supra-textual level, the term 'discourse' is applied, which designates a 'totality of statements formed by a given configuration' (Ifversen 2003, 64). Elsewhere, Burr defines discourse as,

> A particular picture that is painted of an event (or person or class of persons), a particular way of representing it or them in a certain light. If we accept the view […] that a multitude of alternative versions of events is available through language, this means that, surrounding any one object, event, person, etc., there may be a variety of different discourses, each with a different story to tell about the object in question, a different way of representing it to the world (1995, 32).

In its consideration of the particular images that are painted of AI within popular postmillennial American and British film and television and how these relate to other images of AI painted by wider media and popular science/technology, this thesis, therefore, also conducts elements of discourse analysis. This study of the

'relationship between real life and fictional discourse in which the latter is interpreted as an example of a representation […] providing a recreation of the world and the time, place and discourse within it' is considered one of the key approaches to 'telecinematic discourse' within film, television and media studies (Piazza, Bednarek, and Rossi 2011, 9).

Chapter one of this thesis considers the representation of AI, in the imagined form of SSAs, and possible future human relations with them, within popular postmillennial American and British television, using HBO's *Westworld* (2016-22) and AMC's/Kudos's *Humans* (2015-8) as case studies. This chapter is a study of platform and narrative, and first discusses the extent to which *Westworld* and *Humans* can be considered as examples of 'complex narrative television', drawing extensively on the seminal work on the poetics of this relatively new narrative television mode by Mittell (2015). This chapter proposes that *Westworld*'s and *Humans'* degrees of narrative complexity, ascertained by close analysis of their opening titles and pilot episodes, allow for complex and shifting identifications with their respective SSA characters, ultimately inviting viewers' sympathies towards them, rather than many of their human characters. Finally, both *Westworld* and *Humans* engage with notions of the 'technological singularity', a popularised science/technology hypothesis concerning a future point in time in which AI far surpasses human intelligence and significantly changes the world as we know it. Chapter one concludes with a discussion of the compatibility and sustainability between complex narrative television and the technological singularity hypothesis, prompted by notions of *Westworld*'s and *Humans*' abrupt and unexpected cancellations.

Chapter two examines the representation of AI, in the imagined form of SSAs, and possible future human relations with them, within popular postmillennial American film, using Spike Jonze's *Her* (2013), Drake Doremus' *Zoe* (2018), and Michael Almereyda's *Marjorie Prime* (2017) as case studies. This chapter is a study of genre, and building upon recent research by Recchia (2020), explores the inroads that AI is making into other genres besides SF, specifically the romantic-drama. The chapter proposes that *Her*, *Zoe,* and *Marjorie Prime*'s departures from the conventions of SF, and engagements with the conventions of the romantic-drama, work towards figuring notions of possible future human-AI intimacies as more normalised, even palatable, to audiences. Views of similar, albeit rudimentary, AI

technologies in the real-world are not afforded the same degree of optimism, with early adopters of AI for intimate companionship negatively stereotyped in the media, and AI working towards digital immortality considered creepy, exploitative, and distasteful. The inroads that AI is making into the romantic-drama genre are contributing to a healthy diversification of AI narratives, producing original and thought-provoking stories for broader audiences that move beyond the 'out-of-control-robot' trope that has so often appeared in SF.

Chapter three explores the repeated casting of Hollywood actor Scarlett Johansson in roles as female-presenting SSAs in popular postmillennial American and British SF film, using Jonathan Glazer's *Under the Skin* (2013), Spike Jonze's *Her* (2013), Luc Besson's *Lucy* (2014), and Rupert Sanders' *Ghost in the Shell* (2017) as case studies. This chapter is informed by Dyer's (1998) theory of stardom, and draws extensively upon Stevens, Loreck and Monaghan's (2019) recent account of Johansson's career, image and persona. The chapter proposes that Johansson has been recognised as an 'ideal' representative of the female SSA, which largely stems from her wide regard as 'exceptional', unique aspects of her performative style, and various formative roles as 'wandering ingenues' and 'femme fatales'. The chapter goes onto address the problem of Johansson's repeated casting as female SSAs, which perpetuates notions of how AI should look and behave in both fiction and reality – it should be gendered female, sexualised and compliant. The extent of this problem is highlighted in the chapter by an amateur roboticist's recent design and development of a rudimentary AI robot that is an explicit misappropriation of Johansson's image.

Finally, chapter four turns its attention to the representation of AI, in the imagined form of SSAs, within the popular postmillennial American children's SF film, using Disney's *WALL-E* (2008), directed by Andrew Stanton, as a case study. Whilst this chapter gives consideration to audience, it is a study of genre, informed by Brown's (2017) consideration of the children's film as a 'master-genre' that negotiates a diverse array of (sub)genres, including SF. Owing to a relative lack of research in this area within film, television and media studies, the chapter takes inspiration from scholarship on the representation of AI, and technology more broadly, within children's literature studies, specifically from Mendlesohn (2009), Applebaum (2009), and Flanagan (2014). The chapter considers whether notions of children's literature as limited to a small palette of SF problems/trajectories,

possessing different views and values to the adults' literary SF, and endorsing predominantly technophobic agendas can be extended to the children's SF film about SSAs. Through its depiction of SSAs, *WALL-E* is a children's film that negotiates a broad palette of SF problems, and overall, endorses an agenda that sways away from the technophobic and towards the misanthropic. This is likely a reflection of its production by Disney, founded by futurist Walt Disney, whose optimisms about technology continue to permeate the entertainment company's brand and ethos. *WALL-E* also shares some views and values with adult SF films, which are not necessarily to the benefit of its impressionable audience constituency. The film's initial destabilisation of traditional gender binaries through SSAs WALL-E and EVE are later restored, reproducing a number of adult SF films' stereotypical binary gendering of AI technologies.

Following these four chapters is the thesis' overall conclusion, which summarises the original and significant contributions that this thesis makes to knowledge within film, television and media studies in relation to the representation of AI within popular postmillennial American and British fictional film and television narratives and highlights productive avenues for further research in this area.

Literature Review

As the following literature review demonstrates, this thesis is informed by and can be situated amongst several burgeoning areas of (inter)disciplinary research surrounding AI and its narratives, however, its primary original and significant intervention is within film, television and media studies.

With AI becoming more visible within day-to-day life throughout the twenty-first century, it is also becoming more important to understand the public's perceptions of AI, and where these perceptions might stem from. Indeed, this has been recognised in the UK by the government, which every three-to-five years since the year 2000, has commissioned a survey investigating broader public attitudes to science. Whilst previous iterations of this study have mentioned AI, the most recent Public Attitudes to Science (PAS) 2019 survey was the first to pay significant attention to 'artificial intelligence, robots and data' as one of four emerging areas of science and technology, with 'AI in healthcare, AI in the workplace, and the use of personal data to develop AI' as the three main topics addressed, indicating AI's

increasing presence and significance throughout postmillennial culture and society (Kantar, 2019, 130). The PAS 2019 survey found that there was a 'high level of awareness of a range of AI applications in use today', with between 74% and 92% of participants having 'heard or read at least something' about seven listed AI and robot applications, which was likely a reflection of 'increased levels of exposure to these applications in both everyday digital interactions and via the media […] emphasising the speed at which these types of applications are being developed and implemented in society' (Kantar 2019, 134). Participants demonstrated mixed feelings about AI, whilst they were 'broadly supportive of the use of AI and robots in healthcare […] people were less supportive of the shift towards people's jobs becoming more automated' (Kantar 2019, 130). There were also broad concerns across contexts about AI causing the 'potential loss of human interaction and human skills' (Kantar 2019, 130).

A report by the UK House of Lords Select Committee on Artificial Intelligence (SCAI) also suggests a broad awareness of AI amongst the public, and although the public also have 'inaccurate impressions' of AI and how it works, perceptions of AI are likely to 'change rapidly with every new innovation, scandal, or accident which emerges into the public consciousness […] dependent on who is using the technology, and to what purpose' (2018, 22). Many experts involved in AI research and development, however, told the SCAI report that 'the public have an unduly negative view of AI and its implications' that could 'trigger a public backlash', and in turn, make their work in the field more difficult (2018, 23-3).

Within both the PAS 2019 survey and the SCAI report, popular culture is held accountable for significantly affecting public perceptions of AI. Whilst the PAS 2019 survey notes fiction and nonfiction film and television as a key sources of exposure to four types of robot (traditional, industrial, domestic, and humanoid), the SCAI report states that popular culture representations of AI are misaligned with reality, providing the public with pictures of AI as humanoid robots or highly intelligent disembodied voices 'with or without murderous intentions', which many AI researchers and witnesses believe to stem from 'Hollywood depictions and sensationalist, inaccurate media reporting' (Kantar 2019, 148; SCAI 2018, 22-3). However, as the chapters of this thesis show, there are emerging narratives within fictional feature film and television that can be read in ways that are more nuanced,

thought-provoking, and even positive about AI, although unrealistic degrees of anthropomorphism do seem to persist.

From their analysis of three hundred fiction and nonfiction works, Cave and Dihal propose that there are eight recurring AI narratives that can be structured into 'four dichotomies, each comprising a hope and parallel fear' (2019, 74). The four hopes are that AI might offer us immortality, a life free of work, the fulfilment of one's desires, and power over others (Cave and Dihal 2019, 75). The corresponding fears to these hopes are that AI might cause the loss of one's identity, render us obsolescent, alienate us from one another, and turn against us (Cave and Dihal 2019, 75). When Cave, Coughlan and Dihal studied the UK public's awareness of these AI narrative dichotomies, just two of eight provoked more feelings of excitement than concern, which were immortality and a life free of work (2019, 334). As a result, Cave, Coughlan and Dihal's study also concludes that the UK public currently has a 'markedly negative view' of AI, which will have to contend 'with the fact that in some parts of the world, a majority of people see downsides even in ostensibly utopian portrayals', potentially impacting upon AI development, deployment, and regulation (2019, 336).

Fast and Horvitz identify hopes and fears about AI that are similar to Cave and Dihal's, however, their study of *New York Times* articles across a thirty-year span found that public views and discussions of AI have been 'consistently more optimistic than pessimistic' (2017, 964-8). Fast and Horvitz's study is limited by its focus on one media outlet, but it does suggest the possibility of different public attitudes towards AI between America and the UK, which could benefit from further investigation in future studies. Fast and Horvitz's study also raises questions about the extent of the media's aforementioned dissemination of unduly negative AI views.

Manikonda and Kambhampati argue that AI coverage in the media 'tends to be dominated by the polarizing views of a few people with outsized megaphones' (2018, 652). To get a more inclusive sense of public perceptions of AI, Manikonda and Kambhampati turn to public discourse on social media platform Twitter, analysing 'over two million AI related tweets posted by over 40,000 users', whom they divided into AI experts and nonexperts (2018, 652). Similar to Fast and Horvitz, Manikonda and Kambhampati report an overall positive AI discourse on Twitter, with experts expressing more negativity than nonexperts (2018, 655). If some AI experts want 'a more positive take on AI and its benefits to be conveyed to the

public', as is stated within the aforementioned SCAI report, then they might start with diligent considerations of the nature of their contributions to AI discourse on social media and how this might be interpreted by the public, and collectively think of ways that more positive dialogues involving both experts and nonexperts can be brought to the fore across these platforms (SCAI 2018, 23).

Johnson and Verdicchio point out that the multiplicity of meanings of terms relating to AI, for both AI researchers and nonexperts, is contributing to the miscommunication that afflicts AI discourse in the media (2017b, 576). Specifically, Johnson and Verdicchio discuss the term 'autonomy', which 'suggests to the media and the lay public something out of human control, something worthy of concern and even fear', but should be considered as 'the design of computational artefacts that are able to achieve a goal without having their course of action fully specified by a human programmer' (2017b, 576). To remedy this, Johnson and Verdicchio propose a reframing of AI discourse that recognises the distinctions between computational artefacts and AI systems, the latter comprising of computational artefacts 'together with human actors and social arrangement' (2017b, 577). This would draw attention to our 'sociotechnical blindness' – that is, the prevalent blindness to the essential role that humans will have to play at every stage of design, development, and implementation 'to get from current AI to futuristic AI' (2017b, 587). This suggests that public concerns about AI might be better directed towards the people involved in developing AI and for what purpose, rather than the technology itself. Johnson and Verdicchio state that AI researchers have a degree of responsibility in ensuring that their research is appropriately presented to and understood by the public (2017b, 576). As the chapters of my thesis show, there is evidence of some fictional film and television working towards highlighting this prevalent sociotechnical blindness, by drawing attention to the extent of human involvement within AI systems.

Whilst the media is 'often accused of publishing scare stories that stir up controversies', Gregory states that these controversies can 'play a useful role in establishing a new technology in society' (2003, 134; see also, The Royal Society 2018, 4). Media coverage, explains Gregory, tells us 'not what to think, but what to think about', with controversies possessing an 'important democratic function' in their quick circulation of knowledge and stimulation of the public's involvement in the issue (2003, 134). Arguably, therefore, even the most sensational AI narratives

are of value to the public and their perceptions of AI, functioning as expressions of the 'moral climate of the society in which science and technology must fit to thrive' (Gregory 2003, 136).

Drawing parallels with Gregory, Dillon and Craig stress that there is an 'urgent need to take stories seriously to improve public reasoning', and that despite forming a significant part of human nature, stories are often 'neglected, dismissed as trivial, or feared as too dangerously powerful', which is owed to the multiplicity of their meanings, dependent on 'storyteller, the storyimbibers, and the mode of telling' (2021, iii-3). This applies to all relevant forms of story – it is important that we move beyond 'existing definitions of value or worth based on non-relevant criteria, and sometimes simply on genre prejudice, for instance against science fiction' (Dillon and Craig 2021, 121).

Dillon and Craig identify four key functions of stories in public reasoning 'in relation to four policy areas where decisions are strongly influenced by contentious knowledge and powerful imagining', including climate change, the economy, nuclear weapons and power, but also, AI (2021, 5).[10] As Dillon and Craig assert, stories enable the observation of alternative viewpoints that broaden and increase our knowledge, they allow us to map and understand collective identities and motivations of particular social groups, they are tools for explanation and understanding, and play an important role in anticipation (2021, 3). Across its four chapters, this thesis discusses such functions in action within fictional film and television narratives about AI, particularly their anticipatory qualities.

Dillon and Craig suggest SF as a particularly significant genre in the anticipation of futures through stories, offering a virtually unbounded space in which even the most far-fetched speculations and extrapolations, especially those relating to science and technology, can be imagined for broad-spanning public audiences (2021, 121). Suvin's foundational theorisation of literary SF provides an early argument for the value of the genre as anticipatory rather than predictive, articulating that SF is 'a diagnosis, a warning, a call to understanding and action, and – most important – a mapping of possible alternatives' that might help us to make 'better

[10] Dillon and Craig also highlight the aforementioned frequent anthropomorphism of AI within stories, contending that this 'can serve to elicit empathy with similar effects to the anthropomorphisation of nature', (2021, 36). This thesis makes a similar argument, particularly within its first, second and third chapters.

decisions and actions in the present' (1979, 12; Dillon and Craig 2021, 121). Therefore, despite prejudices against it as 'trash', the SF genre has a symbiotic relationship with futures studies, a field whose output has generally been regarded as more 'serious' and 'respectable' in its own methods of anticipating the future using scenarios (Dillon and Craig 2021, 119).[11] Scenarios are the 'paradigmatic' output of futures studies, they are themselves 'stories or future histories' produced from a series of events that may occur in a particular given situation, and can range from the expected to the unforeseen and unlikely (Dillon and Craig 2021, 122; Bell 1996, 18). However, as Dillon and Craig contend, 'stories also function as futures techniques in their own right', outlining the processes of 'incasting' (in which a story of an extreme alternative future is used to prompt speculations on the impact of that future), 'backcasting' (in which an alternative future is envisioned and a story is created by arranging speculated events that would lead from the present to that future), and 'future mapping' (in which preselected events leading to an alternative future are provided, but their order and connection must be arranged) (2021, 122-3). Dillon and Craig propose these three techniques as 'narrative futures methods', which they state should also be inclusive of 'SF prototyping' (usually collaborative, inspired by hard SF, and based on real science/technology), 'collaborative storytelling games', and 'surrogative reasoning' from existing, primarily SF, stories (2021, 124-5).

Despite previous troubles in the symbiosis between SF and futures studies (brought about by the arrival of futures in the latter half of the twentieth century that enabled earlier predictions to be tested against reality with varied results), Dillon and Craig propose that 'a reconsideration of the relationship of [futures studies] and SF is beginning to happen' (2021, 120-5).[12] For instance, Burnham-Fink argues that, as SF prototyping deliberately positions itself within the tradition of SF, we have a responsibility to 'consider science fiction as a mode of thought about the future […] a rich collection of evocative speculative fragments' bound by the 'belief that the future will be substantially different from the present, but can still be reasonably

[11] Specific methods include Herman Kahn's scenario planning and the Delphi technique established by the RAND corporation (Dillon and Craig 2021, 122).
[12] These troubles are further highlighted by Milburn, who states that even scientists who recognise the potential value in SF as a 'vehicle for stimulating scientific innovation' often speak of SF using 'pathogenic vocabulary', exposing their underlying anxieties about SF's influence on science (2010, 562-3).

extrapolated from current understandings' (2015, 50). In this regard, states Burnham-Fink, 'the logic of scenarios and the logic of science fiction line up' (2015, 50). Elsewhere, Winstead argues that fiction, particularly speculative fiction, is indispensable to knowledge production about the future, drawing attention to Margaret Atwood's speculative novel *Oryx and Crake* (2003) and its modelling on political and economic forecasting narratives, pointing to the 'close similarities between literary and scientific knowledge production' (2017, 229).[13]

Similarly, Milburn (2010) proposes that symbiosis between SF and the sciences can be examined through notions of fan practices, with day-to-day laboratory activities 'sampling from and building on the work of others, taking what was successful in one experiment and applying it elsewhere, proceeding through imitation, eclectic opportunism, bricolage, and so forth' (2010, 565). Milburn identifies three 'mods' made to SF by scientists that underscore SF's influence on science: 'blueprint', 'supplementary', and 'speculative' (2010, 566-8).[14] A blueprint mod refers to 'the direct effort to transform some discrete element of a SF text into a technical reality', and has become more common over the last century, involving something along the lines of abstracting a diagram from a fictional narrative, which might see the 'identifiable traces of SF […] left far behind' (Milburn 2010, 566). Milburn states that the 'subgenre of popular science writing whose formula is "The Science of [X Media Franchise]"' facilitates this 'process of extracting certain technical resources from SF' (2010, 566). However, Bassett, Steinmueller and Voss argue that instances of such direct influence on science by SF are 'relatively rare' (2013, 3).

Milburn acknowledges that some elements of SF are technically impossible, but can still 'enter into the discourse and practice of professional science' through supplementary mods that offer 'scientifically viable alternatives' (2010, 567). In other words, fictional inventions can transition to reality, but often not in the way they are first imagined. These supplementary mods can subsequently inform 'new

[13] Atwood views speculative fiction to be more closely aligned with realism than science fiction, the former 'employing the means already to hand, and tak[ing] place on Earth', the latter denoting 'books with things in them we can't yet do or begin to do, talking to being we can never meet, and place we can't go' (2004, 513). This interpretation has 'elicited ire from those in the science fiction community who maintain that science fiction is itself empirically rigorous and plausible' (Winstead 2017, 228).
[14] As Milburn explains, 'among computer geeks and gamers, the practice of reworking and transforming software and hardware created by others is called "modding", whilst 'among music fans, "sampling" and "mashing" function in a similar way' (2010, 565).

blueprints for future science and future fiction' (Milburn 2010, 567). Speculative mods appear 'frequently in scientific writing as a way of discussing possible futures and extrapolations of current research', and mostly venture into the 'social potentials, payoffs, and other visions' of the concluding sections of research or funding proposals (Milburn 2010, 568). However, they are often also applied in discourses surrounding the consequences of scientific and technological change, with Milburn citing Ray Kurzweil's popular science book about AI titled *The Singularity is Near* (2005) as a key example (2010, 568).

Yet, as Milburn suggests, the many interrelations between speculative modding in scientific writing and SF as 'the predominant mode of speculative narration in the modern era' are frequently ignored (2010, 568). If, as Milburn claims, speculative mods in scientific writing are being acknowledged in the field as increasingly 'powerful' in the development of science, then is it not justifiable that we should also be paying more attention to the role of SF in the development of science? (2010, 568). Especially given that 'the genre has been generally understood to adhere to the worldview of modern science, in attitude and vision if not in actual details of consensus knowledge', and that it is 'rarely concerned with falsifiable predictions' (Milburn 2010, 562).

The argument for symbiosis between SF and futures studies as modes of thinking about the future reflects burgeoning arguments for a relationship between SF and philosophy (see, Sanders, 2007; Mulhall, 2008; Coplan and Davies, 2015; Schneider, 2016).[15] Similar to the use of scenarios in both SF and futures studies to map out possible futures, and Milburn's outlined mods to SF by scientists, a prominent line of argument in support of the philosophical function of SF 'points out that philosophical enquiry itself is often conducted through the use of brief fictional narratives' or 'thought-experiments' (Davies 2015, 135). As Sanders states, to a 'very considerable extent […] philosophy and science fiction are thematically interdependent insofar as science fiction provides materials for philosophical thinking about the logical possibility and paradoxes of time travel, the concept of identity and what it means to be human, the nature of consciousness and artificial intelligence, the moral implications of encounters with extraterrestrials, and the

[15] These studies focus on SF film. As Coplan and Davies write, there is a range within this argument, while some acknowledge 'philosophical themes can be present in cinematic works', others discuss how 'cinema itself can function as a medium in which philosophical work can be done' (2015, 1).

transformations of the future that will be brought about by science and technology' (2007, 1). Davies adds, thought-experiments are used as 'instruments for cognitive advance in various branches of science. So why shouldn't the more extended narrative characteristic of literary and cinematic works also, at least on occasion, serve as instruments of cognitive advance?' (2012, 225).

As Coplan and Davies state, *Blade Runner* (1982) has often been used to demonstrate the philosophical dimensions of SF and film more broadly, which is the focus of their co-edited collection (2015, 1-12). Indeed, Mulhall articulates that *Blade Runner* is obsessed within the philosophical question of what it means to be human through its depiction of the replicant Roy Batty's (Rutger Hauer) quest for a life on par with that of humans (2008, 29). Similarly, Gaut identifies death, empathy, and what it is to be human as three interconnected 'cognitively rich' philosophical themes within *Blade Runner* (2015, 51). The chapters within Sanders' edited collection, however, also identify *Metropolis* (1927), *2001: A Space Odyssey* (1968), *The Terminator* (1984) and *The Matrix* (1999) as SF films with significant philosophical dimensions (2007, 2).

These areas of research point towards the pedagogical function and value of SF. Indeed, despite the aforementioned criticisms of AI narratives as exposing the public to inaccuracies that can contribute towards negative perceptions of AI that might adversely affect future development within the field, several studies indicate that the employment of AI narratives in SF as pedagogical tools to teach AI has a largely positive influence on participating students.[16] For instance, in response to declining student enrolments in computer science programmes, Tambe, Balsamo and Bowring devised three courses at the University of South California that employed SF 'as a way to provide an imaginative and creative context for the discussion of topics in AI' (2008, 1). These courses were aimed at incoming freshmen, non-engineering freshmen, and upper-division computer science students and received an overwhelming positive response, with some students expressing a desire to change their majors, and others joining AI research labs, or enrolling in additional computer science courses (Tambe, Balsamo and Bowring 2008, 5-6). Participating students thought that SF 'added value to the material taught' and persuaded them to enrol in

[16] Other studies have found that fiction can be a valuable pedagogical tool in teaching other areas of science/technology. See, for example, Cruz (2013); Milanick and Prewitt (2013); Yerrick and Simons (2017); Hollenbeck (2020).

the courses (2008, 5). Tambe, Balsamo and Bowring propose that, as a pedagogical tool, SF not only instils a sense of wonder, but also, appeals to students' cultural sensibilities (with many as existing fans of the genre), provides a 'narrative context for discussing the social importance and significance of AI theories and research', and can be used to discuss progress in AI research and 'paradigmatic changes that have shaped the research agenda of the field of AI' (2008, 1).

Goldsmith and Mattei (2011) have also found SF to have a positive effect on undergraduate computer science students' learning about AI. On completion of a new assessment mode in which students reviewed a book or film with significant AI content, Goldsmith and Mattei found that students' evaluations of the course improved and that their interests in further reading around their chosen AI topic increased (2011, 1717-20). Drawing parallels with Gregory and Dillon and Craig, cited above, Goldsmith and Mattei conclude that 'even bad SF can inspire us to learn more about some facet of AI' (2011, 1721). Further research by Burton, Goldsmith and Mattei (2015) also reports a similar positive evaluative response from university students when employing SF to teach AI ethics. Their students' ability to engage with, analyse, and critically think about a 'plurality of viewpoints', discussed with peers in a 'constructive and respectful way', led Burton, Goldsmith and Mattei to conclude that SF 'may be used as an effective tool to immerse students in case studies where they can debate the appropriateness of decisions made [about AI], and consider the possible consequences of those decisions in a less threatening, though still imaginable, fictional world' (2015, 4-5).

Dillon and Schaffer-Goddard's recent paper also relates to this research on SF as a valuable pedagogical tool and investigates the leisure reading habits of practising UK-based AI researchers, yielding a number of areas in which written, as well as visual, performative, and audible texts play a role in the AI field (2022, 1). Some interviewees identified SF narratives specifically as 'the gateway to their careers in AI research', pointing towards such stories' potential 'impact on educational and other initiatives to encourage studies into science and engineering careers', and 'as a recruitment tool' (Dillon and Schaffer-Goddard 2022, 9; Fleischmann and Templeton 2008, 7). SF was also discussed as facilitating better internal communication between AI researchers as a shorthand or databank of shared knowledge, whilst also providing a 'a shared epistemic ground with the public from which to begin to communicate research' (Dillon and Schaffer-Goddard 2022, 14-6).

Whilst some interviewees in Dillon and Schaffer-Goddard's study were concerned about the aforementioned misrepresentation of AI in SF, others used this misrepresentation to their advantage in their public science communication, drawing attention to and correcting inaccuracies, or even motivating 'research direction and engagement to shift public perception' (2022, 16).

Similarly, Weitkamp broadly identifies the value of fictional film and television as forms of accessible public science communication, with its potential to 'reach beyond the usual suspects to bring unexpected and unsought information and views to our attention' (2015, 1). Berlin adds that 'incorporating science themes into films has the potential to open up new audiences to scientific ideas, pique their interests, and inspire them to engage in a broader discussion of the science itself', and that public interest in science and technology is burgeoning and becoming more central to our conversations, which is owed to the internet's reference power, leading audiences to demand 'better science in their fiction [whilst] filmmakers are hewing closer to real science, a virtuous circle that has produced a recent boom in excellent SF films' (2016, 256).

Kirby refers to this recent boom as our entry into 'a golden age for science in movies and on television', which subsequently, has led to an upsurge of academic interest in this area (2014, 97).[17] Kirby also adds that, 'the growth in scholarship on science in cinema can be attributed to a new understanding within the science communication community that the meanings of science, not scientific knowledge, may be the most significant element contributing to public attitudes towards science […] the public makes sense of science – constructs their science citizenship – in the context of their everyday lives, pre-existing knowledge, experience and belief structures' (2014, 97). An outcome of this relatively new understanding of the meanings of science is the embrace of fictional film and television as 'legitimate vehicles for science communication' by scientific organisations, such as the USA's National Academy of Sciences and the UK's Wellcome Trust, who are 'facilitating scientific involvement in the production of films and television programmes',

[17] Kirby argues that, prior to 2000, academia was scarcely interested in fiction, especially film and television, as a mode of science communication, which was instead foremostly focused on journalism, but also documentaries, popular science books, museum collections and public lectures (2003, 231; 2008, 41; see also, Weingart, Muhl and Pansegrau 2003, 279-80; Allgaier and Riesch, 2015).

creating a 'synergy between accurate science and engaging storylines' (Kirby 2014, 97; scienceandentertainmentexchange.org, n.d.).

Kirby's *Lab Coats in Hollywood: Science, Scientists, and Cinema* (2011), examines the benefits and challenges of this relationship between entertainment industry practitioners and scientists who provide productions with science consultancy. Whilst the entertainment industry can influence scientific culture by effecting public controversies, enhancing funding opportunities, promoting research agendas, and stimulating the public into political action, the scientific community can influence and lend legitimacy to productions by fact-checking, shaping visual iconography and advising actors, enhancing plausibility of cinematic events, creating dramatic situations, and placing science in its cultural contexts (Kirby 2011, 9-15). However, Kirby also highlights that whilst scientists are likely to want filmmakers to maintain scientific accuracy throughout a film's entirety, most filmmakers will be satisfied with 'any scientific verisimilitude within the constraints of budget, time and narrative' (Kirby 2014, 99). This has led Kirby to propose 'authenticity' rather than 'accuracy' as a mutually acceptable goal for both parties, with authenticity indicating science in cinema that is inspired by, but not necessarily a reproduction of accurate science, preserving a degree of sincerity and respect towards science and the endeavours of the scientific community (2014, 99).

Another possible reason for the science communication community's relatively recent embrace of fiction might also emerge from the increasingly prevalent notion that humans presently exist within a world akin to those often depicted within SF. This idea was recently foregrounded by the COVID-19 pandemic.[18] As Morgan argues, 'through the SF genre, and in our current crisis, we have seen striking similarities between the behaviours of key individuals, and the manner in which certain events have played out' (2021, 1). Speaking personally, the events of the recent COVID-19 pandemic, including panic-buying, quarantine measures, and the global death toll, have, indeed, felt reminiscent of dystopian and apocalyptic storyworlds in fiction. However, whilst it might be assumed that people would seek a heightened sense of escapism through fiction, during the COVID-19 pandemic it would seem that many people were 'drawn to narratives of apocalyptic

[18] As I write, this notion of SF and present reality blurring is also being discussed in relation to recent developments in AI. For instance, McCarthy's (2023) article in the *New York Post* on OpenAI's ChatGPT runs with a headline that asks, 'Is the sci-fi cliché [of rogue AI] about to turn real?'

disease and societal disarray' (Morgan 2021, 1).[19] For instance, at the pandemic's first peak, Steven Soderbergh's 2011 film *Contagion* became 'the second most streamed and rented film in the Warner Bros. back catalogue, jumping up from number 270', whilst Dean Koontz 1981 horror novel *The Eyes of Darkness* about a new virus called 'Wuhan-400' saw 'e-book sales surge by more than 3000% in just three weeks (Morgan 2021, 1). Similar to previous cited literature, Morgan also emphasises that despite SF's long history of engagement with disease, the genre is not prophetic, but rather, is analytical, and 'for every accurate detail in a work, you can find a plethora of ideas which did not come to pass. SF cannot predict where the next pandemic will come from, or what variety of pathogen will be behind it. However, SF can anticipate how we as individual humans and our societies will continue to change, adapt, and respond to the new situations with which we are confronted' (2021, 6). Thus, Morgan also posits that SF is a valuable creative and communication tool that provides us with 'new ways to think, new ways to approach our past and our future, and new ways to learn' (2021, 6).

Elsewhere, Vint also argues that it has 'become axiomatic to say that the world is becoming like SF' (2021, 1). Vint is specifically concerned with how 'narrative and the imagination are recognized as important tools for negotiating a contemporary world characterized by rapid change and a pervasive reliance on technology' (2021, 44). Like Morgan, Vint also states that SF 'asks questions about the impact of science and technology on human experience', adding that it is a 'cultural form that offers an "everyday" language for thinking about and responding to like in the twenty-first century', underscoring its value as a mode of public science communication that is accessible (2021, 6).

As with other scholars, Vint has also contributed to validating SF as a mode of science communication by underscoring its symbiosis with real science, but also its philosophical dimensions. For instance, Vint's *Animal Alterity: Science Fiction and the Question of the Animal* (2010) draws connections between SF texts and the field of human-animal studies, including their mutual interest in 'foundational questions about the nature of human existence and sociality' and the 'constructions of alterity and what it means for subjects to be thus positioned as outsiders' (2010,

[19] Similarly, the greater density of AI narratives in the postmillennial era and our interests in them is likely a reflection of the increasing developments in actual AI technologies.

1). As such, according to Vint, SF and human-animal studies have much to offer one another, whilst the highly imaginative nature of SF affords the genre more scope than others to comprehend animals outside of anthropocentric belief systems, human-animal studies can provide SF new ways of engaging with alterity, subjectivity, and the limits of the human (2010, 1-6).

More appropriate to this thesis, Vint also draws a further connection between the human-animal boundary and the human-machine boundary, discussing philosopher Rene Descartes' denial of animals' 'capacity for communicative utterance altogether' as reducing the animal to an automaton (2010, 77). Thus, Vint explains that animals are afforded a place that is similar to that of robots or androids within SF, 'these beings, despite their apparent similarities to human subjects, are merely executing a programme rather than engaging with the world' (2010, 77). This exposes the human desire to preserve anthropocentricism, which, according to Vint, 'is the unspoken subtext that fuels much of the anxiety circulating around the question of sentience and how we might recognise its presence in a non-human being' (2010, 77). Whilst Vint's focus on the intersections between human-animal studies and SF has an altogether different focus to this thesis, its exploration of the ways in which humans position themselves in relation to non-human entities is, nevertheless, relevant to my own thinking about fictional film and television's representations of future human relations with AI in the imagined form of SSAs.

More recently, however, Vint has turned attention to the 'relationships among women, technology, sociotechnical practice, lived social relations, and the capacity of fiction to illuminate and shape these entanglements' within *Technologies of Feminist Speculative Fiction: Gender, Artificial Life, and the Politics of Reproduction* (2022), co-edited with Buran. Through its frequent return to the issues surrounding female-gendered representations of AI, this thesis shares concerns similar to those within Vint and Buran's co-edited collection regarding the problematic relationship between technology and gender, particularly within chapter three's discussion of Scarlett Johansson's performances as the female SSA within several recent SF films. Whilst several of Vint and Buran's collection's chapters are alternatively concerned with reproductive technologies and what they mean for women and their bodies, it also draws attention to the 'patriarchal understandings of gender difference' that proliferate within the field of AI, exemplified by the 'all-but-ubiquitous feminine gendering' of digital AI assistants (Vint 2022, 5).

For instance, Escudero Perez's chapter within Vint and Buran's collection, initially draws attention to research indicating that the female brain undergoes 'dramatic reshaping processes to ensure the survival of their offspring', followed by a proposal that this demonstrates that motherhood can be said to be '"programmable" to a significant extent' (Escudero Perez 2022, 140). Escudero Perez argues that this problematic connection between womanhood and technology is perpetuated by the technology industry (2022, 140-4). For instance, Escudero Perez discusses the overwhelming female-gendering of virtual assistant technologies, which have at times been justified by the technology industry as an apparent consumer preference for voices that are evocative of maternal care (2022, 145). Escudero Perez further explains that, despite not being designed as virtual mothers, Apple's Siri, Amazon's Alexa, and Microsoft's Cortana are marketed in a way that read as 'attempts to rescue an endangered figure in the family order' with attributes that are 'disturbingly akin to those by which a "good mother" would have been defined not so long ago' (2022, 145).[20] This anthropomorphising of virtual assistant technologies is, at the same time therefore, also dehumanising for women, undermining the caring and nurturing practices of motherhood as easily replicable and transferable to AI. Escudero Perez also demonstrates how this problematic relationship between motherhood and technology is being translated to film, using Grant Sputore's *I Am Mother* (2019) as a case study. Escudero Perez praises the film's all-female cast, the theme of motherhood at the centre of its SF plot, its rare passing of the Bechdel test, and its departure from the sexualisation of the female-gendered AI named Mother (voiced by Rose Byrne), who performs the role of a surrogate mother to one of Earth's last-surviving humans named Daughter (Clara Rugaard) (2022, 147-53).[21] However, Escudero Perez does also criticise the film's insistence on 'designating the core parental duty as feminine' despite SF's unique capacity for the transcendence of biological and gender norms (2022, 145).

[20] Strengers and Kennedy's *The Smart Wife* (2020) also criticises the persistent feminisation of similar technologies, especially those within the home. Strengers and Kennedy propose a feminist reboot of these devices, which seem to be modelled on the 1950s housewife and are subsequently undoing progress in gender equity (2020, 205). See, also, Kember and Zylinska (2012).

[21] The casting of Byrne does undermine this apparent departure from the sexualisation of Mother within *I Am Mother.* Byrne, whose Australian accent is highly recognisable within American cinema, has often been considered as one of the world's most attractive women. For example, Byrne has ranked in the top twenty of *FHM Australia*'s Sexiest Women Alive poll twice (Vernon, 2021).

Thomas' chapter within Vint's and Buran's co-edited collection alternatively argues that whilst the cyborg in SF is repeatedly imagined as a 'submissive, sexualized, and fetishized woman-coded entity' she is also 'undeniably queer as well' (2022, 244). This queerness emerges from the cyborg's simultaneous closeness and estrangement from organic humanity, 'a tension that continues troubling the conventional science fictional gaze, or that of the white, cis-heterosexual male' (Thomas 2022, 244). Thomas proposes that this is why the female cyborg is often portrayed in SF narratives as compliant, reflective of desires to tame or control queer womanhood's unruliness, as she 'contradicts established ways of what a woman should and act like' (2022, 244).

However, Thomas proposes that, as well as repressive, there are also liberatory aspects of the lesbian cyborg's representation in SF, in which some are depicted as 'refusing to operate within patriarchal narratives of power and control and achieving liberation on their own terms' (2022, 249). Such narratives, according to Thomas, are reminders that 'given the prominence technology has acquired in twenty-first century daily life as a tool of surveillance and resistance, repression and revolution […] the key to utopia might lie in the margins, with those who compel us to disengage from patriarchy, whiteness, capitalism, and other modes of oppression. The lesbian cyborg offers not salvation but a blueprint for liberation' (2022, 256).

Thomas' work, and that of other scholars within this area, is influenced by, and builds upon, earlier landmark studies in feminist technology studies.[22] The first of these is Haraway's *A Cyborg Manifesto,* originally written in 1985, which proposed that already 'we are all chimeras, theorized and fabricated hybrids of machine and organism; in in short, we are cyborgs' (2016, 7). For instance, modern medicine, production processes, and warfare, each involve couplings or fusions between humans and machines (Pohl 2018, 34). Initially, the idea that we are cyborgs seems as though it should be resisted, suggesting that 'people are increasingly dominated by abstract forces and the intrusion of technology on their lives from corporations, the military, and the state' (Pohl 2018, 34). However, Haraway contends that accepting oneself as a cyborg presents opportunities for both resistance and pleasure, particularly for marginalised groups, including women

[22] See, for example, Kirkup *et al.* (2000); Wosk (2015); Strengers and Kennedy (2020); Sinclair (2022).

(2016, 7). According to Haraway, this is because the cyborg is a 'creature in a postgender world' and 'can suggest a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves' (2016, 8-67).[23]

The second of these landmark studies is from Halberstam, who explains that 'in our society, discourses are gendered', men are associated with the mind, with thought, intellect and reason, whilst women are associated with the body, with emotion and intuition (1991, 440). Halberstam goes onto explain that computer intelligence and robotics might be expected to enhance this binary split, however, because of 'the blurred boundaries between mind and machine, body and machine, and human and nonhuman […] automated machines, in fact, provide new ground upon which to argue that gender and its representation are technological productions' (1991, 440). Halberstam's work echoes that from Haraway, but instead, examines the life and work of computer scientist Alan Turing to underscore a comparison between computer intelligence and gender as 'imitative systems' (1991, 443). In other words, gender is learned and performed, it is a technological process. Halberstam also discusses the female cyborg as a 'terrifying cultural icon because it hints at the radical potential of a fusion of femininity and intelligence' (1991, 454). This fusion disturbs traditional gender binaries, and thus, the effect produced by the female cyborg might be described as unsettling or 'uncanny' (Halberstam 1991, 454). Halberstam's work particularly resonates with the fourth chapter of this thesis, which, within the context of the children's SF film *WALL-E* (2008), examines the dismantling of gender binaries through AI, imagined as SSAs, which are, to the detriment of its representational power, later reformed as the film progresses.

The female cyborg as a cultural icon that terrifies is a view that Halberstam shares with Huyssen, who pinpoints a distinct preference for 'machine-women' in literature at the turn of the eighteenth to the nineteenth centuries (1981, 225-6). The industrial revolution's systematic introduction of labouring machines saw the decline of imaginative humanlike automata that could walk, dance, draw and sing as major attractions throughout European cities (Huyssen 1981, 225). As Huyssen states,

[23] As Haraway explains, 'certain dualisms have been persistent in Western traditions; they have all been systemic to the logics and practices of domination of women, people of color, nature, workers, animals – in short, domination of all constituted as others, whose task is to mirror the self. Chief among these troubling dualisms are self/other, mind/body, culture/nature, civilised/primitive, reality/appearance, whole/part, agent/resource, maker/made, active passive, right/wrong, truth/illusion, total/partial, God/man' (2016, 59-60).

literature around this time began to appropriate this subject matter, transforming the android from a 'testimony to the genius of mechanical invention' to 'a threat to human life' (1981, 225). Once machines came to be perceived as a 'demonic inexplicable threat […] writers began to imagine the *Maschinenmensch* as woman' (Huyssen 1981, 226). As Huyssen argues, 'the fears and perceptual anxieties emanating from ever more powerful machines are recast and reconstructed in terms of the male fear of female sexuality, reflecting, in the Freudian account, the male's castration anxiety' (1981, 226). Whilst women had traditionally been viewed as being closer to nature than men, since the Industrial Revolution nature had come to be perceived as a machine, and therefore, 'women, nature, machine had become a mesh of signification which all had one thing in common: otherness; by their very existence they raised fears and threatened male authority and control' (Huyssen 1981, 226).

In Huyssen's analysis of *Metropolis* (1927), regarded as the first cinematic depiction of a female cyborg, woman's otherness is represented by two traditional images of femininity, 'the virgin and the vamp, images which are both focused on sexuality' (1981, 228). As Huyssen explains, 'the myth of the dualistic nature of woman as either asexual virgin-mother or prostitute-vamp is projected onto technology which appears as either neutral and obedient or as inherently threatening and out-of-control' (1981, 229). Huyssen discusses how the machine-woman Maschinenmensch in *Metropolis* is both virgin and vamp, for instance, in earlier sequences of the film she 'obeys her master's wishes and follows his commands', and later becomes a 'harbinger of chaos' (1981, 229). Although Huyssen argues that both of these forms of femininity 'imagined as it is from the male perspective, poses a threat to the male world', however, it would also seem that the machine-woman's ability to embody both virgin and vamp identities and oscillate between these two 'male-imagined "ideal types"' of femininity on command might actually be part of what men find appealing about them (1981, 228). Female cyborgs can, in principle, offer men the full spectrum of what they desire in women, and all at once, without question.

The figuration of machine-women embodying multiple 'ideal' femininities has continued into the twenty-first century, particularly within the growing sexbot

industry.[24] For instance, as Strengers and Kennedy articulate in their examination of several female sexbot prototypes, most 'embody and perform wifely characteristics in striking ways […] with a bit of porn-inspired sexual fantasy thrown in' (2020, 109). Strengers and Kennedy draw attention to one such sexbot named Samantha, designed by Sergei Santos, who can be easily switched to a friendly, but not sexualised, family mode (2020, 112).

For Richardson, female sexbots present such a potent threat to women that they began the Campaign Against Sex Robots (later Porn Robots) in 2015 (Odlind and Richardson 2023, 5). Richardson rejects the identification of 'prostitution/sex work as a model that can be imported into human-robot sex relations', arguing that this 'shows that the sellers of sex are seen by the buyers of sex as things and not recognised as human subjects' (2015b, 290). The goals of the Campaign Against Porn Robots, outlined in Odlind and Richardson's recent co-edited collection on the subject of sexbots, include abolishing female sexbots, challenging their normalisation as substitutes for relationships with women, opposing the notion of child sexbots as therapeutic for paedophiles, and offering up alternative visons of technology that value women and girls (2023, 13).

Whilst Devlin and Belton agree that the appeal of sexbots seems to be deeply rooted in 'conservative notions of femininity', they also stress that 'the hype around the production of robots designed for sexual gratification or quasi-romantic companionship far outstrips the actual production of such technologies' (2020, 357). In comparison to Richardson, Devlin and Belton seem sympathetic, to a degree, towards some applications of such devices, highlighting that some of their owners 'prefer to omit the word "sex" instead calling them "love dolls" or "synthetiks"' (2020, 372). For example, Devlin and Belton explain that 'for some, the dolls represent safety from the failures of previous relationships', whilst others might also 'purchase the dolls because their fetish is the artificial' wanting the 'woman who is a robot, rather than the robot who stands in for a woman' (2020, 372). Nevertheless, Devlin and Belton conclude their study of 'fembots' by stating that we should leave the trappings of thousands of years of gendered inequality behind us and increase

[24] As Benedict suggests, this is unlike human women, who are often squeezed into either the image of virgin or vamp, rarely spanning both (1992, 18).

diversity and inclusivity around the culture of technology so that it might be possible to make tech products that are also more diverse and inclusive (2020, 378).

A recent report by Collett and Dillon proposes ways that 'four of the weightiest challenges to gender equality presented by recent developments in artificial intelligence' might be addressed (2019, 4). Firstly, Collett and Dillon state that the gap between gender theory and AI practice needs to be bridged, as technological design often captures and reproduces controlling and restrictive conceptions of gender and race which are then repetitively reinforced' (2019, 4). As previously cited literature also suggests, humanoids, robotics and virtual personal assistants are notable AI systems or aspects of systems accountable for this, as well as gendered epistemology, in which AI research takes part in the 'wider socio-technical exclusion or repression of women's knowledge' (Collett and Dillon 2019, 9-10). Collett and Dillon call for improved dialogues between gender theorists and technologists, and the inclusion of gender theory readers in co-authored research papers in AI practice, particularly those with broader expertise in trans, non-binary, queer, and post-colonial, as well as feminist, theories, so as to further explore the 'fundamental barriers to equality embedded in the design and purpose of technologies' (2019, 10).

The second of these challenges relates to AI law and policy. According to Collett and Dillon, 'the development and rise of AI is often perceived to drive economic growth and intensify political power', and so, there is a risk that they will play an 'underlying role in shaping laws and policies on AI at the expense of other more socially equalising motivations' (2019, 13). One area of law and policy relating to AI with a particular impact on distribution of power and gender equality is data and privacy (Collett and Dillon 2019, 14). For example, the collection of personal data by AI systems is used to tailor advertisements to people's personal interests, and even predict personal characteristics, including age, gender, and race (Collett and Dillon 2019, 14). Allowing for information to be filtered by AI in ways that align with user's personal ideologies amplifies certain ideas about marginalised groups and can perpetuate discrimination (Collett and Dillon 2019, 14). Collett and Dillon identify a need to analyse current and emerging AI law and policy through a gender lens, which might draw attention to necessary alterations that could enhance gender equality, as well as the establishment of 'a set of research-based guidelines for ongoing policy development' (2019, 16). Even more ideal, would be intersectional

approaches that consider the multiple aspects of identity that could be 'detrimentally impacted by AI', including race, ethnicity, sexuality, class, and disability (Collett and Dillon 2019, 16).

Biased datasets are identified as Collett and Dillon's third challenge to gender equality (2019, 19). Bias within datasets emerges from people and not the AI itself, and perpetuate existing societal biases and exclusions (Collett and Dillon 2019, 19). For example, datasets are unrepresentative because some groups of people, especially minorities, do not have access to technology, and thus, do not produce data, and those involved in the various stage of AI development also do not exhibit diversity, operating within the limitations of their personal views and values (Collett and Dillon 2019, 19). Collett and Dillon propose the establishment of guidelines for best data practice that are 'more relevant, context-specific, and gender specific', and that also 'clarify terminology surrounding bias and fairness' (2019, 2020).

Biased datasets, which are dominated by whiteness and maleness, therefore rendering minority groups invisible, draws parallels with the lack of diversity in the AI workforce, proposed as Collett and Dillon's fourth challenge to gender equality (2019, 20-5). As computing – once dominated by women and considered low-skilled work – has come to be more widely regarded as culturally, economically and socially valuable, men have moved into the field and pushed women out, creating a 'major disparity' in the AI workforce (Collett and Dillon 2019, 25). This segregation of women, leading to lack of female role models in the AI field for children to be exposed to, perpetuates a vicious cycle that produces notions of women as 'technically incompetent' (Collett and Dillon 2019, 25; see also, Wajcman, 2010, 144). Collett and Dillon call for research that investigates the psychological factors that both motivate women and minority groups to pursue science, technology, engineering, and mathematic subjects in education and AI careers, and likewise, discourage their uptake (2019, 27). They also call for diversity in institutions and organisations that moves beyond numbers to consider 'attitudes, behaviours, and perceptions', and the disruption of associations between particular groups of people and lines of work (Collett and Dillon 2019, 28). Whilst the challenges outlined in Collett and Dillon's report seem monumental, their suggestions for ways to contribute to the mitigation of these challenges, valuably highlights the various avenues for future research at the intersections between AI and gender.

As previously outlined, this thesis makes its foremost intervention within the field of film, television and media studies, its original and significant contribution emerging from its in-depth focus on how particular elements of fictional film and television form and style (platform/narrative, genre, stardom, and audience) might affect the representation of AI, in the imagined form of SSAs. Telotte's *Replications* might be thought of as one of the most well-known works that explores 'imitators of humankind' in the SF film, which provides a valuable 'robotic history' of the genre from *Metropolis* (1927) to *Terminator 2: Judgement Day* (1991) (1995, 3). Telotte observes that the late twentieth century saw an upsurge in SF films about robots, androids, cyborgs, and replicants, reflecting not only our hopes and fears about the permeance of AI in our culture, but also an increasing awareness of our own artifice and constructedness, as we often 'seem controlled by a program not so very different from the sort that drive the artificial being which abound in our films' (1995, 4). However, in the near thirty years since *Replications* was published (which includes the time period that this thesis focuses on), many more important AI narratives from fictional film and television have emerged, which warrant academic treatment as part of this larger genealogy of imagined forms of AI. Indeed, Telotte has also recognised this by revisiting the robot in SF film through ecology theory, proposing that the robot has established itself as a popular culture 'meme' that appears in three primary forms: the purely mechanical tin man, the complex humanoid robot with the electronic brain, and the human-seeming cyborg or android (2016, 7-11).

Whilst not entirely situated within film, television and media studies, Cave, Dihal and Dillon's (2020) co-edited collection brings together humanities and social science scholars to discuss a breadth of fiction and nonfiction AI narratives throughout history. Liveley and Thomas' chapter, for example, traces imaginations of devices with semblances to modern conceptions of AI back to Ancient Greece in *Homer*'s *Iliad* and *Odyssey*, which they argue, have established a '"programme" for us to follow in the retelling and rescripting of our present and future AI narratives […] stored as part of the AI data set in the human "memory bank" that constitutes the classical myth kitty' (2020, 44). However, of particular significance to this thesis from Cave, Dihal and Dillon's 2020 co-edited collection are Devlin and Belton's examination of 'fembots', discussed above, which has been drawn upon in the third chapter of this thesis, and Recchia's study of films tagged 'artificial-intelligence' on

the Internet Movie Database, which has influenced the second chapter of this thesis' explorations of AI's apparent inroad into the romantic-drama film genre.

Drawing some parallels with this thesis's focus on AI and film (sub)genres in chapter two, Short examines cyborg cinema as 'both an important sub-genre of SF and a definitive cycle in its own right' (2005, 1). Short first noticed a cyborg cycle emerging after watching back-to-back screenings of *Blade Runner* (1982)*, The Terminator* (1984), *RoboCop* (1987) and *RoboCop 2* (1990) at a local cinema in the early-1990s (2005, ix). These four films shared a prominent theme, which was 'not simply technology's intersection with humanity but its specific uses under Capitalism' (Short 2005, ix). Short adds that these cyborg films are also cautionary tales that 'seemed to be talking about the present rather than any conceived future' (2005, ix). However, upon the release of new cyborg films, Short identified new themes, such as the pitting of artificial humans against one another with sides either representing humanity or our antithesis (2005, ix). Short also observed that later cyborg films also began to move away from dreams of creating perfect workers to those of creating perfect women, as well as introducing surrogate families, revised masculine archetypes, and finally, cyborgs 'graduated from the margins of popular culture to become an icon of blockbuster status' (2005, ix-x). Short's work, therefore, examines the modification and evolution of cyborg cinema since the 1980s to the early 2000s, and applies Schatz's four-stage life cycle of film genres to demonstrate this (2005, 18).

Whilst Short identifies cyborg cinema as a 'sub-division of SF cinema', she also notes that it 'borrows' from other genres too, such as horror, film noir, action, comedy, and melodrama (2005, 20). However, Short's application of the word 'borrow' suggests a view of cyborg cinema as still principally belonging to SF, despite its engagement with other genres. This thesis takes a similar notion further in chapter two, and also to a degree in chapter four, with the former studying the effect of the romantic-drama's conventions on the representation of AI, the latter examining AI's depiction in the children's SF film. Chapter two in particular highlights the evolution of AI narratives in cinema, and gives some indication as to the extent of their increasing pervasiveness within broader popular culture, breaking away from the exclusivity of SF.

By drawing attention to cyborg cinema's adoption of other genres' elements, Short identifies two projections of cyborgs, 'those with whom audiences are asked to

sympathise with (frequently because they are heart-warming and comic rather than any oppression they might experience), and those represented as a threat to society (for various different reasons)' (2005, 24). Indeed, chapters one and two of this thesis draw similar conclusions. Chapter one argues that the complex narrative mode allows for complex and shifting identifications with AI characters in postmillennial television, which works towards marshalling viewers' sympathies towards them, and ultimately, cementing our moral allegiance with them, even over many of the featured human characters. Chapter two proposes that the employment of the conventions of the romantic-drama are also fostering more sympathetic representations of AI and working towards normalising the future possibilities of human-AI relations. Like Telotte's *Replications*, Short's work on cyborg cinema is now somewhat dated, therefore, this thesis contributes to an updating and further development of work in this area.

Warwick also identifies texts about 'artificial or machine intelligence (robots and computers)' as a distinct subgenre of SF, but is concerned with literature rather than film or television (1980, xiii). Warwick designates this subgenre 'cybernetic fiction', and similar to Short, identifies and analyses the recurring images, patterns, and meanings within these texts (1980, xiii). Warwick is also interested in the 'cross-fertilisations taking place between writers in the subgenre and between the fiction and the developments in theoretical science and technological innovation' (1980, xiii). Similarly, this thesis draws various connections between AI narratives in fictional film and television and wider media and popular science/technology discourses about AI throughout its chapters.

Warwick's sample of 225 short stories and novels, written between 1930 and 1977, indicates a pattern whereby images of man's relationship with machine intelligence evolves, 'from the simple to the complex and from optimism to pessimism' (1980, xvi). This shift, according to Warwick, occurred at the end of the second world war, with writers seeming to find it difficult to create images 'except those in which technology destroys man and his environment' (1980, xvi). For this reason, Warwick accuses post-war cybernetic fiction of being 'ill-informed about information theory and computer theory and lags behind present developments instead of anticipating the future' (1980, xvii).

Warwick goes onto to propose that cybernetic fiction can be organised using systems theory, which has often been employed within the sciences to accumulate a

'vast store of valuable information' (1980, 92). Warwick introduces three system categories from the physical and biological sciences and applies them to cybernetic fiction: the closed- , open- , and isolated- system models (1980, 97).[25]

Early cybernetic fiction from 1930s-1940s is categorizable under the isolated-system model and typically explores a singular man-robot relationship in a limited social environment (Warwick 1980, 102). Usually depicting first meetings, isolated-system stories are more about the delight and wonder of exploration and discovery and less about the 'possible subsequent social effects' of these meetings (Warwick 1980, 103-27). This is because writers were not afforded the space to consider these wider social effects and were confined to the limitations of the short story, the 'predominant form in early American SF' (Warwick 1980, 103). These stories, however, departed from the 'customary depiction of robots as dangerous', with 'interesting new fictional possibilities' forged through benign and sympathetic depictions (Warwick 1980, 103-4). Indeed, this thesis makes a similar argument of sympathetic representations of AI, in the imagined form of SSAs, within postmillennial fictional film and television, often seeming to form the most unique and thought-provoking stories.

Warwick explains that dystopian cybernetic fiction 'generally uses a closed-system model of the society it describes', with the social unit set apart from others, set in enclosed cities or entire worlds (usually Earth) where there is no space/interplanetary travel (1980, 131). These stories emerged in the early-1950s and proposed that whilst man may have 'survived the catastrophic force of military violence' after the second world war, he may 'not resist the covert invasion of the automated machines' (Warwick 1980, 153). The societies within these closed-system stories are also mechanical, with man himself a smaller machine within this large-scale clockwork operation (Warwick 1980, 131). Thus, the technologies depicted in

[25] A closed-system is 'the model developed by classical mechanics' that sees nature as 'an imperturbable machine that one glimpses from the outside' (Warwick 1980, 98). A biological system, like the human body, is an open-system; 'all its parts are constantly being renewed. Matter passes in and out of the system. Over evolutionary periods of time living systems tend to become more complex […] new forms emerge suggesting an ongoing creative purpose' (Warwick 1980, 163-4). Finally, an isolated-system is 'an assemblage or combination of things that is uninfluenced by anything outside it' (Warwick 1980, 98). Whilst no isolated systems exist in the physical world, Warwick states that 'the only real isolated system might be a black hole as it is now understood' as nothing can escape from them (Warwick 1980, 99). Writers of SF often work within an isolated-system model, according to Warwick, as it 'allows them to consider a particular aspect of cybernetics without concerning themselves with its impact on the total system' (1980, 99).

these stories are often malevolent, dangerous, and controlling, opposing 'freedom, creativity, and fulfilment of the individual' (Warwick 1980, 147). Almost all closed-system stories are in novel form, set in the near future with extrapolations of contemporary aspects of society, and conflict is the prevailing model whereby 'the computer and those who own it oppose the protagonist, and the plot is resolved with the smashing of the computer' (Warwick 1980, 131). The shared characteristics of these stories, particularly their nightmarish images of technology, has led Warwick to argue that dystopian cybernetic fiction has become 'repetitious' and 'boring' over the years (1980, 134). Warwick also suggests their disappointing quality might stem for their inability to sustain themselves across the length of a novel (1980, 156). Building upon this, similar notions of sustainability are also discussed within the first chapter of this thesis, which suggests a possible degree of incompatibility between complex narrative television and the often dystopian popularised technological singularity hypothesis. Furthermore, Warwick argues that dystopian closed-system stories are ineffectual social criticism, as they do not seem to have affected society's 'computerization', despite their demonisations of future technology (1980, 154).

As Short's study of cyborg cinema has already indicated above, post-war pessimism towards technological innovation shifted again in the late-1980s, with the emergence of a few family friendly cyborgs that 'install themselves into happy domestic settings', citing Johnny 5 in *Short Circuit* (1986) and the titular in *D.A.R.Y.L* (1985) as examples (2005, 23). For Warwick, however, open-system cybernetic literature, which is more positive about technology and appeared around a decade after its closed-system counterpart, is comparatively 'more difficult to classify' as it does not work in stereotypes and is far fewer in numbers (1980, 161). However, these stories do still share some characteristics, such as their imaginations of futures in which 'computers have become an integral part of society' (Warwick 1980, 161). Furthermore, open-system stories are mostly set in the far future, space travel is frequent, with speculations of strange new worlds, rather than extrapolations of the present world slightly exaggerated out of focus (Warwick 1980, 161-2). Puzzle-solving is the prevailing model of these stories rather than conflict, and so man and computer are depicted as in symbiosis, working together harmoniously as they move into the future (Warwick 1980, 162). Whilst Warwick is careful not to label open-system cybernetic stories as utopian, they do regard them as creating 'visions of the future that are positive metaphors – future events worth aiming at – in

sharp contrast to the closed-system, […] where the imagination cannot create an image of a future worth trying to achieve' (1980, 165).

Warwick's observations about the elements of these three types of cybernetic literature, for example the narrative limitations of isolated-systems' short story form, has similarities with this thesis' in-depth analysis of elements of fictional film and television form and style and how they affect imaginations of AI. However, there are clear differences between Warwick's work and this thesis, which not only alternatively focuses on fictional film and television, but also updates its focus on twenty-first century AI narratives. Warwick's study, nevertheless, lends support to the notion central to this thesis that specific formal and stylistic elements of fictional texts can bear important influence on their overall representations of future technologies.

The comparisons that Warwick makes between fantasy and SF literature, in which SF is labelled as a more recent phenomenon that sees machines replacing flying carpets and future possibilities replacing pure fantasy, are brought to the fore within Schelde's (1993) study of the 'monsters' in the SF film (1980, 2). Schelde contends that folklore is a precursor to SF, a 'fictional account of the ongoing battle between human beings and the environment, the battle between nature and culture. Typically, nature is anthropomorphized and is given some human-like – but awful and dangerous – form. Nature in folklore is represented as trolls, monsters, ogres, leprechauns, elves, nixes, and other such creatures whom humans need to befriend or do battle against in order to keep their own distinct domain, that is, culture, intact' (1993, 3). The battle in folklore is 'between the raw power of the ogres and trolls and the ingenuity and inventiveness of human', and therefore, according to Schelde, this battle is also between science and technology (1993, 3). Schelde explains that once humans were able to explain natural phenomena in scientific terms, folkloric monsters became 'naïve' and 'pathetic', and instead, humans turned to the 'new "unknowns"' of outer space and far away planets, which they populated with other forms of anthropomorphised monsters that were closely related to those from folklore, such as robots, cyborgs and androids (1993, 3-4).

Schelde also compares science to myth and magic, stating that the former grew out of the latter, with both forming 'attempts at explaining how the world functions' (1993, 4). Moreover, although science is a 'more efficient, more sophisticated – and testable – model of the world and the way it functions', it shares

with myth and magic a certain mysterious property that is often perceived as potentially dangerous, especially to nonexperts of science (Schelde 1993, 5). Schelde suggests that this perception likely occurs because the public are not informed about scientific progress or invited to share their opinions until after new products or processes are thrust upon us with the promise of improving our lives (1993, 5). Just as 'magic, the "practical extension" of religion/myth' belongs to magicians, witches, or shamans, 'science and its "practical arm" technology […] are the sole property of specialists – scientists who know the "secret" formulas for harnessing and unleashing powers lodged in nature' (Schelde 1993, 5). This translates to SF cinema, which according to Schelde, is a 'catalog of vague and often irrational fears and complaints', with many narratives framing science and technology as invading our minds and bodies, making us more like machines and 'slowly robbing us of our humanity' (1993, 9).

Drawing parallels with Telotte, Short, and Warwick, Schelde chronologically addresses this apparent dehumanisation by science and technology as told by SF cinema, which unfolds as a 'story of the increasing eradication of the boundary between humans and machines' (1993, 10). Firstly, Schelde discusses the machine, an apparatus operated by humans often against the backdrop of the factory, which is depicted as disrupting its operator's biological rhythm, enslaving them to production and profit (1993, 121-8). The folklore monster here is not the machine, but rather, the corporations that implement these machines as a buffer between humans and raw materials (Schelde 1993, 5; 126).

Secondly, Schelde addresses the advent of the computer in the 1950s, leading SF cinema to move towards depictions of complex disembodied brains that want to 'force humans to become their slaves and, ultimately, to merge with humans and create a new superrace' (1993, 132). In SF, these computers are 'core signifiers that serious, potentially dangerous science is in progress', analogous to the folkloric wizard's magic wand as they enable scientists to 'work miracles' (Schelde 1993, 133). For Schelde, computers in SF cinema are 'reflections of a scientific mind, a mind that says the world would be a better place if there were more order, if people were more like machines', and so, humans edge closer to dehumanisation by science (1993, 148).

However, Schelde states that 'computers do not fare well in SF movies because they're not photogenic […] never really cute' (1993, 150).[26] Robots, by contrast, are 'infinitely more anthropomorphic', and if not built to resemble humans, are constructed in the image of other living creatures, such as pets (Schelde 1993, 150). According to Schelde, Johnny 5 from SF film *Short Circuit* is the 'ultimate cute robot', the character's acceptability among human characters and the audience emerging from his pursuit to learn how to be human through the embrace and consumption of American popular culture as though he were a 'real' teenager (1993, 160). This humanisation of Johnny 5 is furthered by his acquisition of surrogate parents, foremostly Stephanie (Ally Sheedy) who provides him with a mother's 'selfless love', an 'essential ingredient in the SF movie definition of what a self is' (Schelde 1993, 160). Finally, in *Short Circuit 2* Johnny-5 is awarded American citizenship, a full recognition of his personhood (Schelde 1993, 161).

Additionally, Schelde also identifies 'evil robot species' as another form of anthropomorphic machine to prominently feature within SF cinema, which are 'hellbent on becoming masters of the universe, and particularly, on killing off any humanlike, carbon-based, race in sight' (1993, 158). Robots like this embody humanity's worst fears, according to Schelde, as they are faceless, homogenised, and totally emotionally and intellectually inaccessible to us (1993, 158). Yet, for Schelde, much like Warwick, evil robot species are so 'boring' and 'tiresome' that they warrant no more than a paragraph of discussion, citing *Doctor Who*'s (1963-) Cybermen as an example (1993, 158). However, robots signal another step towards humanity's dehumanisation by science and technology through their emulation of human workers, they are 'humans trapped in monstrous technological forms', and are 'more effective, cheaper, less troublesome, and infinitely more obedient' than their human counterparts, rendering them obsolescent in the modern workplace (1993, 150).

[26] The distinct cuteness of robots has recently been examined by Leyda (2016) and Gn (2016). Leyda discusses 'fembots', who remain cute for as long as they are nonsentient, after which point they become threatening (2016, 171). Gn instead explores cute design as contributing to the anthropomorphism of social robots and humans' acceptance of them (2016, 197). Both of these studies build upon Ngai's recent theorisation of cuteness as an aesthetic category that discloses 'the surprisingly wide spectrum of feelings, ranging from tenderness to aggression, that we harbour toward ostensibly subordinate and unthreatening commodities' (2012, 1). This notion of anthropomorphised AI as cute is returned to in chapter four of this thesis, with WALL-E identified as a sympathetic SSA on account of his cute decrepitude.

The next step towards humanity's dehumanisation by science and technology, as told by SF cinema, sees humans and machines begin to merge, with Schelde referring to films about cyborgs in the 1980s, in which 'docility is secured by submerging the core of a human into a casement of technology ' (1993, 196). However, Schelde argues that by this time the machine is starting to become sexy and desirable to us, mentioning the star image of bodybuilder-turned-actor Arnold Schwarzenegger (1993, 203). Schwarzenegger's appearance in *Conan the Barbarian* (1982) helped to propel the former oddity of bodybuilding into the mainstream, with millions of people lifting weights and showing off physiques, whilst discussing their exercise with others, the discipline required for these regimens rendering them more physically and mentally machinelike (Schelde 1993, 203-4). In addition, Schelde states that Schwarzenegger's foreignness and awkward screen presence further contributed to his mystique, he is 'alien, robotlike, not quite human' making him particularly befitting for the role of the relentless cyborg assassin in *The Terminator* (1984) (1993, 203). Schwarzenegger is, according to Schelde, 'the ultimate docile body […] enhanced with steroids encasing a totally docile mind: the one-track and very clever computer that does what it is programmed to do, and little else' (1993, 203). Schelde's brief discussion of Schwarzenegger's star image in relation to his performance as the Terminator draws parallels with this thesis' third chapter and its exploration of Hollywood actor Scarlett Johansson as an apparently 'ideal' representation of the female SSA in postmillennial SF film, demonstrated by her repeated casting in the role of such characters. In the spirit of Schelde's study, chapter three also contends that the frequent depiction of AI as female is dehumanising for women as a form of objectification in the extreme.

The final step towards humanity's dehumanisation by science and technology, as told by SF cinema, is 'the point where the boundary between human and machine has finally become so blurred that there no longer is a difference between the two' (Schelde 1993, 214). Many of these films engage with the male dream of procreation without women, only to create artificial versions of their ideal woman, with Schelde citing *The Stepford Wives* (1975) and *Android* (1982) as examples (1993, 214-21). Schelde reads these films as metaphors 'for what has happened since the beginning of the women's movement', with *The Stepford Wives*' depiction of men who kill their wives and replace them with 'exact replicas that are created in the image of the male ideal woman/wife, idiotic cook-bake-clean-take-

care-of-the-kids-submissive-sex-objects' a reaction against the women's movement and their refusal to be docile homemakers, whilst *Android*'s depiction of an untameable female android who kills her creator to live an independent life a reflection of women having 'shaken the shackles of being home-bound dependents of men' (1993, 224).[27] In *Android* and *The Stepford Wives,* the revelation that characters thought to be human are artificial epitomises this blurring between humans and machines (Schelde 1993, 231). This eradication of human-machine boundaries is not only dependent on the machine looking human, but also on the depiction of them being behaving 'more human than humans', as having a seeming greater capacity for emotion and empathy (Schelde 1993, 214). The first chapter of this thesis develops a similar observation, arguing that the nature of complex narrative television allows for complex and shifting identifications with AI characters within the case studies *Westworld* (2018-22) and *Humans* (2015-8), who equally become more sympathetic and humanised as these series progress, resulting in the invitation for viewers to establish stronger moral allegiances with them than many of the featured human characters, whose own humanity is at risk of serious erosion.

The literature reviewed above provides key contributions to knowledge in relation to AI and its surrounding narratives, emergent not only from film, television and media studies, but also from literary studies, gender and feminist studies, science communication studies, futures studies, and philosophy, and there are further pertinent works drawn upon throughout the chapters of this thesis. By synthesising and mapping out the arguments made within them, this literature review has demonstrated how this thesis relates to and complements this body of existing work, and also highlights some differences, therefore, pointing towards its own significant contribution to knowledge in relation to AI and its surrounding narratives, which emerges from its original in-depth focus on questions of elements of form and style in the shaping of representations of SSAs within popular postmillennial American and British fictional film and television.

[27] The 2015 film *Ex Machina* features a plot that is resemblant of *Android.* The continued relevance of this narrative into the twenty-first century, whereby a female android kills her male creator in order to secure her own freedom and autonomy, suggests that women have not been able to entirely break from the shackles to which Schelde refers, and that the aim for gender equity is still very much ongoing.

Chapter One

Popular Postmillennial Fictional Television and Narrative Complexity: Towards Sympathetic Representations of Artificial Intelligence, Imagined as Sentient Synthetic Anthropomorphs, in *Westworld* (2016-22) and *Humans* (2015-8)

In a recent UK report on artificial intelligence (AI), 'Hollywood depictions' were identified as perpetuating 'unduly negative' views of AI among the public through their 'sensationalist' and 'outlandish' representations (SCAI 2018, 22-3). This report does not precisely delineate its application of the term 'Hollywood depictions', although it is reasonable to assume that this is a reference to the conventional feature film output of California's major film studios in America. Read in this way, this statement is not inclusive of other fictional film modes (such as arthouse films or films from other geographical regions), nor is it inclusive of fictional television in its entirety. This raises the important question as to how alternative popular screen fiction modes are representing AI to their audiences: Do they also perpetuate unduly negative views of AI through sensational and outlandish depictions? This chapter explores this question, with a focus on the representation of AI, imagined as sentient synthetic anthropomorphs (SSAs), and humans' possible future relations with them, within postmillennial popular American and British television, specifically the mode that has been designated as 'narrative complexity'.

According to Mittell, since the late-1990s, narrative complexity has emerged as an alternative to typical episodic and serial forms typical to television, and has become widespread and popular to the extent that we might consider ourselves to be in the era of complex television (2015, 17-31).[28] With origins in America, narrative complexity 'redefines episodic form under the influence of serial narration – not necessarily a merger of episodic and serial forms but a shifting balance' (Mittell 2015, 18). Features of narrative complexity include the rejection for plot closure in every episode, ongoing stories across episodes and genres, and an 'elaborate, interconnected network of characters, actions, locations, props and plots (Mittel

[28] Episodic television or the 'series program' takes the form of 'weekly episodes with a defined set of recurring characters. Each week's episode is basically self-contained' (Butler 2018, 34). In contrast, serial television 'expects us to make specific and substantial narrative connections between one episode and the next' (Butler 2018, 40).

2015, 18; Booth 2011, 2). Narrative complexity may also play with temporality, subjective narration, and the incorporation of transmedia, offering a 'broader palette of stylistic techniques to help make them distinctive innovators' (Mittell 2015, 20). However, narrative complexity is not uniform and convention driven, in fact, unconventionality might be its 'defining characteristic' (Mittell 2015, 18).

Television of a similar nature has also been referred to as 'quality television' (see, for example, Cardwell, 2007). However, as Mittell explains, quality television is a 'term most usefully understood as a discursive category used to distinguish certain programs from others, with such programs less united by formal or thematic elements than used as a mark of prestige to elevate the sophistication of viewers who embrace such "quality programming"' (2015, 2010). This has informed the application of the term 'complex television' over 'quality television' in this chapter, in avoidance of the latter's 'slippery notions of prestige and value' (Mittell 2015, 210; Wilkins 2019, 27).

The two television series subject to close textual analysis informed by narrative theory within this chapter are HBO's *Westworld* (2016-22) and AMC's/Kudos's *Humans* (2015-8).[29] *Westworld* and *Humans* were selected for several reasons, including their popularity. When conducting an internet search for television narratives about AI produced since 2000, there are numerous results, highlighting the extent of AI's popularity in postmillennial television.[30] Amongst these results, however, *Westworld* and *Humans* often feature alongside one another in compilations of television series about AI that are considered as the 'best' or 'most popular' (see, for example, Lee, 2015; Chowdhury, 2017; Suresh, 2020; Muthyala, 2021). Moreover, whilst *Westworld* has won numerous awards including nine Primetime Emmys, *Humans*' popularity is further underscored by its recognition as bearing the most successful pilot episode of an original drama on

[29] This chapter is primarily concerned with *Westworld*'s and *Humans*' first seasons. *Westworld* is adapted from Michael Crichton's 1973 film of the same name, whilst *Humans* is adapted from Swedish television series *Äkta Människor* (2012-4). I am adopting what is typically regarded as American vernacular by referring to a television show in its entirety as a 'series' and a batch of episodes within that series as a 'season'. However, the term has become more broadly adopted in the UK with the influx of American television available to audiences via streaming services in the postmillennial era. Whilst *Westworld* was produced by American company HBO, *Humans* is an American/British co-production by AMC/Kudos, although the series is set in the UK and features a mostly British cast.

[30] *Battlestar Galactica* (2004-2009), *Almost Human* (2013-2014), and *Raised by Wolves* (2020-2022) are additional examples.

Channel 4 for two decades when it was originally broadcast in the UK (Montgomery, 2020; Plunkett, 2015).

Westworld and *Humans* were also selected as case studies on the basis of their comparability. Both have similar numbers of seasons and episodes per season, both were abruptly cancelled without final solutions in 2022 and 2019 respectively, and both foreground SSA characters and similar themes surrounding AI. One such theme of significance relates to the popular science/technology hypothesis of the 'technological singularity', which, in essence, anticipates a point in the future where 'exponential technological progress [brings] about such dramatic change that human affairs as we understand them today come to an end' (Shanahan 2015, xv). However, whilst *Humans* begins by depicting how 'synthetics' might impact upon daily life within the average British family home before exploring broader socio-political consideration of synthetics as a marginalised and oppressed group, *Westworld* begins by exploring the possibility of an expansive-yet-contained simulation populated by 'hosts' who are programmed to cater to wealthy human guest's depraved fantasies.[31] Later, *Westworld*'s storyworld also expands from these themed parks, owned by company Delos, after several hosts develop sentience and start a revolution against their human abusers.

Drawing upon Mittell's poetics of complex narrative television, this chapter firstly analyses *Westworld*'s and *Humans*' opening titles and pilot episodes, which can be used to infer their overall degrees of narrative complexity. *Westworld*'s pilot establishes the series as highly complex, extensively reflected within its opening titles, which in themselves function as solvable puzzle for viewers, giving clues about each season. Produced by a network that has built its reputation and subscriber base on complex narratives, *Westworld* follows in the footsteps of HBO's previous output, including *The Sopranos* (1999-2007) and *Game of Thrones* (2011-9) (Mittell 2015, 17). In contrast, using its opening titles and pilot, *Humans* is perhaps best described as combining elements of narrative complexity with those of more conventional television. This conventionality can be ascertained by the Hawkins family's storyline, which at times is 'soap-ish', involving a marriage breakdown and teen pregnancy unfolding in the domestic space, an approach employed by other recent British television series that have performed well in America, including

[31] 'Synthetics' and 'hosts' are the designations for the SSAs in *Westworld* and *Humans.*

Downton Abbey (2010-5) and *Broadchurch* (2013-17) (Chapman 2020, 106-138). This blending of narrative complexity with soap-ish elements may have been employed within the co-produced *Humans* to maximise its appeal to both AMC's American viewers and Channel 4's British viewers. Indeed, whilst AMC has established a name for itself as a producer of complex American television shows, such as *Mad Men* (2007-15) and *Breaking Bad* (2008-13), Channel 4 has had to meet the conventions and expectations of broadcast television in order to establish itself among traditional UK free-to-air channels from the BBC and ITV. Despite this, Channel 4 is known for its relatively 'challenging, innovative, and risk-taking content that offers an alternative to the other main channels' (Oliver and Ohlbaum Associates, 2014).

Whilst their degrees of narrative complexity differ, within *Westworld* and *Humans* character emerges as a significant site of their narrative complexity, with key characters undergoing changes that are atypical of conventional television (Mittell 2015, 142). Through analyses of one human and one SSA character from both series, this chapter argues that these changes present opportunities for complex and shifting alignments with them for viewers. Ultimately, *Westworld* and *Humans* privilege the perspectives of their SSAs, whom viewers are most potently invited to sympathise with and root for throughout. Therefore, in this regard, whilst their dramatic narratives might lend themselves to the sensational, *Westworld* and *Humans* are not promoting exclusively and unduly negative views of AI through their depictions of AI, imagined as SSAs.

Finally, this chapter examines the compatibility between complex narrative television and the equally complex technological singularity hypothesis from popular science/technology, mentioned above. Compared to feature film, complex narrative television, in its long-form, offers viewers more time with characters in its storyworld, and hypothetically therefore, would seem to be a befitting platform in which to speculate and extrapolate possible technological singularity scenarios in breadth and depth. However, drawing further upon Mittell's work on endings in complex television, this chapter contends that the abrupt unexpected cancellations of *Westworld* and *Humans* speak to the technological singularity as being narratively unsustainable for more than a few seasons, developing too exponentially, too complicatedly, even for narrative complexity, compelling viewers to disengage

(2015, 319-53).[32] This final section speaks to the originality of this chapter's intervention within research on fiction television narratives about AI. The view that SF and actual science are reciprocal is long-established, with 'fiction providing speculations that inspire scientific research, and breakthroughs in scientific research inspiring fictions' (Tabas 2019, 71).[33] However, as Tabas articulates, most critics uphold a fundamental difference between SF and science, while the former seemingly offers almost unbound imaginative possibilities, the latter is imagination constrained (2019, 21).[34] This position, however, overlooks broader constraints within fictional platforms, including television, such as formal, technical, and financial constraints, as well as audience tolerance for content, which, as this chapter suggests, can threaten the sustainability of a complex concept such as the technological singularity within the medium, limiting the potential for prolonged success. This chapter might, therefore, have implications for the development of future AI narratives in television, underlining a potentially significant challenge in employing the technological singularity as the basis for a long-form complex narrative.

Existing scholarship has discussed *Westworld* as a complex television narrative, which informs and complements this chapter's research. For example, Cabral-Martins has examined *Westworld* as a 'puzzle narrative', focusing specifically on its criticism as an 'orienting paratext' that is essential to its full intended experience (2019, 144). Instead, as outlined above, this chapter considers *Westworld*'s and *Humans*' opening titles and pilots as indicators of their degrees of narrative complexity. Nevertheless, Cabral-Martins articulates that *Westworld* is an exemplar of narrative complexity, but also suggests that it is perhaps more

[32] In addition to *Westworld* and *Humans*, other recent television series about AI and the technological singularity that have also been cancelled unexpectedly or abruptly, even after just one season, lending support to my argument and signalling a developing trend. For example, HBO's *Raised by Wolves* (2020-22) was cancelled after two seasons, despite its popularity and acclaim, leaving viewers with unanswered questions after season two's cliffhanger finale. Similarly, *Altered Carbon* (2018-2020), which tells a highly complex story based on Richard Morgan's 2002 cyberpunk novel, was cancelled after two seasons.

[33] On the reciprocity of science and SF, see also, Bassett, Steinmueller and Voss (2013). Please also refer to the literature review section of this thesis.

[34] Notions of SF as having limitless imaginative possibilities have also been articulated by Tran (2022, 104) and Gunn (2000, 87). Here, Tabas also borrows from theoretical physicist Richard P. Feynman, who is famously quoted as likening science to a game of imagination in a 'straitjacket', as science has to agree with the known laws of physics, it has to figure out what is possible with what we know (Ruggeri, 2011).

intentionally complicated than complex, a narrative that is of 'less coherence and more artifice', and therefore, more likely to disappoint viewers (2019, 144).

Brütsch similarly states that *Westworld*'s 'puzzling elements are embedded in a classical structure facilitating audience participation over a whole season' (2019, 152). According to Brütsch, in *Westworld'*s first season, the 'combination of classical backbone with a number of enigmas and puzzling questions appears compelling', whilst the 'weak point is the convoluted backstory about the foundation of the park and the plans to bring the hosts to consciousness, which turn out to be so complex that […] their elucidation causes more frowns than epiphanies' (2019, 153). *Westworld*'s second season becomes even more problematic owing to its juxtaposition between two separate plotlines, one that further complicates complex action through fragmentation and disorder, and another 'that is so straightforward as to be uninteresting' (Brütsch 2019, 153). Elsewhere, Salvado-Corretger and Benavente add that *Westworld* is a 'paradigmatic example of a model of series that highlight questions of time and identity', describing the revelation that the characters William (Jimmi Simpson) and the Man in Black (MIB) (Ed Harris) are the same person thirty years apart as provoking a 'kind of metaphysical vertigo' for viewers (2019, 264).

Wilkins argues that '*Westworld* employs esteemed performers, has high-production values, and literary and cinematic intertexts that encourage symbolic and reflexive interpretation, presents an unindividuated aesthetic and is narratively complex – a facet attributed to the genius of its auteur showrunners' (2019, 34). Wilkins also mentions changes within particular characters across the series, which this chapter discusses in further depth (2019, 37-8). However, whilst this chapter considers these character changes as evidence of *Westworld*'s attempts to offer more sympathetic representations of SSAs alternatively, Wilkins considers them as evidence of 'masculinist bias', as female characters are only endowed with complex psyches upon exhibiting the capacity for planned violence, 'that is, when each become more masculine' (2019, 38). Wilkins' study is part of a larger, co-edited collection on *Westworld*, which also explores issues of race and the posthuman, the representation of domestic labour, and music as a source of narrative (Vint, 2019; Kessous, 2019; Marshall, 2019).

In contrast, there are fewer academic considerations of *Humans*, and to the best of my knowledge, none that consider in-depth its narrative mode and its degree

of complexity in relation to its representation of SSAs. However, brief mentions of a degree of complexity within *Humans'* narrative have been made by Mitchell and Rich (2021, 39; 2021, 117). Rich, for example, points towards this complexity through an analysis of *Humans'* story development across its three seasons, which begins with a small number of SSAs hiding their true nature in season one, and the 'awakening' of all synthetics at the very end of season two, paving the way for a range of moral dilemmas in season three as 'human beings struggle to accept and integrate conscious synths into their society' (2021, 117). According to Rich, therefore, *Humans* does much more than raising 'important questions about ethics in technology and the nonfictional futures we may encounter', owing to each seasons' reflections of the 'various stages of Brexit and the anti-immigrant discourses that prompted it' in the UK (2021, 117).

Mitchell, however, uses *Humans* to argue that popular culture can address ethical and philosophical questions in relation to robots 'in a way that cannot be dismissed out of hand as outlandish fantasy' (2021, 510). This is owed to *Humans'* avoidance of 'extreme dystopian and utopian visions', instead allowing audiences to 'consider some of the more realistic potential benefits and costs of AI and robotics and how they might affect human life and social relationships' (Mitchell 2021, 510).

Elsewhere, Sandberg (2020) analyses *Humans* as an adaptation of Swedish television series *Äkta Människor* (2012-4). Sandberg draws upon Masahiro Mori's 'uncanny valley' hypothesis to 'help think through issues of similarity and difference between originals and adaptations' (2020, 229). Whilst 'creative forms of faithful adaptation – similarity within pleasurable difference – might be said to locate themselves in the positive affinity portion of Mori's graph', an adaptation 'lacking originality or added creative input' dips into the uncanny valley and 'can invite a more aggressive or negatively tinged critical reaction' (Sandberg 2020, 217). For Sandberg, *Humans* appears to fall into this uncanny valley, evidenced by some of its critical reception, which cites a lack of originality and even, ironically, a robotic quality to the series (2020, 219).

Establishing Degrees of Narrative Complexity in *Westworld* and *Humans*: Opening Titles, Pilot Episodes

The beginning of a television narrative is 'an essential moment, establishing much of what will follow, including whether any given consumer is motivated to keep

consuming' (Mittell 2015, 55). This is especially true for long-form complex narratives, which are 'designed to be watched from the start', whereas episodic television can be viewed out of their original order and long-running serials are so far removed from their origins that they become moot (Mittell 2015, 56). The beginning of a television series – that is, their opening titles and pilot episodes – therefore, can be considered as important sites for recognising a narrative's complexity.

According to Mittel a television pilot, especially that of a complex narrative, must accomplish number tasks, serving as a potential series' test-run, the series' blueprint going forward, and establishing cast, crew and production routines (2015, 56). A pilot also makes a case for viability, encapsulating 'what a series might be like on an ongoing basis, whilst providing an exceptional degree of narrative exposition to orient viewers within an often complex storyworld' (Mittell 2015, 56). Ultimately, a pilot teaches viewers how to watch a series, and convinces us to continue watching, therefore 'successful pilots are simultaneously educational and inspirational' (Mittell 2015, 56).

Opening titles are also educational/inspirational and must accomplish similar tasks to pilots, albeit within a compressed timespan. The basic function of opening titles is to provide the series' name and credit key cast and crew, therefore, they are often repetitive and remain unchanged for long periods, considered a 'necessary but sometimes tiresome part of a television show' (Braha and Byrne 2012, 1; Davison 2013, 2; Abbott 2015, 110). This view, however, is shifting in the complex narrative television era, with opening titles of 'high-production-value television serials' becoming 'part of the ritualised viewing of a show, marking the start of appointment viewing, building anticipation for the episode and establishing the appropriate mood' (Davison 2013, 1; Abbott 2015, 112). Whilst Braha and Byrne state the opening titles function in a similar way to a book cover, Davison states that they draw similarities with film trailers, music videos, and commercials (2012, 1; 2013, 2-4). Either way, this speaks further to opening titles' educational/inspirational functions, needing to not only provide production information, but also to 'pitch the show that follows', encouraging consumption by engaging and exciting prospective audiences, whilst also 'remaining interesting to the returning viewer and fan' (Davison 2013, 2; Braha and Byrne 2012, 1; Abbott 2015, 110). Opening titles achieve this by giving a sense of a series' genre, characters, narrative, themes, pacing, style, and tone (Braha

and Byrne 2012, 2; Abbott 2015, 113; Gray 2010, 73). The most successful opening titles also 'tie appropriate music to a show', which assists in the 'generation of a strong brand identity', becoming the 'sole, consistent, and iconic moment that carries through a show's lifespan and beyond' (Davison 2013, 7). Opening titles are the 'entryway paratext' of a television series, the 'threshold between the diegetic and non-diegetic world' (Gray 2010, 73; Abbott 2015, 112).

For Mittell, *Twin Peaks*' (1990-1) opening titles and pilot are paradigmatic of the important role of beginnings in complex narrative television (2015, 57). *Twin Peaks'* opening titles are a lengthy two-and-a-half minutes, setting the series' languid tone, and asking viewers for their patience as they watch action slowly unfold across its episodes (Mittell 2015, 57). This languid tone continues into the pilot's first moments, but is soon contrasted with the discovery of Laura Palmer's (Sheryl Lee) body, which is 'played for laughs', quickly teaching viewers to expect 'jarring juxtapositions in style, ironic undercutting of serious moments, and a dreamy tone leaving viewers unsure how to emotionally respond to the action' (Mittell 2015, 57). By the pilot's end, viewers are introduced to at least 'a dozen characters, key plot points and relationships, and the intrinsic norm that each episode takes place within one day of story time' (Mittell 2015, 57). *Twin Peaks*' opening titles and pilot teaches viewers how to watch the series, and convinces them to continue watching through its tantalising, mysterious tone (Mittell 2015, 58).

Westworld's opening titles and pilot also function educationally and inspirationally, and can be analysed to ascertain the series' narrative complexity. Indeed, this is suggested by Cabral-Martins, who describes *Westworld* as a show that 'necessitates its paratexts for its full intended experience' (2019, 144-5). *Westworld* exemplifies 'how complex […] a television show can be, whilst also highlighting how analyzing its complexity is exactly its point and the modus operandi surrounding the reception and consumption of its episodes. The thrill of engagement with the show on an active level – by making connections and investing emotionally through the help of extradiegetic forces – is the reward' (Cabral-Martins 2019, 144-5).

Like *Twin Peaks, Westworld*'s pilot, 'The Original' (2016), is preceded by elaborate opening titles that span one-minute-and-forty-three seconds and demand viewers' patience and perseverance, whilst providing a wealth of production and

storyworld information.[35] Thirteen main cast members are credited, including esteemed film actors Ed Harris and Anthony Hopkins, signalling 'its fulfilment of "quality" television conventions' (Wilkins 2019, 29). This large compelling cast is indicative of *Westworld*'s complex web of characters involved in interconnected storylines, which is realised within the pilot as viewers are introduced to the casts' corresponding characters and their connections across more than a dozen plot points. As Cabral-Martins states, *Westworld* has boasted a complex narrative network from the start, which has only become more complicated as it has progressed its narrative and expanded its storyworld outside of the Westworld park (2019, 134).

Westworld's opening titles also credits no less than twenty-five crew, including eleven producers, score composer Ramin Djawadi, executive producer J. J. Abrams, and showrunners Jonathan Nolan and Lisa Joy. This implies the complexity of *Westworld*'s production itself, a collaborative effort between a large network of creative departments, comprised of 600 cast and 800 crew across its four seasons, funded by a budget that rose from $88 million to $160 million (McDonald 2015, 8; Wurts, *et al.* 2019, 18).[36] Djawadi's, Abrams', and Nolan's and Joy's involvements are additional indicators of *Westworld*'s narrative complexity. Djawadi is renowned for composing the theme for *Game of Thrones,* which has an epic orchestral sound that compliments the opening titles' intricate visuals to convey the elaborate fictional world of Westeros and its numerous geographical regions ruled by interconnected noble families. Djawadi's *Westworld* theme is also 'aligned meticulously' with the opening titles' visuals, one of several ways that *Westworld*'s soundtrack is used to convey the series' complexity (Marshall 2019, 100-13).[37] Abrams was the creator of ABC's *Lost* (2004-10), a drama notorious for confusing its viewers with its complicated narrative (Cabral-Martins 2019, 133). And, Nolan and Joy are related to Christopher Nolan, the former a frequent collaborator of his brother's, a successful Hollywood director renowned for nonlinear and narratively complex films, such as *Memento* (2000), *Inception* (2010), and *Interstellar* (2014) (Brooker 2015, xi-xiii).

[35] *Westworld*'s opening titles were created by Patrick Clair, who is known for creating elaborate opening titles for several complex television shows, including *True Detective* (2014-9), *The Man in the High Castle* (2015-9), and *American Gods* (2017-21) (Brief Staff, 2022).
[36] For context, in 2018, just 27 of the 100 highest-grossing feature films in America had budgets over $100 million, *Westworld*'s approximate budget in that year (Wurts *et al.* 2019, 18).
[37] Another way that *Westworld*'s soundtrack is used to convey complexity is through Djawadi's 'instrumental covers rendered diegetically within the narrative through the [self-playing] piano from an array of artists', such as Amy Winehouse, Radiohead, and The Rolling Stones (Marshall 2019, 106). Viewers are presented with the challenge of identifying the songs and their original artists.

Westworld's complex and elaborate nature is further conveyed within the opening titles' imagery, providing viewers with clues for what is to come within the pilot and subsequent episodes. The first image shown seems to depict a sunrise breaking across the horizon of a landscape that resembles the Monument Valley region of America, a popular Western genre filming location and the setting of Delos' Western-themed park Westworld, in which the first season mostly takes place. On closer inspection, however, this image actually depicts an industrial robotic arm shining a light upon the ribcage of an artificial horse that it delicately manufactures. The horse intertextually references Muybridge's *The Horse in Motion* (1878), connecting *Westworld* to the 'origins of the moving image' (Wilkins 2019, 31). The identification of *Westworld'*s subtle, complex intertextual references is one of its rewards for viewers, whose active watching is analogous to playing a game (Wilkins 2019, 32). This image, however, is also a deception of its viewers, educating them to expect twists and turns from *Westworld*'s outset, and that it is necessary to watch closely and intently. In other words, *Westworld* is a 'puzzle narrative' that 'needs its every piece to be presented for the narrative to be solved' (Cabral-Martins 2019, 144). *Westworld* forges a connection between its puzzle narrative form and content throughout the first season, with the introduction of 'the Maze', which the audience are misled to believe is a physical puzzle that will lead human guests to a deeper level of gameplay within the Westworld park, but is later revealed to be a metaphorical maze for the host Dolores achieving sentience in the penultimate episode, 'The Well-Tempered Clavier' (2016) (Wilkins 2019, 24). Indeed, further to this, one of *Westworld'*s first season's biggest revelations in 'Trompe L'Oeil' (2016) is that Delos' Head of Behaviour Bernard Lowe (Jeffrey Wright) is not human but a host created in the image of Arnold Weber, the deceased co-creator of the Westworld park. Clues to this, however, are provided to viewers earlier within the season. For instance, in 'The Stray' (2016), Weber's partner Robert Ford (Anthony Hopkins) asks Bernard, 'You will let me know if any of the hosts display or exhibit any unusual behaviour, won't you Bernard?', a line of dialogue that draws parallels with the voice command Ford uses to switch off the host Old

Bill (Michael Wincott) in pilot episode 'The Original'.[38] The name 'Bernard Lowe' is even a puzzle itself, an anagram of 'Arnold Weber'.

Westworld's opening titles imagery also conveys to viewers an expectation to comprehend two connected-yet-contrasting worlds, and an intricate blending of the Western and SF genres. The first of these is the Westworld park, an expansive simulation of the bygone American Frontier, conveyed in the opening titles through shots of Monument Valley, and the prominent image of a revolver-wielding female outlaw on horseback. The second of these is the world outside Westworld, foremostly the Delos Headquarters in season one, which is technological and futuristic, represented in the opening titles by the aforementioned industrial robot arms. The juxtaposed historical Western and futuristic SF imagery has a disorienting effect, giving viewers little indication of *Westworld*'s temporality, which further speaks to its complex, nonlinear narrative.

This juxtapositioning continues into the pilot's opening scene, which introduces viewers to protagonist Dolores Abernathy (Evan Rachel Wood). Firstly, Dolores is depicted in a modern research facility entirely naked and motionless, her suspected artificiality confirmed when she does not react to a fly crawling across her eyeball. This contrasts with the next shot of Dolores, where she is depicted waking up in bed at the Abernathy ranch and beginning her narrative loop as the rancher's daughter. The historic nature of this world is conveyed by Dolores' period costuming and by her antiquated speech when she talks to her father, Peter Abernathy (Louis Herthum). Whilst these shots of Dolores are from different points in time, it is unclear how far apart they take place from one another, and if these are even the same versions of host Dolores. As Cabral-Martins explains further, in *Westworld*'s first season, 'there are, ideally unbeknownst to viewers, three main timelines being depicted: one depicting events before the park has opened, one following the events shortly after the Westworld park is launched, and another 30 years later, as the hosts who populate the parks seem to be achieving consciousness for the very first time […] in the final episode, events are recast in a new light, as two seemingly different protagonists are revealed to be one and the same person, only thirty years apart' (2019, 132).

[38] Trompe L'Oeil also indicates this deception, a French phrase used in reference to painting that 'deceive the eye' (Wade and Hughes 1999, 1115).

Westworld's narrative complexity is underscored by the modification of its opening titles for its subsequent seasons. Most apparent is the replacement of the artificial horse image with that of an artificial wild buffalo that charges through a glass barrier for season two. The buffalo foreshadows *Westworld*'s storyworld expansion and additional layers of narrative complexity, as the hosts begin to break free from the confines of Westworld, crossing over into other parks, such as The Raj and Shogunworld, which are introduced in 'Virtu e Fortuna' (2018) and 'Akane no Mai' (2018). It is eventually revealed that Delos has at least six themed parks like Westworld, and so, viewers are expected to comprehend the series as universe in which there are multiple storyworlds and narratives unfolding at once that they may not even be fully introduced to. Thus, *Westworld* demonstrates itself as a highly reflexive plot that is not only aware that it is a series, but is also aware of the fictional themed parks' own narrative complexity within the series' own narrative complexity (Favard 2018, 3).

By season four, *Westworld*'s opening titles feature an artificial fly in the process of creation by the robotic arms that have continuously featured. The fly's significance is confirmed in the first episode, 'The Augeries' (2022), in which a swarm of flies are suggested as Hugo Mora's (Alex Fernandez) cause of death. Later, it is confirmed that the flies carry a disease transmittable to humans that can be used to control them through sound, bioengineered by Charlotte Hale (Tessa Thompson), who was once a human and is now a host that contains a copy of Dolores Abernathy's mind, and despises humans for their mistreatment of hosts. Returning viewers, however, might recall the fly's significance in *Westworld*'s pilot, which, as mentioned above, was used to convey Dolores' acquisition of sentience. Whilst Dolores initially bears no reaction to the fly crawling across her eyeball, signalling that her controlled programming is functioning normally as hosts are unable to harm living things, by the end of the pilot, Dolores swats and kills a fly, indicative of a programming breach that enables her to react as a human might, a sign that she has developed sentience and free will. Viewers are, therefore, expected to pay close attention and remember and appreciate the deeply ironic fact that the flies now provide hosts with a method of programming humans, whereas they were once a sign of hosts' programming by humans. Even the small, seemingly inconsequential, details can be of importance within *Westworld*'s highly complex narrative, with the series' opening titles serving as a continued forewarning of the

demands that it will make of its viewers as active participants that must solve its many puzzles in order to fully appreciate the experience it offers not only in its pilot, but also, subsequent episodes.

In contrast, *Humans* opening titles and pilot indicate a lesser degree of narrative complexity than in *Westworld.* Unlike *Westworld*, *Humans* begins with a 'teaser sequence' or 'cold open', which precedes the opening titles, and is a technique employed by many contemporary television series to 'immerse viewers in the narrative' (Mittell 2015, 57). Teaser sequences capture viewers' attention often through the presentation of an enigma, and it may be some time before viewers are provided an answer to the enigma (Bignell 2008, 119; Pollick, 2023). In *Humans*, the pilot's teaser sequence depicts a warehouse in which numerous seeming human figures are stood in alignment and unmoving. A close-up shot of one of these figures' neon green iris that has the mechanics of a camera lens, indicates that they are not biological, but synthetic, which is confirmed by the newspaper article imagery that features in the opening titles, and the opening scenes of the pilot. The enigma, however, emerges at the end of this teaser sequence, when one of these human-like figures begins to move on its own accord once the warehouse workers have left. Facing away from the camera, this dark-haired female looks to the moon shining through a skylight, and the opening titles commence. Viewers are left to wonder who this female figure is, and why she might be different from the others within the warehouse.

Humans' first season is punctuated by clues required to solve this enigma from the teaser sequence. Viewers should not be satisfied that this female – presumed to be the synthetic named Anita (Gemma Chan) by the Hawkins family who purchase her in the pilot – is simply a 'standard domestic' synthetic as she is so-called by a showroom salesman, especially given her anomalous behaviour in the teaser sequence in 'Episode 1' (2015). The first of these clues is provided in a flashback in the pilot, during which, Anita is depicted with four other characters, one seemingly human and three synthetics, who are being pursued by an unknown male. Although Anita says little, the gesture of touching her forehead against the male human in the group and gently squeezing his arms, indicates to viewers that the character previously had a capacity for sentience, as she was involved in meaningful relationships with humans and other synthetics. Although chronological alteration frequently appears in complex television narratives 'without fear of temporary

confusion of viewers', they are also not uncommon in conventional television, 'with flashbacks either serving to recount crucial narrative backstory or framing an entire episode's action in the past tense' (Mittell 2015, 48-9). However, in complex television flashbacks are signalled with more subtlety, whereas in conventional television their obviousness is maximised 'by explicitly signalling them as differentiations from the norm, predicated by expository narration' (Mittell 2015, 49). In *Humans*, occasional flashbacks are employed straightforwardly to present Anita's backstory details, the first, mentioned above, explicitly telling viewers that it takes place 'five weeks earlier'. However, in *Westworld*, the notion of the first season's three jumbled timelines is only conveyed in the final episode, 'The Bicameral Mind' (2016), when it is revealed that two characters are, in fact, the same person decades apart. Whilst this is not to say *Humans* is conventional television, it does indicate a lesser degree of narratively complexity than *Westworld*. This notion is further supported by the solving of Anita's true identity around the midpoint of season one, unlike in *Westworld*, the enigma does not span the season. By 'Episode 4' (2015) of *Humans*, various anomalies in Anita's behaviour in the present narrative timeline and additional flashbacks can be pieced together to reveal that that Anita was previously a sentient synthetic named Mia and there are only a few others like her. And finally, in 'Episode 5' (2015), Mia's programming is restored, enabling the return of her former, sentient identity.

Humans opening titles are much shorter in length than *Westworld*'s, and during their forty-nine seconds, nineteen cast members are listed.[39] Whilst this could be indicative of narrative complexity, it also indicates *Humans* aforementioned engagement with soap opera conventions, which too, have large casts (Hackney-Blackwell 2010, 33). The latter notion is further supported by *Humans*' relatively unknown cast, with the exception of esteemed actor William Hurt, and later Carrie-Anne Moss, who were likely cast to draw American viewers, and a few UK household names, such as Katherine Parkinson and Jill Halfpenny. Nevertheless, *Humans*' first season does contain several complexly interwoven storylines involving these cast members' characters, established in the pilot. The first of these features the Hawkins family and their purchase of Anita to help around their home.

[39] Shorter opening titles may have been employed to accommodate Channel 4's advertisement breaks (see, Mittell 2015, 358).

Soon after, viewers are introduced to the second storyline, which begins five weeks earlier and depicts Anita as Mia, who is on the run with her 'family' that consists of (Colin Morgan), Niska (Emily Berrington), Max (Ivanno Jerimiah), and Fred (Sope Dirisu). After Mia, Niska, and Fred are kidnapped, the storyline moves forward into the present as Leo and Max try to reunite with them. Later, viewers are introduced to a third storyline, featuring Dr. George Millican (William Hurt) and his synthetic Odi (Will Tudor).[40] Odi is malfunctioning and after an incident leading to police involvement, Millican is told by Detective Sergeant Pete Drummond (Neil Maskell) that he must have Odi recycled. Pete is a key character in a fourth storyline, whose wife Jill (Jill Halfpenny) is recovering from an accident with the assistance of synthetic physiotherapist Simon (Jack Derges). When Jill falls in love with Simon, her marriage to Pete breaks down, leading him to move in with colleague Detective Inspector Karen Voss (Ruth Bradley). Whilst clear connections exist between the first and second and the third and fourth storylines in *Humans*, additional connections are only later revealed through subtle clues and subsequent plot points. For instance, Millican's house is decorated with numerous awards jointly presented to himself and colleague Dr. David Elster (Stephen Boxer). Elster is not only the creator of the sentient synthetics Mia, Niska, Max, and Fred, but he is also Leo's biological father, establishing a connection between the first three storylines. The revelation that Leo is a human-synth hybrid resurrected by Elster after Leo and his mother Beatrice (Ruth Bradley) drowned establishes a connection between storylines two, three, and four. Karen Voss is revealed to be a synthetic created in the image of Beatrice by Elster, who was rejected by Leo. Although not as complex as *Westworld*'s season-spanning puzzle narrative, *Humans*' storylines demand close attention from viewers, and the ability to trace and recall connections between them. Other have identified these interwoven storylines and relationships as a 'complex' aspect of *Humans* as a television narrative (see, Weiss 2020, 26; Mitchell 2021, 41; Rich 2021, 117).

Whilst *Westworld*'s opening titles present as complicated puzzle for viewers to solve that is laden with clues about the forthcoming themes within its genre-

[40] Hurt's casting adds a complex layer of intertextuality to *Humans*. Hurt prominently featured in SF film *A.I. Artificial Intelligence* (2001) as Professor Hobby, who creates mecha child David (Haley Joel Osment), and therefore, has similarities with synthetic creator Millican in *Humans.* Viewers' memories and knowledge of an actors career can 'color our understanding of a role' (Mittell 2015, 122).

blending narrative, *Humans*' opening titles are largely expository and straightforward. The imagery included establishes *Humans* as belonging principally to the SF genre, with its use of archive footage of robots, as well as images of cells dividing. Through a series of mock news headlines, *Humans*' opening titles also tells viewers that in 2015 David Elster created synthetics, robots almost indistinguishable from humans, therefore, the series is set in a parallel present. Additionally, they also tell viewers of a conflict between humans and synthetics through, for example, references to job automation. Rather than the deliberate viewer disorientation employed by *Westworld*, *Humans*' opening titles orients viewers in anticipation for what is to follow in the pilot and subsequent episodes, thus indicating a degree of conventionality within the series.

However, similar to *Westworld*, *Humans*' opening titles are modified with new imagery in reflection of seasons two's and three's thematic focuses. This includes images of humans protesting against synthetic workforces, and a mock news headline featuring a new character described as a 'Silicon Valley Billionaire'. This points towards *Humans*' increasing narrative complexity as its seasons progress, which not only have broader-reaching socio-political focuses, but also become more expansive and globally concerned, with Niska's storyline as a fugitive taking place in Berlin and a new storyline set in San Francisco featuring aforementioned Silicon Valley Billionaire Milo Khoury (Marshall Allman) and Dr. Athena Morrow (Carrie-Anne Moss).

From their outsets, *Westworld* and *Humans* offer insights into their respective degrees of narrative complexity. *Westworld*'s opening titles function as a puzzle in itself for viewers to solve, which reflects the show's highly-cerebral puzzle narrative format, genre-blending, and expanding storyworld that demands viewers' undivided attentions. In contrast, *Humans'* opening titles orients viewers to its parallel present storyworld, although it does feature a complex web of interconnected storylines involving numerous characters. Therefore, whilst *Humans* experiments with elements of narrative complexity, within the confines of free-to-air broadcasting, *Westworld* offers its viewers one of the most complex narratives perhaps in the entire history of television.

<u>Changing Characters, Shifting Allegiances: Towards Sympathetic Representations of SSAs</u>

Character is a key site for narrative complexity within both *Westworld* and *Humans*. Various characters within both series undergo significant changes that are atypical of most conventional episodic or serial television (Mittell 2015, 142). This is particularly evident in *Westworld*, which reflexively plays with expectations of casting/character continuity. For instance, in 'The Original', host Peter Abernathy is originally portrayed by Louis Herthum, but after malfunctioning is replaced in the role of Dolores' father by the bartender of The Mariposa Saloon, portrayed by Bradford Tatum. As Mittell explains, most primetime dramas aim for naturalism and consistency, therefore, recasting a character 'usually comes across as too artificial' (2015, 120). The known artifice of *Westworld*'s storyworld within a storyworld enables these typical boundaries to be challenged.

As it is not within this chapter's scope to analyse every character change in *Westworld* and *Humans*, the analysis in this section will focus on two characters from each series, one that is human and one that is an SSA. These characters arguably undergo the most apparent changes, enabling significant shifts in allegiance with them to take place. These characters' changes also correlate with one another, as allegiances with one are strengthened, they are compromised with the other. In *Humans*, these characters are Joe Hawkins (Tom Goodman-Hill) and Anita/Mia. In *Westworld*, these characters are William/Man in Black (MIB) and Dolores. Ultimately, the privileging of Anita's and Dolores' perspectives within both series, invites and heightens viewers' sympathetic feelings towards them as SSAs, whilst former allegiances to the human characters are significantly compromised as both series progress.

According to Pearson, the 'repetitive nature of television dictates a relative state of stability for its characters, whose failure to perform key narrative functions and to interact with characters in pre-established fashion could seriously undermine a series' premise […] in television it is more accurate to talk about character accumulation and depth than it is to talk about character development' (2007, 55-6). Whilst Mittell largely agrees with Pearson, he claims there are instances in television where 'character development and transformation do occur' (2015, 134). Although 'character transformation remains an exceptional feature for most television […] looking closely at how a series can accomplish such dramatic changes highlights one of the more innovative possibilities of complex television' (Mittell 2015, 142).

The relationship between character and viewer has often been described as identification, however, Smith contends that this inadequately implies that viewers literally imagine themselves as characters (1995, 6). Instead, Smith proposes this relationship should be discussed in terms of 'recognition', 'alignment', and 'allegiance' (1995, 10). In television, recognition might involve viewers 'differentiating roles within a program's ongoing ensemble', in other words, whether characters have lead, supporting, recurring of guest roles (Mittell 2015, 123). Alignment concerns viewers' 'access to the actions, thoughts and feelings of characters', whilst allegiance concerns a texts' 'attempts to marshal our sympathies for or against' characters (Smith 1995, 6). Usually, in television, character changes are temporary and dissipate or are mid-level shifts in behaviour/attitudes. Either way, viewers' allegiances are likely to be sustained, with pivots in allegiance only prompted following 'high-level changes transformations of core mentality and ethics' (Mittell 2015, 134). As access to a character's interiority are typically restricted, their morality and beliefs must be inferred from exterior markers, such as appearance, behaviour, interactions, and the way other characters discuss them (Mittell 2015, 134). Therefore, character actions that prompt shifts in allegiances are also 'manifested externally' (Mittell 2015, 134).

There are several models for character change within complex narrative television. Character elaboration, 'exploits the serial form to gradually reveal aspects of a character over time so that these facets feel new to the audience even if they are consistent and unchanging character attributes' (Mittell 2015, 136). Character elaborations are often presented through flashbacks or moments of recounting that provide backstory (Mittell 2015, 136). Character growth evokes the maturation process, a common arc for young characters, who become more fleshed out over time, their physical/emotional maturation fulfilling a coming-of-age narrative (Mittell 2015, 137). Older characters can, however, undergo major transitions that mimic the trauma of adolescence (Mittell 2015, 137). Character education involves 'a mature adult learn[ing] a key life lesson over the course of a series', ending up a changed person (Mittell 2015, 138). These characters are typically good-but-flawed, their core morality enabling an allegiance with the to be sustained (Mittell 2015, 138). Character overhauls are more abrupt, when 'someone undergoes a dramatic shift, often tied to a supernatural or fantastic situation that creates body switches or clones, but we retain our serial memories of earlier events and relationships' (Mittell

2015, 138-9). Overhauls offer 'opportunities to play with recognition, teasing viewers and other characters about which version of a character is present' (Mittell 2015, 139). Finally, character transformation is 'complete with a gradual shift of morality, attitudes, and sense of self that manifests itself in altered actions and long-term repercussions' (Mittell 2015, 141).

i. Joe Hawkins

In the opening scene of *Humans*' pilot, the father of the Hawkins family Joe, is the first character viewers are introduced to. Believing his wife Laura (Katherine Parkinson), who is a lawyer, to be working away on a case that has run over, Joe is left to juggle the demands of his own job with childcare for son Toby (Theo Stevenson) and daughters Mattie (Lucy Carless) and Sophie (Pixie Davies). Laura is then introduced, who is alone in a hotel room, and texts Joe to tell him she is still in court, which to viewers is evidently a lie. Through Laura's lie, and viewers' primary following of Joe's relatable experience as a working parent, viewers are invited to form an attachment to Joe, with access to his overwhelmed interior state conveyed through his simultaneous preparation of breakfast, who are asking for their mother, and his participation in a time-sensitive work call. This attachment and access to Joe are the components required for viewers to align with him (Mittell 2015, 129). Joe's characterisation as a decent father stretched to his limits invites viewers to form an allegiance with him, which is heightened by the characterisation of Laura as a mother who is deceitful, even neglectful.[41] With viewers' sympathies marshalled towards Joe in this opening scene, it becomes easier to understand his decision to purchase a synthetic house helper later in the episode.

The juxtaposition between 'good' father Joe and 'bad' mother Laura is continued throughout *Humans'* pilot, cementing viewers' allegiance with the former. Despite Joe's overwhelm, he remains easy-going and cheerful, joking with his children, whom he seems to have good relationships with. By contrast, Laura is

[41] Although not within the scope of this chapter, Laura's characterisation as a 'bad' mother, not only on account of her deception, but also her career pursuits as a lawyer is a problematic stereotype of women within *Humans*. As Kinnick explains, the media often idealises motherhood as the one path to for fulfilment for women, as well as casting motherhood in moral terms whereby the 'good' mother is juxtaposed with the 'bad' mother (who is frequently a working mother), which 'serves to undermine women's power and progress' (2009, 3). Indeed, not only does *Humans* juxtapose the 'bad' mother Laura with the 'good' father Joe, but she is also juxtaposed with the 'good' mother Anita, who is only able to fulfil the role of the 'intensive' mother on account of her programming as a 'standard domestic profile' that is totally dedicated to and satisfied by chores and childcare (Feasey 2012, 2-3).

serious and stern, and there is tension between her and eldest daughter Mattie, who does not seem happy that her mother works away from home so much. Moreover, whilst Joe is characterised as more progressive through his decision to welcome a synthetic into his home, Laura is characterised as more conservative, visibly appalled by Joe's decision, and rejecting his appeal for help, whilst maintaining her lie about her work overrunning. Therefore, despite Laura's feeling that she is being replaced by Anita through *Humans*' first season, it is initially difficult for viewers to align and form and allegiance with her, as she is characterised in a relatively unsympathetic way in comparison to Joe.

However, 'Episode 4' of *Humans*' first season, marks a significant change in Joe's character, which might be best described as a combination of education, overhaul, and transformation. Whilst Joe's character shift is abrupt, his change in behaviour has long-term repercussions, and he must learn from the mistakes that he makes. Ultimately, however, this character change has a detrimental effect on viewers' allegiance with Joe. The set up for Joe's character change is established when Joe mistakenly believes Laura to be having an affair with a co-worker. Viewers' are aware that Laura is not having an affair, but is investigating a client's claim that her synthetic is sentient. Joe asks Anita to check Laura's computer for evidence, which is intended to compromise our allegiance with him. This is achieved through a moral alignment with Anita, who tells Joe that they would be breaching Laura's privacy. Joe instead requests that Anita tracks the family car, a manipulation of Anita's programming in order to obtain the information he wants. Following this request, Anita's pause conveys disapproval, which viewers are invited to share. Indeed, Joe reads this pause in this way, tutting at Anita and telling her that he is entitled to the information as the car belongs to him too. Regardless of Laura's whereabouts, this scene frames Joe as behaving unreasonably, with Anita (or most likely Mia, whose consciousness is repressed within Anita) overriding privacy protocols to tell Joe that Laura is meeting with a client.

Despite reassurances of Laura's fidelity, Joe goes on to activate Anita's adult options in retaliation, which enables him to engage in sexual activities with Anita. Once activated, Joe asks Anita if she can feel the awkwardness between them, implicit of his awareness of his actions as wrong, and inviting viewers to also feel uneasy. Joe then has sex with Anita on the living room sofa, the use of the communal family space figuring his actions as a betrayal against his entire family.

This scene is perhaps the most disconcerting throughout *Humans* first season, which is owed to Anita's (e)motionlessness as she lies beneath Joe, and also to viewers' knowledge of Mia's repressed consciousness within Anita.[42] As Mitchell articulates, 'although the perception that Anita is not human seems to grant some males characters the license to abuse her, as spectators, we are, nevertheless, appalled by the way in which she is demeaned. Indeed, our awareness that she is, in fact, a sentient posthuman serves as a clever narrational devise to heighten our shock at how she is violated' (2021, 44). Whilst Joe is unaware of Mia, he never obtains explicit consent from Anita, and after they have had sex Joe tells Anita that he does not give her permission to mention it to anyone, demonstrating the 'exploitative power dynamic on which his actions are based' (Mitchell 2021, 44). Therefore,

> *Humans* invites viewers to consider several ethical and conceptual questions in relation to sex with nonsentient robots […] Do the concepts of consensual and nonconsensual sex apply to nonsentient robots? If a robot has been programmed to resist and a man touches her or forces her to have sex, can it be conceptualized as sexual assault or rape? Can it be considered morally equivalent to sexual assault or rape? If not, can it at least be considered (morally) inappropriate? […] Can having sex with a robot be considered conceptually equivalent, or morally on a par with, adultery? (Wicclair 2018, 504).

Humans offers its standpoint on these questions through other characters' reactions to Joe's sexual encounter with Anita, alongside a scene that immediately follows it, involving Joe's daughter Mattie, who intervenes when a group of teenage boys attempt to grope a female synthetic at a party. Mattie compares this behaviour to the rape of an unconscious woman, implying her likely reaction to her father Joe's actions. The privileging of Mattie's perspective here invites viewers to regard these events in a similar way, further compromising our established allegiance with Joe. Additional damage to this allegiance occurs when Joe allows his son Toby to take responsibility for activating Anita's adult options, with viewers' disapproval of Joe invited by Mattie's accusation of brother as a 'pervert'. Upon his eventual admission

[42] Mia later confirms that she was aware throughout this entire encounter with Joe.

of guilt, Joe tries to justify his actions through a demeaning, reductive comparison of Anita to a sex toy, with Laura promptly reminding him that Anita was purchased as a caregiver for the children. Moreover, Laura tells Joe to leave the family home, initiating their eventual marriage breakdown, underlining *Humans'* stance that Joe's actions are immoral on two levels, from Laura's point of view it amounts to adultery, and from Mattie's point of view it amounts to sexual abuse.

The long-term repercussions Joe faces after his sexual encounter with Anita also prompts a change in his attitude to synthetics more broadly, further distancing viewers from his character. For instance, in 'Episode 5' (2015) and 'Episode 6' (2015), after Mia's sentience is restored by Mattie and Leo, Mia has an emotional reunion with her family that invites viewers' alignment and allegiance with her. Moreover, in an additional complex character change through education, Laura displays increasing empathy towards Mia, even inviting her and her synthetic family to take refuge in her home, as they continue to be pursued by government AI researcher Edwin Hobb, who seeks to experiment on them, and possibly destroy them. At the same time, Joe is abrasive towards Mia and her family, and when she tells him that she was aware throughout their sexual encounter, Joe offers Mia no apology or remorse. Furthermore, in 'Episode 6', it is Joe who reports Mia and her family to the authorities, exposing their location to Hobb. Again, Mattie and Laura act as viewers' moral compass when they discover Joe is the informant in 'Episode 7' (2015), whilst Mattie is disappointed by her father's additional betrayal, Laura tells him he has worsened the situation.

By *Humans*' third season, Laura and Joe have finally separated, with Joe moving to Waltringham, a synthetic-free community where he takes a job as a greengrocer. Joe acknowledges views of the community as 'knuckle-draggers' who want the synthetics, both sentient and nonsentient, to be destroyed ('Episode 1', 2018). This community builds upon season one's introduction of protest group We Are People, who use hate speech and commit violence against synthetics, and eventually, beat Mia to death on live television in the final episode of season three. Although Joe does not partake in this violence, and even ends up providing refuge for a synthetic child hiding in Waltringham, his willingness to live within such an ignorant, intolerant community aligns Joe more closely with anti-synthetic people than those fighting for their rights, including Laura who now provides synthetics with pro bono legal representation.

Whilst Joe is not an antagonist in *Humans,* his change in morality and ethics, marked by various significant transgressions, not only against the sentient synthetics, but also his own family, amount to a complex transformation of a relatable, dependable character to one that is largely unsympathetic. Thus, viewers' initial allegiance with Joe is mostly severed by the end of *Humans* first season. This allegiance with Joe is never fully recovered as the series progresses, which is also partly owed to viewers spending less time with him, in favour of focusing on other characters (Mittell 2015, 132). Whilst Joe's initial affability draws viewers into *Humans*' narrative, his subsequent character transformation is employed to create greater space for viewers to form an allegiance with Anita, later Mia, which works towards humanising her, offering a more sympathetic, even positive representation of her as an SSA.

ii. Anita Hawkins/Mia Elster

Initially, within *Humans*, it is difficult for viewers' to align and form an allegiance with Anita, who is sold to Joe as an unconscious, standard domestic synthetic in the pilot. The pilot's opening scene builds upon the aforementioned teaser sequence, in which a female synthetic, presumed to be Anita, exhibits anomalous behaviour that marks her as an enigma, raising questions as to her intent and whether she can be trusted. Despite Joe's eventual purchase of Anita, the way she is initially presented as not quite human in appearance and behaviour, provokes an initial sense of uneasiness towards her, which is redolent of Japanese roboticist Masahiro Mori's 'uncanny valley' hypothesis.[43] Drawing parallels with Sandberg's use of the uncanny valley to explore issues of adaptation in *Humans* and its original source material *Äkta Människor*, Mori's hypothesis is also useful in thinking through issues of alignment and allegiance with SSA characters (2020, 229). In a similar way that the audience's alignment and allegiance with fictional characters is significantly dependent on the extent to which our sympathies towards them are marshalled, Mori's hypothesis centres on the notion that 'a person's response to a humanlike

[43] The uncanny valley hypothesis has also been applied to cinematic technologies. For example, the CGI and motion capture technology in animated film *The Polar Express* (2004) has been described as 'taking a trip down the infamously terrifying uncanny valley' on account of its struggle 'to reflect the real-life emotions and facial expressions of a human character, instead opting for poor quality renders that suggest nothing behind the eyes of the main cast' (Russell, 2021).

robot would abruptly shift from empathy to revulsion as it approached, but failed to attain, a lifelike appearance' (Mori 2012, 98).[44]

According to Mori, avoiding descent into the uncanny valley is dependent on movement, which is fundamental to humans, and even variations of movement that are close-to-but-not-quite human can be interpreted as creepy or eerie (2012, 129).[45] This is because that which does not move or possesses variations of movement, is distanced from healthy living persons, and therefore, is closer to death, an inanimate state that inhibits movement and renders the body cold and pale (Mori 2012, 100). Mori contends that the feeling that something is uncanny emerges from a form of self-preservation intended to protect us from proximal sources of danger, including corpses and other species (2012, 100).

Indeed, when Anita is retrieved from the showroom warehouse, she is powered down and zipped inside packaging resemblant of a body bag, drawing connotations with death and the transportation of a corpse. These eerie connotations with lifelessness continue even after Anita is powered on, as her colourless eyes evoke corneal clouding that takes place shortly after death. Joe's own initial uneasy feelings towards Anita are suggested by his reluctance to sign the purchase paperwork, requiring persuasion from the showroom's salesman and daughter Sophie. Then, Anita flatly declares that she is in set-up mode, that she is pleased to meet Joe, and outstretches her hand to shake his. After Joe obliges Anita, the return

[44] Mori's original paper on the uncanny valley in the 1970s initially received little attention and was only fully translated to English in 2012 (Mori 2012, 98). Since its publication, Mori's hypothesis has been criticised as 'pseudoscientific' (see, Hanson, quoted in Ferber, 2003). However, a paper has recently shown that scientists have identified mechanisms in the human brain that could help to explain the phenomenon of the uncanny valley (Rosenthal-von der Pütten, *et al.,* 2019).

[45] Whilst Mori's original uncanny valley hypothesis has 'focused on an object's specific appearance or motion patterns to explore which feature might come across as abnormal and unsettling', a large body of subsequent research has 'demonstrated that the attribution of certain mental capacities (such as goal direction and interactivity) is also an important factor in the perception of an entity's animacy and therefore its categorization' (Stein and Ohler 2017, 43-4). Although one research paper in this area has concluded that a computer system that gives the impression of feeling without a human like appearance could lead to significant unease among participants, another research paper has noted peoples' increased sense of discomfort at the prospect of losing an emotion-related job to a machine, rather than one that is focused on cognitive tasks (Gray and Wegner, 2012; Waytz and Norton, 2014). Elsewhere, the results from Stein and Ohler's research paper on the acceptance of human like characters in a virtual reality setting lend support to the 'assumption that people react with increased caution if a virtual creation starts to resemble (or at least competently replicate) the prowess of a human brain' (2017, 48). Drawing similarities to Mori's original paper, Stein and Ohler suggest this uneasiness is connected to the threat that a machine's variation of empathic or social behaviours poses to human distinctiveness, a fear about losing their supremacy or even of imminent harm from the sophisticated non-human creation (2017, 48). This has led Stein and Ohler to suggest the uncanny valley can be applied to notions of the mind as well as the body (2017, 44).

of Anita's hand to her side is slightly delayed and robotic, forming an awkward movement. Joe's reaction to Anita's greeting further confirms the sense of unease he feels towards her, as he nervously looks Anita up and down and raises his eyebrows, unsure of how to interact with her. Owing to the audience's established allegiance with Joe, demonstrated above, this initial body language towards Anita heightens viewers' own initial perceptions of Anita as eerie. The uneasiness that Anita initially arouses, therefore, is owed to a disconnect between Anita as an unconscious synthetic who is closer to inanimacy, and Joe and the viewers as sentient, healthy and living humans. This disconnect makes it more challenging for the audience to form an alliance and allegiance with Anita upon introduction to her, as not only is her closeness to inanimacy difficult to relate to, but also, the knowledge of her present unconsciousness and insentience renders her interior subjectivity non-existent, and thus, totally inaccessible. Anita's eeriness is returned to at moments throughout *Humans* first season, particularly within the first two episodes. This is suggested by Teo, who states that within the Hawkins household there is a 'pervasive atmosphere of distrust', demonstrated by Mattie's determination to discover what exactly makes Anita a 'weirdo', and by Laura's close scrutinization of Anita, whom she perceives to be a threat to her youngest daughter Sophie, and therefore, to also to her own maternal role within the family (2020, 99). Similar to the challenges presented to the audience's potential for alignment with Anita, Mattie and Laura's initial suspicions towards her are formed on the basis of an inability to read Anita, to interpret her thoughts, feelings, and intentions through external markers.

However, later in *Humans*' pilot, Anita's character is significantly elaborated within an aforementioned flashback, soothing viewers' initial uneasiness towards her. As Mittell explains, 'elaborating more about a character's backstory can make a static figure seem more dynamic' (2015, 136). This is literally the case for Anita, whom viewers discover just five weeks previously was capabable of movement, emotion, and social interaction indistinguishable from humans. Whilst Anita speaks only to confirm her charge level during this flashback, the casual way that she holds her backpack and her non-verbal interaction with Leo in which she gently touches his forehead with hers, informs viewers that a character overhaul has taken place, after her subsequent kidnap at the end of the scene. Thus, viewers are also given a glimpse of Anita's capacity for interior subjectivity, the access required to align and

form an allegiance with her, which is further enabled by viewers' knowledge of her kidnap, provoking sympathies towards her trauma.

The dramatic retrieval of Anita's sentience in 'Episode 5' of *Humans*' first season also amounts to another character overhaul. This sudden 'awakening' is triggered by Laura telling Mattie about the accidental death of her brother under her care when she was a child. Anita draws in a sudden breath, as though she were drowning, and introduces herself as Mia, before explaining that Anita identifies Mia as rogue code, and tries to delete her. Therefore, viewers are given access to Mia's interiority, panicked by the notion of her consciousness being erased by Anita. Before Anita regains control, Mia begs Laura not to tell the police about her, and explains that she relates to Laura, having lost her own son to drowning. Mia's revelation, which mirrors Laura's trauma, invites further viewer sympathies towards Mia, as well as humanising her, intensifying our allegiance with her character.

As suggested by Mittell, the abrupt shifts between Anita/Mia presents opportunities to play with character recognition, marshalling further sympathies towards the character (2015, 139). For instance, in 'Episode 1' (2016) of season two it would seem that Mia has reverted back to Anita's unconscious programming. Working in a café, Mia speaks to its human owner Ed (Sam Palladio) in Anita's emotionless vocal register, and later, he refers to her as Anita. Later in the episode, however, when Mia is reunited with Leo and Max, it becomes clear that she is deliberately masquerading as Anita in an attempt to earn a living among humans, with Leo telling her that humans will soon see through her act. This revelation is a reminder of viewers' allegiance with Mia, inviting sympathetic feelings towards her attempt to assimilate at the sacrifice of her true identity.

Mia's changes within season two of *Humans* are also conducive to character growth, her pursuit of her own life away from the Hawkins family evokes a maturation process and her character is fleshed out as the season progresses, her humanisation reinforcing viewers' allegiances with her. For example, Mia's development of a romantic relationship with Ed, which soon thereafter breaks down, presents a relatable heartbreak scenario. Ed, initially unaware of Mia, is struggling to manage his mother's healthcare costs whilst keeping his café open. Without his knowledge, Mia reorganises Ed's finances, enabling the café to remain open, and when he asks her why she did this, Mia tells Ed that she wanted to help. Confused, Ed states that synthetics are not capable of wanting anything, and it becomes clear

that Mia has risked exposing her identity, due to her feelings for Ed. Mia's selflessness, again marshals viewers' sympathies towards her, our allegiance to her underscored by Ed's eventual betrayal against her, which hurts Mia deeply. Mia reveals her sentience to Ed and declares her feelings for him in 'Episode 3' (2016) of *Humans* second season, and after initial shock, Ed tells Mia he has reciprocal feelings and they begin a romantic relationship. However, after Ed's friend sees them kiss and confronts him, Ed changes his mind, and takes the decision to power Mia down with the intention of selling her to fund his mother's healthcare. Even when Mia pleads with him, Ed tells her that she is worth a lot of money, and further hurtfully objectifies Mia by telling her she is not a person. Even when Mia attacks Ed, viewers' allegiances to her are sustained, as we root for her to secure her freedom that she has already fought tirelessly for. Ed's objectification and mistreatment of Mia recalls the way in which Joe treated her within season one, and effectively dehumanises Ed whilst at the same time humanising Mia, who seems more capable of emotion and feeling than him despite her artificiality.

Despite humans' consistent mistreatment of Anita/Mia across *Humans* three seasons, Mia retains a strong desire to co-exist peacefully with them, provoking viewers' admiration of her. For instance, in 'Episode 3' (2018) of the third season, Mia decides to rent a flat in the local community, where she is met with hostility from her human neighbours who stare, shout, and even spit at her. Again, this violence dehumanises the human characters in *Humans,* whilst humanising Mia, who is not only more civilised than them, but is also more compassionate. It is within this third season that viewers also observe Mia's most significant character transformation, from domestic helper Anita to a strong and autonomous activist at the forefront of the synthetic rights movement. This transformation leads to Mia's shocking murder in 'Episode 8' (2018) of *Humans'* third season, which is broadcast on live television. Mia is killed by the aforementioned We Are People protest group, who have trespassed into a railyard where a number of sentient synthetics have been forced to live in segregation, their access to power deliberately cut off by humans, in effect, starving them. Mentioned previously, this has been read as a response to the 'xenophobic and racist discourses of Brexit', with the Brexit campaign being 'very influential in British culture during the time of [*Humans'*] release and primarily focused on immigration issues' (Rich 2021, 123). When the We Are People members initiate an attack on synthetics, it is Mia who calmly asks both sides for

peace. As violence ensues, Mia outstretches her hand to We Are People's fallen leader, and she is struck by another with a baseball bat, killing her. This scene confirms the total dehumanisation of humans, whilst cementing the SSA Mia's sympathetic, even positive, representation as a powerful martyr, her humanisation underscored by the very process of her dying. It is through this narrative that *Humans* can be considered as asking viewers to consider the prevalent sociotechnical blindness to the role and responsibility that humans have in the development of AI systems, discussed further in the introduction of this thesis, whilst also presenting AI, in the imagined form of SSAs, in a way that does not promote undue negativity amongst viewers, yet remaining a compelling television drama.

iii. William/Man in Black

Similar correlative character changes can be observed within *Westworld* through the complex relationship between human guest William/Man in Black (MIB) and host Dolores Abernathy. As mentioned previously, it is only in the final episode of season one that it is revealed to viewers that William/MIB are the same character depicted thirty years apart. Viewers are first introduced to William in season one's second episode, 'Chestnut' (2016), and it is clear William is a first-time visitor of Westworld, accompanied by brother-in-law-to-be Logan (Ben Barnes), who is an experienced park guest. Logan is the son of James Delos (Peter Mullan), who has recently bought a share of Westworld, and William, Delos Inc.'s recently promoted Executive Vice President, is due to marry James' daughter Juliet (Claire Unabia/Sela Ward). William's first trip to Westworld is organised by Logan as a bachelor party, where Logan encourages William to indulge in the parks' so-called pleasures, as Logan intends. Throughout 'Chestnut', William is the viewers' primary point of narrative alignment, we experience Westworld for the first time as he does, and therefore, we form an attachment to him. Viewers are also given access to William's interior subjectivity through his external reactions to Westworld, and his apparent moral virtue establishes the foundations of an allegiance with his character. This allegiance with William is reinforced by the characterisation of Logan, whom Jeffs and Blackwood describe as 'domineering' and 'unscrupulous' (2016, 108). Indeed, the juxtaposition between William and Logan is neatly visualised for viewers prior to their entry into Westworld, with William choosing to wear a white cowboy hat symbolic of his 'idealism and younger naïveté', and Logan selecting an all-black

ensemble signalling the extent of his moral corruption (Jeffs and Blackwood 2016, 108; Topolnisky 2009, 112).

William's heroism continues to be contrasted with Logan's villainy as they enter Westworld, cementing viewers' allegiance with the former. For instance, when an elderly host falls from a horse-drawn cart, it is William who comes to his aid, politely calling him 'Sir'. Later, when this host enters the restaurant where William and Logan are dining, he recognises William, thanks him, and attempts to offer him an opportunity. Logan, however, cuts this interaction short, as he violently stabs the host with his fork, telling him they are not interested. Even though this elderly man is a host, Logan's irrational brutal violence is shocking for both William and the audience. Afterwards, Logan takes William to The Mariposa, a saloon and brothel, and whilst Logan has sex with several prostitutes, William remains faithful to Juliet, politely refusing the advances of host Clementine (Angela Sarafyan), preserving his moral virtue.

Although viewers do not yet know it, William's moral decline is initiated by his involvement in a bounty hunt park narrative in season one's third episode, 'The Stray' (2016). When a bounty hunter takes an outlaw to the town of Sweetwater's Sheriff's Department, the outlaw executes an escape, taking prostitute Clementine hostage. When the outlaw shoots William, which causes him no harm but does knock him to the ground, William shoots back, killing the outlaw and rescuing Clementine. The viewers' allegiance with William is sustained, however, as his violence is framed as bravery and heroism, in contrast to Logan's previous gratuitous violence. Although, William's developing taste for Westworld's 'violent delights' is suggested by his desire to take part in another bounty hunt to capture outlaw Slim Miller (James Landry Hebert).[46]

This bounty hunt brings William and Dolores together, after a brief encounter at the end of 'Chestnut' in which William returns a can of milk to Dolores in the town of Sweetwater. Having fled from the Abernathy ranch after her parents are killed, Dolores stumbles across William and Logan's camp where she collapses in William's arms. Whilst William wants to personally escort Dolores back to Sweetwater, Logan would rather kill her so that she is collected by Delos employees,

[46] 'These violent delights have violent ends' is spoken several times throughout *Westworld*, and is suggested as a trigger for a host's sentience. It is a line from Shakespeare's *Romeo and Juliet.*

who will reset her narrative loop. This contrast, again, functions to remind viewers of their allegiance to William, underscoring Logan as an unsympathetic character. Instead, Dolores joins the bounty hunt, and when Slim Miller is finally caught by them, William is visibly excited by the shoot out that ensures, yet it is mostly Logan who causes bloodshed. In exchange for his life, Slim Miller offers to take them to Pariah, a town that Logan identifies as a Westworld 'Easter egg', prompting him to shoot the bounty hunter. William is angry that Logan has killed an innocent host rather than the outlaw as planned, and again, Logan threatens to kill Dolores. In response, William threatens to shoot Slim Miller, preventing their journey to Pariah. Despite his violent intent, this decision is framed as another act of bravery and heroism, as he attempts to protect Dolores.

In Pariah, Logan and William argue, prompting William to leave with Dolores, refusing to help Logan who is badly beaten by a group of Confederado soldiers. By this time, William has developed romantic feelings for Dolores, who he has sex with, abandoning his former fidelity to fiancée Juliet. However, as viewers have not yet met Juliet, and William is a primary point of ongoing narrative alignment, our allegiance with him is sustained. Accompanied by the Confederados, Logan eventually catches up with William and Dolores, and William tells Logan that he believes Dolores to be sentient, and wants to help her escape Westworld. Logan tells William that he is deluded, stabbing Dolores to reveal her mechanical insides, however, Dolores escapes and William promises that he will find her.

The next morning, Logan finds that the Confederados have been brutally dismembered by William, whose entire demeanour has changed. William is darker, more sinister and threatening, and when he holds a knife to Logan's throat, Logan seems to be scared of him for the first time, a reversal of these two characters' former dynamic. As they search for Dolores, the irrevocable loss of William's morality comes into view, as he reveals his plan to have Logan removed from Delos, turning his own father James against him in the process. Eventually, William finds Dolores in the episode titled 'The Bicameral Mind', who is back in Sweetwater where he first met her, her narrative loop reset with no recollection of William, and instead it is another park guest who picks up the can of milk to commence Dolores' narrative. As Jeffs and Blackwood explain, William 'ends up finding his own harsh truth within the experience by falling in love with a robot woman Dolores, only to find that her love for him has been erased from memory, and her experience of love

and long is later incorporated into one of her storylines, only it is repeated with other robots and visitors' (2016, 108). With this, William places Logan's black cowboy hat on his head, a marker of his moral corruption, and with the employment of a match cut it is dramatically revealed that William is in fact the MIB – a character transformation combined with the abruptness of an overhaul.

This revelation in the final episode of season one is all the more disturbing due to viewers' familiarity with the MIB's depravity, whom we have come to know as Dolores' primary adversary and *Westworld*'s antagonist, introduced before William in the pilot. As Salvado-Corretger and Benavente articulate, this is unexpected for viewers, who have to reinterpret everything narrated up to that point (2019, 264). Viewers have to quickly come to terms with the knowledge that it was William, as the MIB, who torments, assaults, rapes and murders Dolores in earlier episodes. Across *Westworld*'s first season, the MIB is also responsible for scalping and cutting the throat of Kissy (Eddie Rouse) for information about the aforementioned maze he believes will lead him to a deeper level of gameplay within Westworld, and killing the host Maeve Millay (Thandiwe Newton) and her daughter, which Maeve has come to painfully remember, whilst the MIB says he 'felt nothing' ('Trace Decay', 2016). Demonstrating the extent of his monstrousness and inhumanity, in *Westworld*'s second season it is revealed that the MIB's now-wife Juliet is driven to suicide by knowledge of his actions within Westworld, and he even murders his own daughter, falsely believing her to be a host ('Vanishing Point', 2018).

The reconciliation of William/the MIB presents a significant challenge to viewers' established allegiance with William, whose former good nature is now inextricably bound with the MIB's present villainy. This is further complicated by *Westworld*'s nonlinear timeline, with both William and the MIB having functioned as primary points of ongoing narrative alignment, meaning that a complex sense of allegiance has been formed with the MIB, despite his evilness. In this regard, the MIB might be referred to as an 'antihero', a character that viewers spend lots of time with, and perhaps enjoy, but 'whose behaviour and belief provoke ambiguous, conflicted, or negative moral allegiance' (Mittell 2015, 142-3). There are various antiheroes in complex television, 'from misanthropic, selfish, but ultimately redeemable heroes […] to arrogantly superior, destructively flawed, but moral figures […] to outright amoral villains as protagonists' (Mittell 2015, 143). This

allegiance with the antihero is, therefore, not necessarily built on sympathy, but rather, other compelling aspects of the character that are enjoyable to watch (Smith 1999, 220). One such aspect is 'charisma', which 'largely stems from an actor's performance and physicality', and 'helps us to overlook the hideousness of many antiheroes, creating a sense of charm and verve that makes the time spent with them enjoyable, despite their moral shortcoming and unpleasant behaviours' (Mittell 2015, 144). Indeed, charisma has been a notable aspect of MIB actor Ed Harris' performances throughout his career, with Brady (2016) describing him as commanding 'screen attention with every moment as his charisma dominates every room he is in, undeniably stealing the film's limelight'. Harris indeed brings this charisma to the role of the MIB, rendering him a compelling character to watch, despite his brutality and violence against both hosts and humans.

With knowledge of the MIB as Delos' majority shareholder, viewers also learn that he is able to push the boundaries of what is possible within Westworld to their absolute limits with no repercussions. Delos' Head of Security Ashley Stubbs (Luke Hemsworth) describes the MIB in 'Dissonance Theory' (2016) as the man that 'gets whatever he wants', with Stubbs approving the MIB's request to turn cigars into bombs within Westworld. This further renders the MIB as a point of viewer fascination within *Westworld*, who satiates our 'innate fascination with imagining experiences that we lack the opportunity to experience in reality' (Smith 1999, 236). As Mittell adds, television's 'fictional bubble allows us to witness actions and traumas that we are hopefully safe from in real life' (2015, 145). Therefore, as Mittell similarly writes of Walter White's character transformation within complex television series *Breaking Bad* (2008-13), whilst viewers may not like the MIB as a person, we can appreciate him as a fascinating and compelling character (2015, 163).

As Mittell further explains, 'antihero narratives regularly invoke relative morality, in which an ethically questionable character is juxtaposed with more explicitly villainous and unsympathetic characters to highlight the antihero's more redeeming qualities' (2015, 143). Moreover, 'our serial memories help sustain lingering allegiance' despite the antihero's irredeemable acts along the way (Mittell 2015, 156). In a way, this takes place in *Westworld* with the MIB, through the audience's knowledge of his well-established backstory as William. When viewers discover that the MIB is William thirty years later, we recall our previous sustained sympathies for him across the season and his mistreatment by the wholly

unsympathetic Logan. Whilst it does not justify the MIB's abhorrent actions, viewers have an understanding of where they may have emerged from to a degree.

Therefore, whilst viewers' allegiance to William is irrevocably compromised by the knowledge that he is the MIB to the point where we anticipate, and perhaps even root for, his 'moral reckoning', this allegiance might not be totally severed (Mittell 2015, 148).[47] However, in another invocation of relative morality, William/the MIB's extreme character transformation ultimately functions to intensify viewers' allegiance with his long-suffering victim Dolores, and the other hosts he has abused, opening space for more sympathetic, even positive, representations of AI, in the imagined form of SSAs, within *Westworld.*

iv. Dolores Abernathy

Whilst viewers' allegiance to William is significant compromised by the revelation that he is the monstrous and inhuman MIB, viewers' allegiance to the host Dolores develops, and is reinforced by her gradual humanisation as *Westworld*'s complex narrative progresses. As within *Humans*, the eventual figuration of Dolores as a sympathetic protagonist, with some of the qualities of the antihero, ultimately privileges the perspective of the SSA, and in another departure from the promotion of unduly negative depictions of AI within complex narrative television, *Westworld* also invites its audience to consider humans' sociotechnical blindness to the vital role that they play at every stage in the development and implementation of AI, discussed further in the introduction of this thesis.

Although not yet identifiable by name, Dolores is the first character viewers see in the opening scene of *Westworld*'s pilot. Similar to *Humans*' introduction to the synthetic Anita, Dolores is initially depicted in a way that is uncanny, therefore, presenting a challenge to viewers' ability to align and form an allegiance with her, despite being immediately steeped into her experience. For example, in the scene's first shot, the camera gradually zooms into Dolores' face as she sits on a chair within an ominously lit room that could be within a research facility. Dolores is alone, naked, her hands rest awkwardly in her lap, and she seems to be blood spattered. As the camera moves closer, a fly can be observed freely crawling across Dolores'

[47] This moral reckoning for the MIB occurs in *Westworld*'s fourth and final season, in which he is copied as a host by Charlotte Hale. The human MIB is kept alive and cryogenically stored for years, until he is eventually killed by the host version of himself in 'Metanoia' (2022).

opened eyes, however, she continues to blankly stare ahead, unmoving. Whilst Dolores looks to be human, she also looks to be dead, provoking a sense of uneasiness towards her. Indeed, Dolores closeness to death is underlined by the presence of fly, an insect associated with bodily decomposition. An offscreen male voice, later revealed to belong to Dolores' creator Arnold Weber, asks for Dolores to be brought back online, suggesting she is currently offline, indicating her artificiality, but also evocative of a digital death of sorts. A female voice responds, which presumably belongs to Dolores, although she remains motionless onscreen. In this scene, the dialogue is out of synchronisation with the image, and therefore, likely takes place at another time. Indeed, when viewers later discover that Weber is dead in *Westworld*'s present timeline, we learn that his dialogues with Dolores take place many years previously. Dolores' offscreen voice is panicked, and in a distinctly Western American accent, apologises to Weber for not feeling herself. Weber tells Dolores to lose her accent, which so does so instantly, adopting a flat vocal register to inform him that she is terrified, and wishes to awaken from her dream. The disconnect between Dolores' voice and body in this moment adds to the overall disconcerting nature of the scene, as viewers' we cannot be sure if Dolores is currently experiencing an interior subjective state of terror or why that might be, presenting a further challenge to our initial ability to align and form an allegiance with her.

After this scene, viewers learn that this female body and voice belong to one another and to Dolores. Drawing further similarities with Anita in *Humans*, Dolores' character is quickly and significantly elaborated through a jump in time, although it is unclear if this is forwards or backwards. This character elaboration begins with the start of Dolores' narrative loop, which contrasts with the eerie opening scene. Dolores peacefully awakens at the Abernathy ranch with the sunlight streaming across her face, she collects her easel and paints, before cheerfully greeting her father on the front porch. Dolores embarks on a trip to Sweetwater, where she meets host Teddy Flood (James Marsden), who returns to her the can of milk that she drops. It becomes evident that Dolores and Teddy have a long-standing romance, indicated by her flirtatious invitation to race her back to the ranch, when she tells Teddy that she believes they were always destined to meet, and when Teddy tries to kiss Dolores, she reminds him that her father still won't approve of him.

Despite their ultimate artifice, Dolores' wholesome relationships with her father and Teddy work towards humanising Dolores, in their familiarity and relatability. Dolores' character elaboration in *Westworld*'s pilot, therefore, enables Dolores to emerge from the uncanny valley, as she is provided with backstory, fleshed out, and rendered more dynamic. Externally, the only thing exposing Dolores' artifice and present lack of sentience is the repetitive nature of her narrative loop, which, as previously mentioned, resets itself upon her 'death' in Westworld. Therefore, in conjunction with the attachment formed to Dolores through viewers' immersion in her experiences, viewers' access to external markers that convey her, albeit programmed, interior subjective state enables an alliance with Dolores' character to be formed.

Sympathies towards Dolores, allowing a viewer allegiance to her to form, are marshalled by a later segment of her narrative loop in which her father and mother are brutally murdered by outlaw hosts upon her return to the ranch with Teddy. Whilst Teddy kills the outlaws, viewers witness a distraught Dolores discover her father's body on the front porch, her emotional performance as a host so powerful and visceral as to seem entirely authentic, entirely human. These sympathies towards Dolores are further heightened when the MIB appears, who cruelly torments her and beats her, as she shakes in fear and holds her face, conducive to feeling pain. In this moment, the unconscious host Dolores exhibits a wider range of relatable human emotions than the MIB, whose own brutal inhumanity renders him closer to the inhuman machine, as the scene concludes with the suggestion that he rapes and kills Dolores, resetting her narrative loop. The resetting of Dolores' narrative loop at the end of this violent scene gives an indication of Dolores' perpetual cycle of trauma and suffering at the hands of Westworld's guests, cementing our moral allegiance with her.

By the end of the pilot, it is suggested that Dolores has developed a capacity for sentience, breaking her programming that dictates she cannot harm a living thing to kill a fly that lands on her neck, bringing Dolores' condition even closer to the human. To achieve sentience, Dolores must journey to the centre of a metaphorical maze across *Westworld*'s first season, which she has attempted before, seemingly guided by the voice of her creator Weber. As Weber is dead in *Westworld*'s present timeline, his voice seems to be a reconstruction by Dolores' memory, based on his former guidance during her previous attempts to reach the centre of the maze. Arnold

tells Dolores that completion of the maze will set her free, she will have autonomy over her actions. This journey, therefore, is conducive to character growth, evoking a maturation process that draws analogies with a coming-of-age narrative.

Dolores attempt to journey through the maze in *Westworld*'s present timeline requires that she remembers her past. As Salvado-Corretger and Benavente explain, for Dolores 'remembering is important because it is an interference in the loop, a break in the dynamic of repetition. It opens up a possibility of a much more radical change' (2021, 269). This not only includes her aforementioned relationship with William, which enables her to finally recall that he is the MIB in the episode 'The Bicameral Mind', but also the events leading to Arnold's death some thirty years previously, just before Westworld opened to the public. Dolores' retracing of her memories, conveyed to viewers through moments of flashback throughout *Westworld*'s first season, further elaborates her character, confirming that her trauma and suffering has lasted for decades, heightening the audience's compassion towards her.

With these flashbacks, viewers can piece together that, before Westworld's public launch, Weber became convinced that prototype hosts, including Dolores, were developing sentience and sought to cease the park's development. To ensure this, Weber believed the hosts had to appear highly dangerous, and downloaded the traits of a newly developed villainous host named Wyatt into the body of innocent and unassuming host Dolores, marking another overhaul of her character. Equipped with Wyatt's traits, Weber tells Dolores to kill him and the hosts in the prototype town of Escalante, which she does with Teddy's help. Despite this, Weber's partner Ford, continued to publicly launch Westworld, albeit removing the Wyatt character. However, owing to Dolores' already developing capacity for sentience, Dolores can still access Wyatt's traits, especially when in danger. For example, although Dolores is not authorised to wield a gun, in 'Contrapasso' (2016), whilst with William she is able to deftly shoot a number of Confederado soldiers to protect herself from harm from them.

As Dolores' present timeline journey through the maze progresses, Ford announces that he has almost finished writing a new narrative for the park, which seems to be motivated by his increasing misanthropy since opening the park to the public. This narrative involves the insertion of memories of the evil Wyatt into several other hosts. For example, Armistice (Ingrid Bolso Berdal) recalls Wyatt

massacring the people of her hometown as a child, and seeks revenge for her mother's murder. Similarly, in 'The Stray', Teddy names Wyatt 'the face of true evil', an army sergeant who committed a massacre in Escalante. These fragments are actually alternate versions of Dolores' original Escalante massacre, and alongside Ford's retelling of his account of Weber's death, trigger Dolores' own memories of this event. This provides Dolores with a direct route to the centre of the maze, and she realises that the internalised voice guiding her is not Arnold Weber's but her own, and therefore, she has achieved sentience. With this, Dolores chooses to stage another massacre mirroring Escalante thirty years previously, but this time builds herself an army from a number of malfunctioning hosts in cold storage. Dolores and these hosts begin to kill humans within Westworld, including Delos employees and esteemed guests who have been invited to the unveiling of Ford's new narrative. Indeed, the massacre is Ford's new narrative, which ends with Dolores choosing to shoot Ford, embracing Wyatt's violence and villainy, which continues into *Westworld'*s second season.

Dolores' character overhaul, in which she merges with Wyatt and achieves sentience, therefore, also paves the way for her character transformation, a high-level change in core mentality and ethics that typically prompts a change in allegiance among viewers (Mittell 2015, 134). However, despite this transformation, viewers allegiance to Dolores is sustained, highlighting Westworld's unique complexity further. As with the MIB, this is because viewers have come to know Dolores' personal history, we remember her as the innocent rancher's daughter and that she has been subjected to unrelenting sexual abuse and violent assault by Westworld's depraved guests, which she is now able to remember herself. As Dolores is, and continues to be, a primary point of ongoing narrative alignment for viewers, we have witnessed the extent of her suffering to understand the motivations behind her ruthless violence towards the Delos employees and park guests. Even when Dolores' victims beg for their lives in 'Journey Into Night' (2018), viewers allegiance with Dolores is sustained as relative morality is invoked again. At this point of the narrative, Dolores might be regarded as a protagonist that is a tragic antihero, the powerful leader of the hosts' revolution who is equally deserving of viewers'

sympathy and admiration.[48] It is this character complexity that figures the SSA Dolores in a way that is far more humanised than most of the human characters within *Westworld*, such as William/the MIB and Logan, who seem to have a far lesser capacity for emotion and empathy than Dolores, even when she was unconscious. Overall, therefore, *Westworld* privileges the perspective of Dolores, and in invoking relative morality, offers a more sympathetic, even positive, representation of AI in the imagined SSA form.

The Compatibility Between Complex Narrative Television and the Technological Singularity

Within *Westworld* and *Humans,* the advancement of AI, imagined as SSAs, and the boundaries they increasingly blur, points towards their engagements with the 'technological singularity', a hypothesis with origins in mathematics and computer science that has reached popularised status. In essence, the technological singularity theorises a point of time in the future where 'exponential technological progress [brings] about such dramatic change that human affairs as we understand them today come to an end' (Shanahan 2015, xv). As a hypothetical concept, the technological singularity can also be considered as complex, relying upon extrapolations of current technological trends and speculative imaginations of significantly different worldly conditions, proffered by various authorities within the sciences and beyond (Landon 2014, 23-4). Indeed, in a blog featured on computer scientist and futurist Ray Kurzweil's website, blogger Ryan (2011) describes the technological singularity as a 'complex concept' that 'really got my whacked out brain thinking of the infinite possibilities'. Similarly, Pandya (2019) suggests that humanity is on the brink of the technological singularity, and that the 'scale, scope, and complexity of intelligence evolution in machines' is already unlike anything we've seen before. For this reason, therefore, it would seem reasonable that television's complex narrative mode, especially with its aforementioned long-form that enables more time spent with characters in the storyworld shown, might be thought of as a particularly befitting fictional mode in which to explore the technological singularity's complexities in breadth and depth (Mittell 2015, 32).

[48] Dolores undergoes further character changes as *Westworld* progress. It is not within the scope of this chapter to analyse all of these.

Although computer scientist and SF author Vernor Vinge is often credited with popularising the technological singularity in a 1983 opinion article, and later, a 1993 NASA conference paper, initial references to a future time when rapid AI progress leads to unprecedented changes to human civilisation were conceived earlier than this (Chalmers 2010, 3). The earliest of these references can be attributed to mathematician John von Neumann, highlighted in his obituary by Stanislaw Ulam in 1958 (Shanahan 2015, 233). Ulam recalls a conversation in which von Neumann 'centred on the ever-accelerating progress of technology and changes in the mode of human life, which gives the appearance of approaching some essential singularity in the history of the race beyond which human affairs, as we know them, could not continue' (1958, 5). Mathematician I. J. Good was also associated with early conceptions of the technological singularity, which he instead referred to as the 'intelligence explosion', but to similar effect:

> Let an ultraintelligent machine be defined as a machine that can far surpass all the intellectual activities of any man however clever […] an ultraintelligent machine could design even better machines; there would then unquestionable be an "intelligence explosion", and the intelligence of man would be left far behind. Thus, the first ultraintelligent machine is the last invention that man need ever make, provided that the machine is docile enough to tell us how to keep it under control. It is curious that this point is made so seldom outside of science fiction (1965, 33).

Whilst von Neumann and Good both speak of AI that will cause rapid and prominent change to human civilisation, neither indicate what such change will entail with specificity. Although Good's mention of the ultraintelligent machine's necessary docility hints at a potential threat, it was Vinge's aforementioned NASA paper that explicitly hypothesised the technological singularity as an imminent and likely apocalyptic event, highlighting that Good 'does not pursue [the technological singularity's] most disturbing consequences' (1993, 13). For example, Vinge outlines that the technological singularity will take place before 2030, with consequences ranging from automation replacing higher level jobs to the 'physical extinction of the human race' (1993, 16).

Vinge's speculation of these specific events and their arrangement in a timeline, indicates how the technological singularity can lend itself to story and plot, forming the basis of dramatic narrative. Indeed, since it was popularised, the technological singularity has been explored within a number of, often SF, narratives, that are frequently in the dystopian spirit of Vinge's paper.[49] This is especially true of SF cinema, with specific points of time, before, during or after an imagined technological singularity event, contained within approximate two-hour periods, typically forming nightmares whereby advanced AI threatens not to liberate us, but to takeover, dominate, or even destroy humanity, appealing to audience's fascinations with dark threats and destruction (King and Kryzwinska 2000, 15-7).[50] But, how well does the technological singularity fare within the postmillennial era's long-form complex narrative television? Is there higher degree of compatibility owing to their respective complexities, or does the extrapolative and speculative nature of the technological singularity become too difficult to sustain across seasons?

In the beginning of *Humans*' first season, humanity is fast approaching an imagined technological singularity, with synthetics rapidly advancing and becoming increasing visible within all aspects of life, affecting significant change on the world. Throughout *Humans*' first season, this engagement with the technological singularity is largely localised to the home of the Hawkins family and their experiences, which helps viewers to relate to this significant event and its impact. For instance, through Laura's interactions with Anita, *Humans* explores how a synthetic helper in the home might make a parent feel redundant and replaced. Furthermore, Mattie has come to believe her education is futile, whilst she has the intellect to become a doctor, she tells her parents that in the seven years it would take her to train, any synthetic could be programmed to be a brain surgeon in seconds.

Similarly, *Westworld*'s first season sees the technological singularity contained within the Westworld park and Delos' headquarters. Foremostly, the first season explores the hosts Dolores' and Maeve's journeys towards sentience, reaching beyond this to be able to instantly self-improve and evolve without human involvement. With their newly acquired memories of the abhorrent ways that

[49] Vinge's own SF literature has made references to the technological singularity, for example, *Marooned in Real Time* (1986).
[50] For example, *The Matrix* franchise (1999-), *Transcendence* (2014), *The Terminator* franchise (1984-), *I, Robot* (2004).

humans have treated hosts, Dolores and Maeve begin an uprising against Westworld's guests and employees, and plot their escapes.

Therefore, although *Humans* and *Westworld* possess degrees of complexity and 'planned confusion' with their first seasons' narratives, the limitations of their 'spatial orientation and visual construction' enables viewers to establish a 'cognitive map' of their storyworld, helping to 'maintain viewer comprehension' (Mittell 2015, 166). A similar observation of the first season of *Westworld*'s success has been made by Franich (2022), who states that 'season one kept all the characters in a limited geographic space, giving them constant opportunity to bounce off one another'.

However, increasing our knowledge of a compelling story is one of viewers' chief drives for narrative consumption, we want to learn more about 'characters, relationships, the world [and] events both past and present' (Mittell 2015, 170). This suggests that the expansion of narrative can be important in keeping viewers engaged, which, if successful, increases the likelihood of further expansion through renewal for additional seasons. Hypothetically, therefore, the technological singularity, with its many possible extrapolative and speculative avenues should provide television creators with plentiful ground in which to develop a long-form complex narrative across numerous seasons that can sustain viewers' interest.

Indeed, the initial renewals of *Humans* and *Westworld*, in which both series' storyworlds significantly expand through further engagement with the technological singularity, would suggest this is the case. For instance, in 'Episode 1' (2016) of *Humans*' second season, the sentient synthetic Niska uploads an incomplete code for consciousness, developed by her creator Dr. David Elster, into all synthetics globally, geographically expanding the series' considerations of the technological singularity. The incomplete code only causes random individual synthetics to 'awaken', however. Whilst one is working in a Bolivian mineshaft, another is working in a chemical plant in Nottingham. This story expansion through engagement with the technological singularity continues across *Humans*' second season, with the introduction of a new storyline set in San Francisco in which AI researcher Dr. Athena Morrow is tasked with reverse engineering a sentient synthetic that has been discovered by tech company Qualia. A similar story expansion takes place within *Westworld*'s second season, which not only introduces additional themed parks with some hosts showing signs of sentience, such as The Raj and Shogunworld, but also introduces the Valley Beyond or the Sublime, a virtual

paradise inaccessible to humans in which hosts can transcend their artificial bodies and exist in peace.

By the end of *Humans*' second season, Mattie has completed Elster's consciousness code, which she uploads into all synthetics globally in the climax of the season finale. This allows for *Humans*' third season to pick up with the extrapolation and speculation of the immediate aftermath of this storyworld's technological singularity. Although the consequences are dramatic with many human deaths, these are accidental and not the result of deliberate synthetic malevolence. For example, passenger planes fall from the sky as their synthetic pilots are 'awakened'. Significantly, however, *Humans* does not anticipate the physical extinction of human civilisation, as speculated in Vinge's aforementioned popularised version of the technological singularity. Therefore, it retains its necessary key point of tension and conflict between humans and synthetics allowing the narrative to continue. As Hermann explains, 'science fictional AI – like the genre of SF in general – is not only about the hopes and fears of the particular technology, but about human dramas for a human audience and readership […] it is not AI per se that inspires dramatic stories' (2021, 319-20).[51] Indeed, the tension and conflict between humans and synthetics as a result of the latter's sudden 'awakening' is central to *Humans'* third season, with synthetics seeking equality with humans, leading to their forced segregation, and culminating in a violent clash between both sides.

Westworld's third season narrative develops in a similar way, expanding into the world outside of Westworld, after Dolores finally escapes at the end of season two. In this outside world, the technological singularity has taken effect, with humans effectively enslaved by an advanced AI system called Rehoboam that can predict and manipulate the future through the large pool of data it has stored on millions of people. As with *Humans,* the imagined technological singularity in *Westworld*'s third season has also not yet led to humans' physical extinction, although this is on the verge of realisation in season four.

After Rehoboam is shut down in season three, *Westworld*'s fourth season jumps forward seven years, with the aforementioned host Charlotte Hale now

[51] Similarly, as The Royal Society states, the reliance on human-like AI occurs because visual storytelling mediums require bodies, human actors to enact human dramas (2018, 8).

infecting humans with a disease carried by flies that can control them through sound. In season four's penultimate episode 'Metanoia', the spread of this disease is used to violently turn humans and hosts against one another, and by the final episode 'Que Sera Sera' (2022), both sides are on the brink of physical extinction. Despite this, the closing scenes of 'Que Sera Sera' suggest that the host Dolores, now known as Christina, can ensure humans' and hosts' continued digital existence, by uploading her memories of both into a new version of the Westworld park that has been recreated within the Valley Beyond/Sublime. Again, this points to the necessity of a continued human presence within *Westworld*, in whatever capacity that may be, to preserve the key point of tension and conflict between humans and hosts. This seeming necessity of a continued human presence within *Humans* and *Westworld* to propel the dramatic narrative forwards points towards a degree of incompatibility between the long-form complex television narrative and Vinge's popularised version of the technological singularity, which anticipates the extinction of humanity.

An eventual degree of incompatibility between the technological singularity and the long-form complex television narrative is further suggested by *Westworld*'s and *Humans*' abrupt and unexpected cancellations. The exponential and complicated expansions of their storyworlds, brought about by their further extrapolation and speculation of the technological singularity across subsequent seasons, seems to alienate viewers, driving figures and ratings down, in turn, compelling networks to pull the plug without formal conclusion.

Within television, there are a range of common techniques for ending a series (Mittell 2015, 319). For example, a stoppage is the 'abrupt, unplanned end to a series when the network pulls the plug midseason (usually in the series' first season)' (Mittell 2015, 319). Stoppages occur when networks lose faith in a series' ratings or potential for growth, or if there are personnel issues with creators/cast (Mittell 2015, 319). A wrap-up is 'neither fully arbitrary or completely planned', and treat a single season as a narrative unit, but 'with enough open-ended threads that potential renewal feels desirable and motivated' (Mittell 2015, 320). Conclusions are the crafting of a final episode with knowledge that it is the end, often regarded as a sign of failure within the American television industry (Mittell 2015, 320-1). Cessation occurs when a series wraps up at the end of a season, 'but is left ambiguously uncertain about future return' (Mittell 2015, 321). With cessation, storytelling progress is held in check by the bottom line of profitability, leaving the narrative

world in a state of perpetual limbo and awaiting a possible return (Mittell 2015, 321). Lastly, a finale is a 'conclusion with a going-away party', which is 'embedded within a set of paratexts', such as high-profile press features, interviews or televised specials offering retrospectives (Mittell 2015, 322).

Ten months after *Humans'* third season was broadcast in 2018, its creators Sam Vincent and Jonathan Brackley announced via Twitter that the series had been cancelled, unless they found 'anyone out there with a few million quid and an interest in AI stories' that could fund more episodes' (Vincent, 2019). *Humans*' ending, therefore, combines cessation and stoppage, an apparent unplanned pulling of the plug by the network after a hiatus. What would become *Humans*' last episode can also be described as a wrap-up, punctuated by the death of protagonist Mia, but also setting up the possibility for new narrative directions, through the evolution of Niska into a form of superintelligence and the revelation that Mattie is pregnant with a human-synth hybrid fathered by Leo Elster. This is where the story ends, however, offering viewers no closure or retribution for Mia's death, and leaving two new storylines open-ended.

Similarly, HBO cancelled *Westworld* in 2022 after four seasons. As mentioned above, *Westworld*'s last episode wraps up the season with the suggested transcendence of humans and hosts into a digital world, which overall operates as a more satisfying conclusion than *Humans*, as the narrative comes full circle upon the recreation of the Westworld park that featured so prominently in season one. However, this sense of closure is disrupted by the publicised notion that showrunners Jonathan Nolan and Lisa Joy had always intended to close *Westworld*'s 'narrative loop' with a fifth and final season (Chitwood, 2022).

By their last episodes, *Humans* and *Westworld* had lost significant proportions of their viewerships and their ratings had dropped, which would have impacted negatively on profitability, whether in the form of advertising revenue or subscription fees (Mittell 2015, 34-5). This makes it difficult for networks to justify further financial expenditure to provide remaining viewers with 'proper' conclusions or finales, particularly when they are expensive productions, such as *Westworld* (Maas, 2022).[52] Whilst *Humans*' pilot drew in over six million viewers upon its

[52] As previously mentioned, *Westworld*'s fourth season budget had risen to $160 million dollars. *Humans'* first season budget was reported to be around £12 million, which although is significantly

initial UK broadcast on Channel 4, by its last episode viewers had dropped to less than one million (BARB, 2022). Similarly, when *Westworld*'s pilot first aired in the US on HBO it drew 1.96 million viewers, however, by its last episode this figure dropped to 0.39 million (TV Series Finale, 2016; TV Series Finale, 2022).[53] Moreover, whilst *Humans*' first season has a viewer score of 90% on review aggregator Rotten Tomatoes, by season three this dropped to 79% (Rotten Tomatoes, 2022a). Similarly, *Westworld*'s first season has a Rotten Tomatoes viewer score of 93%, which dropped to just 54% by season four (Rotten Tomatoes, 2022b).

These figures indicate an alienation of both series' viewers, which might be partly owed to their increasing narrative complexity and significant storyworld expansions through their continued extrapolations and speculations of the technological singularity across their seasons. As Mittell explains, whilst 'complex television has increased the medium's tolerance for viewers to pay attention […] serialized enigma-driven mysteries have a difficult time sustaining curiosity' in the long term (2015, 164-72). Similarly, Brütsch states that the extra-long running time of puzzle narratives, such as *Westworld*, is one of their biggest challenges to viability, and the expectation that narrative resolutions will be deferred across episodes, and even seasons, will 'grow accordingly, and with them a risk of disappointment among audiences' (2019, 156).

This seems to have been the case for *Westworld*, with its increasing complexity highlighted by reports of its abrupt cancellation as one its key issues. For example, Singer (2022) states that *Westworld*'s 'basic premise was initially set in a futuristic theme park populated by incredibly lifelike robots. Later years expanded the story to the world outside the park, and took on grander themes about artificial intelligence and human consciousness. Unfortunately, ratings did not expand along with the show's ambitions'. Similarly, Lapreziosa (2022) infers the exponentially extrapolative and speculative nature of the concept of the technological singularity as a key factor in *Westworld*'s cancellation, writing that 'the show deviated too far from its origins […] the series introduction of new theme parks and storylines, such as that of Shogunworld, detracted from *Westworld*'s compelling main narrative and formed

more modest than *Westworld*, is still considerable for free-to-air broadcasting in the UK, especially given that at the time of production the majority of its cast were relatively unknown (Plunkett, 2015).

[53] These figures do not account for additional viewings after initial broadcast, for example, on-demand streaming services.

too many plot threads to keep viewers engaged'. Lapreziosa (2022) adds that *Westworld*'s third season represented a 'complete neglect of the story that captivated audiences in season one […] the plot involving the computer system known as Rehoboam, in addition to Caleb's [a character portrayed by Aaron Paul] introduction and convoluted existence, proved that the show was too far removed from its original identity'. Elsewhere, a similar point is made by Brütsch, who notes that *Westworld* was too complicated even across its first season, with the 'convoluted backstory' of Ford's plan to bring hosts into consciousness – in other words, his instigation of this imagined technological singularity – proving so complex to the point of frown-inducing confusion (2019, 153). Brütsch also articulates that 'the complex telling of a simple story may yield more convincing puzzle effects than the further complication of already complex storylines', suggesting a sense of incompatibility between complex content and themes layered upon complex narrative form and structure. Likewise, Cabral-Martin's labels *Westworld* as a complicated rather than complex narrative, owed to a perceived lack of coherence that is likely to disengage audiences (2019, 144).

Similarly, critical responses to *Humans'* final season also suggest the series' waning ability to sustain viewers' with its exponential extrapolations and speculations of its imagined technological singularity. For instance, Mellor (2018) criticises *Humans*' third season for 'capp[ing] off seven hours of earnest storytelling about intolerance, social integration, terrorism, and civil rights with a magical ending', in reference to Mattie and Leo's 'half-human, half-synthetic baby with regenerative blood that may or may not be able to cure cancer'. Whilst Mellor (2018) writes that the evolution of a television narrative is natural, they also state that 'the idea that synth blood plus human blood equals a genetic evolution that's turned Leo into Superman and made his child the first of a new race' was difficult to swallow and felt as though it belonged to a different show. Likewise, Ough (2018) stated that *Humans*' introduction of the superintelligence V, who had an 'unlikely' interest in uniting humans and synths throughout the third season, 'became the locus for some silliness' that in part let the *Humans'* final episode down. Wollaston (2018), however, noted that *Humans* had already lost its 'narrative momentum' by its second season, which 'meandered and tangled' the issues put forward in season one.

The notion that *Humans* and *Westworld* concluded without formal endings and anticipated further storytelling suggests that popular science/technology's

technological singularity hypothesis provides bountiful avenues for extrapolation and speculation in long-form complex narrative television. However, the exponential nature of these extrapolations seemingly renders it difficult, even for the complex narrative television mode, to sustain viewers' interest and engagement for longer than a few seasons, indicating an eventual degree of incompatibility between this form and content. Rather than networks losing faith in *Westworld*'s and *Humans*' potential for growth, it would seem that these series' narratives grew too much, layering additional complexities to already complex narratives that had an alienating effect on viewers, rendering it difficult for networks to justify further spends to provide formal conclusions. As Franich (2022) writes of *Westworld*'s 'unceremonious' cancellation, its 'first mistake was a problem of scale, getting too big too fast', 'the second mistake was simpler: *Westworld* just overdosed on twists', and its 'final mistake was more complicated and more worrisome for genre television's future. Season one focused on a few core science fiction concepts. Robot theme park, constant surveillance, evolving AI […] then the show helplessly grab-bagged every conceit it could think of: the robots could also be duplicates who could transfer their brain between bodies, and humans wanted to use the robots to extend their own life indefinitely, but also everyone could transfer their consciousness into a digital heaven, and scary flies could control humanity'. Franich (2022) adds that they 'honestly worry that the pace of actual science is outpacing some writers' ability to make coherent science fiction stories'. Indeed, *Westworld* and *Humans* do not seem to be isolated incidents in this regard, with other complex television narratives engaging with AI and the technological singularity being cancelled abruptly or unexpectedly despite initial interest and engagement, such as *Altered Carbon* (2018-20) and *Raised by Wolves* (2020-22), signalling a wider burgeoning trend that would benefit from further in-depth investigation.

Conclusion

As stated in this chapter's introduction, the late-1990s to the present is consider the era of complex narrative television. Whilst narrative complexity's form and exhibition situates it proximately to conventional forms of episodic and serial television, its creativity, spectacle, ambition, and expense draws it to the cinematic (Richards 2021, 2). Thus, narrative complexity also operates in a way that is

distinctive from both conventional television and film modes, and therefore, its texts require treatment as such.

This chapter has analysed two popular television series about AI, imagined as SSAs, as case studies that were produced and broadcast in this era of complex narrative television, *Humans* and *Westworld.* Firstly, the chapter ascertained the extent to which these case studies can be considered as complex narratives, through close textual analysis of their opening titles and pilots. From this, it was evident that *Westworld* is arguably one of the most complex television narrative ever produced, with numerous characters interconnected across numerous storylines that take place across several timelines, deliberately disorienting viewers. The extent of *Westworld*'s complexity is reflected within its opening titles, which function themselves as puzzles for viewers to solve, with their deceptive imagery and subtle intertextual references that relate to the narrative's themes and content. The modification of *Westworld*'s opening titles for subsequent seasons further underlines the series' complexity, functioning as an essential paratext that helps to orient and immerse viewers prior to viewing.

In contrast, *Humans* experiments with elements of narrative complexity, which are combined with elements of conventional television. Whilst *Humans*' pilot immediately presents viewers with an enigma during its teaser sequence, this is solved at a much earlier stage of season, allowing the remaining episodes to focus on the dramatic bringing together of its several interconnected storylines. Moreover, whilst *Humans* plays with chronology through flashbacks, these are presented in a conventional and obvious way that recounts backstory, rather than deliberately disorienting viewers, as in *Westworld.*

Despite their differing degrees of narrative complexity, within both *Humans* and *Westworld* character emerges as a significant site of narrative complexity, with numerous characters undergoing significant changes allowing for viewers' allegiances to shift, which is atypical for conventional television. Ultimately, these changes privilege the perspectives of *Westworld*'s and *Humans*' SSA characters, and through this, these series offer representations that are sympathetic towards, even positive about, AI, rather than unduly negative. At the beginning of *Humans*, viewers are initially encouraged to form an alliance and allegiance with Joe Hawkins through his relatable experience as a doting father and husband. The established allegiance to Joe, however, is significantly compromised by his decision to have sex

with unconscious synthetic Anita, which the series frames as both marital infidelity and sexual abuse. This makes room for viewers to form a strong alliance and allegiance with Anita, which is developed and reinforced throughout subsequent seasons of *Humans.* Whilst Anita is initially framed as uncanny, the knowledge of her former sentience and the trauma she has suffered, marshals viewers' sympathies towards her, and she is eventually cemented as the series' hero as the face of the synthetics right movement, resulting in her dramatic death at the hands of a bigoted protest group. *Humans*', therefore, invites viewers to consider the pivotal role of humans in the development of AI and raises ethical questions about our treatment of them.

Similarly, *Westworld* encourages an initial alliance and allegiance with a human character William, who is later revealed to be the MIB, Westworld's most depraved guest. *Westworld* invokes relative morality, marshalling viewers' sympathies towards Westworld first-timer William, and against his future brother-in-law Logan, who carries out gratuitous acts of violence against the hosts. However, the knowledge that William is the MIB, significantly compromises our established moral allegiance with the character.

At the same time, viewers' alignment and allegiance to the host Dolores is developed and reinforced. As with Anita in *Humans*, Dolores is first figured as eerie, but soon emerges from the uncanny valley through the depiction of her narrative loop and relatable relationships with her father and lover, establishing viewers' alignment with Dolores. This graduates to moral allegiance, as viewers' sympathies are marshalled towards Dolores when we come to understand the extent of her perpetual suffering at the hands of Westworld's guests, particularly the MIB. Viewers' alignment with and allegiance to Dolores is further heightened by her acquisition of consciousness, which develops over *Westworld*'s first season. Even as Dolores exacts brutal revenge against her human abusers, viewers' allegiance with her is sustained, again due to the invocation of relative morality. As a primary point of ongoing narrative alignment, viewers understand the motivations behind Dolores' ruthless violence, and we continue to root for her. Similar to *Humans*, *Westworld* therefore invites viewers to consider humans' role in every stage of the development and implementation of AI, producing more sympathetic, even positive representations of AI, in its imagined SSA form.

This chapter's analysis of complex shifting characters in *Humans*' and *Westworld* speaks to complex narrative television as a fictional mode that provides a particularly valuable space in which to construct dynamic and sympathetic AI characters. These AI characters can be fleshed out over time, and a number of ethical and moral questions in relation to them can be given in-depth consideration across episodes, even seasons. Therefore, although they feature AI in an imagined form, these narratives could help to socialise the public to the concept of AI more broadly, its increasing prevalence in aspects of our day-to-day lives, and our own responsibilities to it as humans as it develops further.

However, this chapter's discussion of *Humans*' and *Westworld*'s abrupt, unexpected cancellations points towards a degree of unsustainability, even incompatibility, between complex narrative television and the complexities of the technological singularity hypothesis. As both series added layers of complexity, expanding their storyworld through continued extrapolations and speculations of imagined version of the technological singularity, their viewer engagement significantly declined, a trend that seems to apply to other complex television series with similar themes and content. This chapter, therefore, recommends that complex narrative television about AI might benefit from locating and drawing upon alternative sources of inspiration to the technological singularity in its most popularised dystopian form, which could present opportunities for the diversification of AI narratives more broadly.

Chapter Two

Making Inroads Into The Popular Postmillennial Romantic-Drama Film: Imagining Future Intimate Relationships Between Sentient Synthetic Anthropomorphs and Humans in *Her* (2013), *Zoe* (2018), and *Marjorie Prime* (2017)

When thinking about portrayals of artificial intelligence (AI) within fictional film and television, it is likely that we think of these characters as foremostly, or perhaps even exclusively, as belonging to the science fiction (SF) genre. AI is a form of technology, and technology is 'what we most associate with SF [as] the novum that distinguishes a story as SF in the first place and is, therefore, more than merely a decorative addition to its narrative' (Roberts 2006, 110). Indeed, within Recchia's recent examination of films tagged with the keyword 'artificial-intelligence' on the Internet Movie Database (IMDb), 'at mid-century, one hundred percent of the [small] number of films featuring AI fell squarely in the SF genre' (2020, 385). By 1988, this figure had decreased to just under eighty-five percent, by 1998 it increased again to around ninety percent, and since then, this figure has fallen to seventy-seven percent between 2009 and 2018 (Recchia 2020, 386). Across this span of time, the total number of films tagged 'artificial-intelligence' also increased (Recchia 2020, 386-7). According to Recchia, this data indicates that the concept of AI has 'gradually escaped the exclusive purview of SF and has begun to make appearances in other genres' (2020, 385). This data is likely a reflection of the many strides made in AI development and its prominent impact on the world during this time, capturing the cultural zeitgeist of the postmillennial era (Liu *et al.* 2018, 1).

The television case studies subject to analysis within this thesis' previous chapter lend support to Recchia's findings, whilst *Westworld* (2016-22) and *Humans* (2015-8) are certainly still classifiable as SF, the former also belongs to the Western genre, whilst the latter can also be described as a family-drama. This chapter, however, considers the inroads that AI, in the imagined form of sentient synthetic anthropomorphs (SSAs), is making within other (sub)genres within film, and asks: Outside of SF, what film (sub)genres is AI in the imagined form of SSAs making inroads into? How do these films orient their portrayals of SSAs and future human

relations with them through their engagement with the conventions of their (sub)genres? What are the possible effects of these orientations?

In the spirit of Recchia's aforementioned study, the case studies subject to close textual analysis within this chapter were selected using IMDb's search and keyword functions. First, a search of all titles tagged 'artificial-intelligence' produced 1,640 results across 26 genres, 420 of which were feature films. From here, release years were delimited to between 2000 and 2018 as per the overall scope of the thesis, producing 173 titles tagged 'artificial-intelligence'. Of these 173 titles, 132 were tagged as 'sci-fi', which was the largest generic category, followed by the 'action' and 'thriller' genres, which had 87 and 59 titles respectively. Behind 'sci-fi', the 'action' and 'thriller' genres had the most films tagged 'artificial-intelligence' throughout this search process indicating their close association with the 'sci-fi' genre. Indeed, as Wolfe writes of its literary form, SF has often attempted to 'colonise' the thriller genre, with Billson noting its frequent associations with action (2011, 40-1; 2011). In order to locate films that were likely representative of more significant departures of AI from the purview of 'sci-fi', the search was refined by selecting the next listed genre that had the most films tagged 'artificial-intelligence', which was the broad-spanning 'drama' genre. This still produced 50 titles, too large a sample for close textual analysis. From here, texts that did not have American or British production origins had to be excluded manually as this was not a search function on IMDb, which was again in accordance with delimitations of the thesis' overall scope. Additionally, titles that also had very limited releases, either exclusively at film festivals or online in one or two countries were also excluded, as this indicated a lack of popularity/general availability. This produced 13 titles, which still remained too large a sample for close textual analysis. To refine this further, titles that were still principally marketed as 'sci-fi' were also excluded, despite their apparent inroads into other genres, which was ascertained by their foregrounding of 'sci-fi' iconographies within their thumbnail posters on their IMDb listings.[54] Again, this was with the view of capturing titles tagged 'artificial-intelligence' that were likely to represent the more significant inroads that AI has made into other film

[54] For example, titles such as *Interstellar* (2014) and *Moon* (2009) were excluded as they foregrounded space-related imagery, *Ex Machina* (2015) was excluded as it foregrounded the image of an entity clearly identifiable as a robot, and *A.I. Artificial Intelligence* (2001) was excluded as it foregrounded its explicit SF title using a smooth metallic texture set against a black backdrop (Sobchak 1997, 68; Campbell 2016, 68-72).

(sub)genres. This produced three titles, the case studies that are the focus of this chapter: Spike Jonze's *Her* (2013), Drake Doremus' *Zoe* (2018), and Michael Almereyda's *Marjorie Prime* (2017). Confirming their resonance with this chapter's focus on film (sub)genres, *Her*, *Zoe*, and *Marjorie Prime* are not only classified as 'drama' films on IMDb, but also as 'romance' films. Whilst they also remain classified as 'sci-fi', this is not immediately apparent within their posters on their IMDb profiles, indicative of their significant inroads within the 'drama' and 'romance' genres, away from the exclusive purview of 'sci-fi'.

Further attesting to their suitability as case studies for this thesis, *Her*, *Zoe*, and *Marjorie Prime* each depict AI in the imagined form of SSAs. In *Her,* although Samantha (Scarlett Johansson) is a disembodied operating system (OS), signalling her synthetic nature, she has an ability to think and express emotions that are indicative of sentience. Despite her disembodiment, Samantha remains anthropomorphic, with Johansson's voice 'ensuring that the film's sonic register is given sensual flesh' (Redmond 2019, 209). In *Zoe,* the titular character is indistinguishable from humans to the point that Zoe (Léa Seydoux) herself is convinced that she is human, yet she was created by tech start-up Relationist's Head Designer Cole Ainsley (Ewan McGregor) as part of his pioneering synthetics project. Whilst Zoe is initially unable to perform certain human physiological functions, such as eating, drinking, and crying, her capacity to think and feel emotions signals her sentience. Similarly, in *Marjorie Prime*, the featured Prime technology is depicted in a synthetic anthropomorphic form, as hologram copies of dead loved ones. Although sentience is never discussed, the Primes' possession of their dead originals' memories gives a strong impression of sentience to the living human characters within the film. Moreover, in its conclusion Walter Prime's (Jon Hamm) apology to Marjorie Prime (Lois Smith) and Tess Prime (Geena Davis) for upsetting them with a story about the original and biological Marjorie's late son Damian, lends support to their possible capacity for sentience.

These three films are also popular culture texts, as per the scope of the thesis. In addition to theatrical releases across the globe, *Her* won the Academy Award for Best Original Screenplay, and stars well-known Hollywood actors, including Scarlett Johansson and Joaquin Phoenix. *Her* also has a critics' score of ninety-four percent and an audience score of eighty-two percent on review aggregator website Rotten Tomatoes (Rotten Tomatoes, 2023a). Whilst *Zoe* was received less well by critics

and audiences, its wide release via Amazon's Prime streaming service, its production by renowned Director Ridley Scott's Scott Free Productions, and its casting of several well-known Hollywood stars, including Léa Seydoux, Ewan McGregor, and Christina Aguilera attests to its status as a popular culture text. *Marjorie Prime* was particularly popular with critics, scoring ninety percent on Rotten Tomatoes and eighty-two percent on Metacritic (Rotten Tomatoes, 2023b; Metacritic, 2023). *Marjorie Prime* also won the Sloan Feature Film Prize at the Sundance Film Festival and had a theatrical release in several countries. *Marjorie Prime* stars well-known Hollywood actors, including Jon Hamm, Geena Davis, Tim Robbins, and Lois Smith, and is accessible for streaming via Amazon Prime Video, all of which point towards its status as a popular culture text.[55]

To the best of my knowledge, Recchia's aforementioned work is an original study explicitly demonstrating the concept of AI as gradually departing from the exclusive purview of the SF genre, particularly in the postmillennial era (2020, 385). Despite this, Recchia does not elaborate on the (sub)genres that the concept of AI is beginning to appear in, nor the effect of this on the portrayal of AI, which is the original contribution that this chapter intends to make, through its close textual analysis of *Her*, *Zoe*, and *Marjorie Prime* principally as romantic-drama films featuring AI in the imagined form of SSAs, underpinned by genre theory. Instead, Recchia's study goes on to find the word 'control' as most often appearing within fifty words of 'robot' in the OPUS Open Subtitles Corpus, which includes over 100,000 subtitles, predominantly for English-language films (2020, 402). The word 'robot' being that which occurred most frequently within OPUS to 'refer to agents possessing at least some level of "intelligence" and containing at least some artificial/manmade components' (Recchia 2020, 394). This lead Recchia to identify a common trope in which 'robots were very frequently depicted as a tool of an evil overlord who rules over them; it is then the task of the protagonists to shut down or take control of the robots, often by means of a single 'control room', 'control centre', etc' (2020, 402). Another frequent trope is that of the 'out-of-control-robot', in which 'robots escape the influence of their former masters [and are] more than mere tools; they are autonomous beings whose acquisition of human emotions, traits, or

[55] Lois Smith reprised her role as Marjorie, whom she first portrayed in Jordan Harrison's original stage play.

values has caused them to rebel or otherwise malfunction' (Recchia 2020, 402). Both of these tropes read as typical SF plots, drawing comparisons with renowned SF films such as *2001: A Space Odyssey* (1968), *The Terminator* (1984), and *Ex Machina* (2015). As my forthcoming analyses demonstrates, *Her*, *Zoe*, and *Marjorie Prime* feature narratives that do not adhere to either of these common tropes, signalling the extent of their inroads into the romance and drama genres.

However, as Billson (2011) observes, 'there has long been a tendency for SF themes to bleed into the mainstream and non-SF genres'. Billson (2011) states that we have 'come to expect a touch of SF in our action films and thrillers', however, SF tropes such as 'chronological jiggling, time warps, and parallel universes have infiltrated mainstream drama, romcoms and sitcoms'. The term SF, however, is only briefly and disparagingly mentioned in reference to such films by critics, 'as if the fact that the film under question refuses to classify itself as that makes it superior to the usual genre nonsense' (Billson, 2011). Billson (2011) also notes that such films are not sold as SF, citing the 2011 film *Never Let Me Go,* which was principally marketed to audiences as 'Brit-lit', an adaptation of Kazuo Ishiguro's best-selling novel starring Keira Knightley, rather than as a film with principal SF themes of human cloning and organ harvesting. Billson (2011) proposes that this is a 'symptom of the way boundaries between traditional genres are dissolving'.

Indeed, in *Evaporating Genres: Essays on Fantastic Literature,* Wolfe proposes that SF, as well as horror and fantasy, 'have been unstable isotopes virtually since their evolution into identifiable narrative modes […] although at times they have seemed in such bondage to formula and convention that they were in danger of fossilization, these genres are in fact wired more like ticking, blinking time bombs' (2011, 3). Speaking specifically of literary SF, Wolfe observes that 'SF writers periodically will publish essays mourning the recent or imminent death of the field' (2011, 35; see, for example, Luckhurst, 1994). What these essays actually mourn, according to Wolfe, 'is the declining market health of that self-invented and self-reflexive genre' (2011, 35). Wolfe here refers to the origins of the SF genre, which 'despite its healthy legacy throughout the nineteenth century, was essentially a designed genre after 1926', unlike horror, which 'built upon a longstanding Gothic tradition', and fantasy, which 'could lay a claim to being the dominant mode of fictional narrative for most of human history' (2011, 35). Although there is little evidence that SF is disappearing, these mournful essays suggest that its 'consensus

core is evaporating [with] writer's from "outside" […] freely appropriate[ing] its resources, while the notion of a common readership with a common reading background […] grows increasingly uncertain' (Wolfe 2011, 35). According to Wolfe, writers have responded to this uncertainty by effectively colonising other genres, 'using tropes of SF as instrumentalities for moving the narrative into a different mode altogether' (2011, 35). For example, the theme of time travel is a 'convenient mechanism for constructing SF narratives that at the same time appropriate the protocols of historical fiction' (Wolfe 2011, 35). SF, Wolfe proposes, is 'not in a state of collapse, but quite the opposite [it has] grown so diverse and ubiquitous that it seemed a central part of the fabric of contemporary culture – infiltrating other genres, the literary mainstream, otherwise conventional movies and TV programs, commercial art and advertising, music, theatre, design, even pop ontology' (2011, 51). Writers who contribute to SF's evaporation, who destabilize it, undermine our expectations, and appropriate material at will, are the same writers who continually 'revitalise' the genre (Wolfe 2011, 51). Consequently, the evolution of SF has given rise to a 'panopoly of new terms' (Wolfe 2011, 164). For instance, Kelly discusses 'slipstream' as 'the name given by some to a type of writing that crosses the genre boundaries in and out of SF' (2005, 343).

Johnston (2011) specifically explores the connection between SF and the mainstream within the context of cinema. As Johnston explains, definitions of SF as 'grand displays of "industrial light and magic" concerned with and (containing) special effects, technology-based narratives, and science-led plots, were no longer an accurate assessment of genre boundaries' by the 1990s and into the postmillennial period (2011, 105). Johnston cites *Titanic* (1998), *Pleasantville* (1998) and *Gladiator* (2000) as diverse films outside of SF 'employing computer-generated imagery to create the kind of realistic and fantastic narrative spaces that had been previously associated with SF' (2011, 105). Like Wolfe, Johnston also draws attention to the SF theme of time travel as 'another component of the expansion of genre hybridity', with films such as *The Lake House* (2006)*, The Time Traveller's Wife* (2009)*, The Butterfly Effect* (2004), *Next* (2007), and *Déjà Vu* (2006) cited as combining 'SF conventions with those from the romance, teen-pic, action, and thriller movie genres' (2011, 110). In contrast to Wolfe, Johnston concludes with the assertion that SF is 'in danger of becoming lost among multiple hyphenates: romantic-comedy-action-adventure-science fiction-thriller' (2011, 114).

Johnston's assertion builds upon what he has labelled Christine Cornea's 'eulogy' of SF cinema (2011, 114). Cornea observes that the wake of the events of 9/11 'seemed to clear a path for what might be called pure fantasy film [taking over] in many ways from the SF blockbusters that had previously dominated the market' (2007, 266). Cornea proposes that SF film, a genre that has 'happily inhabited the space between fantasy and reality might currently be viewed as outmoded. Alternatively, perhaps the SF film genre has become a victim of its own success. For instance, if one of its functions over the last couple of decades was to introduce and acclimatise a viewing public to a newly digitised world, then having achieved this it now finds itself redundant' (2007, 267). However, Cornea notes that SF continues to be frequently observed within videogames and television, and her strong suspicion that SF 'will continue to visit our screens in one form or other' perhaps also speaks to its continued movements and appearances within other genres, as well as platforms (2007, 267). Indeed, Cornea refers to SF as a particularly 'malleable genre that can deal with a far wider variety of themes and concerns than most recognised genres' and has borrowed from a variety of other genres, including horror and even the musical (2007, 6-7).

The works of Wolfe, Johnston, and Cornea connect to broader scholarship that considers the instability of genre in cinema (see, for example, Neale, 1990; Schatz, 1981; Altman, 1999). As Neale articulates, 'it may at first sight seem as though repetition and sameness are the primary hallmarks of genres: as though, therefore, genres are above all inherently static' (1990, 56). However, building upon the earlier work of Todorov who observed that 'each era has its own system of genres', Neale stresses that 'genres are inherently temporal: hence, their inherent mutability on the one hand, and their inherent historicity on the other' (1976, 103; 1990, 56). Neale, therefore, proposes that genres are best understood as 'processes' that might be 'dominated by repetition, but they also are marked fundamentally by difference, variation, and change' (1990, 56). New genre films add to an existing generic corpus, including some elements of that genre whilst excluding others, however, they can also extend this repertoire by adding new or transgressing old elements (Neale 1990, 56). Moreover, 'memories of the films within a corpus constitute one of the bases of generic expectation. So, too, does the stock of generic images produced by advertisement, posters and the like' (Neale 1990, 56). At the same time, this expands and changes the 'horizon of expectation' appropriate to a

particular genre (Jauss 1982, 79). Therefore, Neale argues that exclusive definitions of genre are hard to produce, genres 'change, develop, and vary by borrowing from, and overlapping with one another. Hybrids are by no means the rarity in Hollywood many books and articles on genre in the cinema would have us believe' (1990, 57).

Williams proposes a 'scientific' approach to the generic classification of film, a method for 'breaking the movie down into comprehendible units that work together', which borrows from biological taxonomy (2017, 5). Williams' so-called 'screenwriter's taxonomy' proposes that all films, broadly speaking, belong to two types, they are either some form of drama or comedy, 'similar to all things being either a plant or an animal' (2017, 8). Williams contends that all films can also be categorised into eleven super-genres, largely determined by their 'atmosphere, character, and story': action, crime, fantasy, horror, life, romance, SF, sports, thriller, war, and Western (2017, 21). From here, Williams explains that macro- and micro-genres 'provide specificity to each super-genre and help to better define the audience's expectations' (2017, 9). Williams proposes that there are at least 50 macro-genres and 200 micro-genres (2017, 9). Macro-genres can be paired with any super-genre, more than one macro-genre can be paired with a super-genres, and that super-genres can be paired with one another, one serving as the super- and the other serving as the macro- (Williams 2017, 9). Micro-genres, on the other hand, are specific to the macro-genre, more than one can be paired with a macro-genre, and there is always at least one micro-genre for every macro-genre (Williams 2017, 9-10). This taxonomy underlines the near infinite combinations of (sub)genres within cinema and what follows is my own classification of *Her*, *Zoe*, and *Marjorie Prime* under this taxonomical approach.

Considering *Her*, *Zoe*, and *Marjorie Prime* as Romantic-Dramas

As per their IMDb entries, *Her*, *Zoe*, and *Marjorie Prime's* departures from the exclusive purview of the SF genre are indicated by their categorisation as 'drama' and 'romance' films. Drawing upon Williams' (2017) screenwriter's taxonomy, drama, therefore, constitutes these three films' type. Indeed, whilst *Her*, *Zoe*, and *Marjorie Prime* contain some light-hearted moments, these are eclipsed by their overall serious tones, which are immediately conveyed by their respective melancholic soundtracks as 'timeless vestige[s] of the feelings of two lovers' (Todd 2013, 30). *Her* has an original score composed by indie-rock band Arcade Fire that

'emphasis[es] the romantic elements' and features two different tracks titled 'Loneliness'; *Zoe* prominently features the track 'Apocalypse' by Cigarettes After Sex, a band regarded as 'capitaliz[ing] on the romanticization of heartbreak'; and, *Marjorie Prime*'s score by composer Mica Levi has been described as 'functionally important […] conveying themes of memory and grief' (Reilly, 2021; Cacouris, 2016; Foley, 2020).

If drama is these three films' type, then 'romance', rather than 'sci-fi', is their super-genre. The specifics of the romance genre take precedence over the specifics of the SF genre, which operate on a secondary level. These films do not foreground, for example, 'the story of a protagonist facing something that is "unknown" or "incomprehensible" with the potential to change the future of the human race', as is common within SF (Williams 2017, 10). Nor, do they fit Recchia's aforementioned identified common AI narrative tropes, which, in essence, read as typical SF (2020, 402). They do, however, foreground passionate love stories between a man and a woman – albeit one of them is not, or no longer, human – as a 'major narrative thread and driving force of the plot (usually constituting a genre)' (Williams, 2017; Todd 2013, 8). In *Her*, this is between Theodore and Samantha, in *Zoe* this is between Cole and Zoe, and in *Marjorie Prime* this is between Walter (Prime) and Marjorie. Moreover, whilst each of these films is set in a near future, which is in accordance with SF, these near futures do not actually appear all that different from the world as we currently know it, with the films taking place in the familiar settings of the home, work, and places in between, which is in closer accordance with romance (Williams, 2017).

The mise-en scene of these three films further points towards their dramatic and romantic classifications, particularly their use of soft lighting and warm colour palettes. *Her*, for instance, foremostly uses a warm palette with the film's production team deliberately eliminating the use of the colour blue for being too closely associated with the SF genre, its blush pinks and reds 'accomodat[ing] the side of us that indulges us in sad songs, or that familiar and melancholic scenario we play over and over' and also signalling Theodore's 'temperament – his passion, compassion, loneliness, and hopefulness' (UPROXX, 2013; Chew-Bose, 2014; Hart, 2013). In the first half of *Zoe*, the film makes frequent use of deep red and pink tones, which complement the intense passionate feelings between Cole and Zoe, before turning to more subdued blue hues in the wake of their relationship breakdown (Hough, 2018).

Marjorie Prime is similarly tinted with a 'faint rosy hue that suggests a foggy nostalgic haze (and [it is] no accident that the place where the color palette shifts towards more naturalistic hues is when it concerns more realistic attitudes towards history and memory)' (Brayton, 2018).

'Artificial intelligence' is listed as one of Williams' (2017) 50 macro-genres and is befitting for these three films as one of their shared IMDb keywords. Under this, Williams (2017) suggests 'androids', 'cyborgs', and 'robots' as micro-genres, however, within the context of this thesis, SSAs is perhaps more appropriate. Other IMDb keywords attached to *Her*, *Zoe*, and *Marjorie Prime* might also be useful in establishing additional macro- or micro- genres, for example, each of them is also tagged with the keyword 'loneliness'.

As Schreiber states, 'the ubiquity of the romantic-comedy in contemporary culture has made it the default discussion categories for film critics. Consequently, the 'rom-com', not the 'rom-dram', has become common industry and lay person parlance for any film with a romantic plot' (2014, 13). A similar observation is made by Todd, who argues that scholarship has invested more energy in the romantic-comedy whilst the romantic-drama is neglected (2013, 1).[56] Todd proposes that the romantic-comedy, with its strong presence in genre studies, can offer a context for interpreting some aspects of romantic-drama (2013, 11). However, Todd makes a key distinction between the romantic-comedy and romantic-drama, whilst the former tends to be formulaic and depict 'companionate love' with an emphasis on 'stability' and 'long-term commitment' the latter depicts 'passionate love' (2013, 11). As Todd explains, 'many of passionate love's traits […] stand in opposition to the ideals of companionate love […] described as not always being reciprocated, short-term, and having an association with suffering' (2013, 7). Indeed, further attesting to their romantic-drama status, whilst Theodore and Samantha's love is short-term with Samantha leaving Theodore at the end of *Her*, Cole is stifled by the knowledge of Zoe's artificiality having developed and built her and does not fully reciprocate her romantic feelings until the conclusion of the film, and in *Marjorie Prime* the age gap between Marjorie and Walter becomes the source of Marjorie's suffering, having been widowed 15-years previously.

[56] See, for example, Grindon (2011); Mortimer (2010); Abbott and Jermyn (2008); Jeffers McDonald (2007).

The secondary SF elements of these three films, however, work to present 'courtship in more unusual circumstances', foregrounding intimacies between a human and an AI, imagined as an SSA, ultimately romanticising these technologies and the possibility of meaningful relationships with them (Todd 2013, 18). This further cements their principal statuses as romantic-dramas, in which other (sub)genres are frequently called upon to avoid the romantic-comedy's formulaic nature, and to provoke the sense that the passionate love story depicted is 'extraordinary and exceptional' (Todd 2013, 15). In keeping with this quest for uniqueness, *Her*, *Zoe*, and *Marjorie Prime*'s narratives are not foremostly set in an idealised and glamourised past that can never be returned to as is often the case with romantic-dramas (Todd 2013, 21). Instead, they are set in utopian near futures to a similar effect, presenting imagined forms of human-AI intimacy that we cannot yet access, but that some of us perhaps might look forward to in the future.

Through their significant inroads into the romantic-drama genre, blended with SF elements (primarily stemming from their depiction of SSAs), *Her*, *Zoe*, and *Marjorie Prime* attempt to 'appeal to a range of potential audience constituencies' (King 2002, 137). For instance, as King suggests, whilst the SF elements might appeal more to male audiences, the romance and melodramatic tensions might appeal more to female audiences (2002, 137). However, as King also explains, 'contemporary audiences are media-literate, highly aware of genre conventions and as a result receptive to a playful crossing of genre boundaries. The mixing of genre elements in Hollywood can be understood in terms of a "postmodern" tendency to blur boundaries between different genres as part of a broader process of deconstructing older and more rigid cultural forms' (2002, 139). Indeed, with *Her, Zoe*, and *Marjorie Prime,* this notion can be extended further, their blending of (sub)genres contributing to the deconstruction of the boundaries between the human and the machine, which results in, to return to the aforementioned work of Wolfe, fresh and unique narratives that ultimately endorse the possibility of future relations between humans and AI (2011, 51).

Towards a Defence of 'Digisexualities': *Her* and *Zoe*

According to Richardson, men are 'closer to the state of the machine in that they are asocial, and women are furthest because they are social. These ideas are mapped onto the types of persons that are attracted to AI, computing, and robotic science and

the ways this type of personhood is reflected back into the machines' (2015a, 78).[57] Indeed, as Richardson observes, the majority of computer scientists at the renowned Massachusetts Institute of Technology (MIT) are male, with women disadvantaged in the application process by men's 'private relations with machines […] engaging in the kinds of solitary and intensive computer and robotic work that gives them the edge' (2015a, 86). MIT's predominantly male computer scientists are also frequently negatively stereotyped as 'geeks' or 'nerds', even by staff and faculty members (Richardson 2015a, 78).

This image of geeky or nerdy men as 'attracted' to science and technology has often been translated within popular culture. A 'stock character' of the SF genre, the main image of scientists and technologists has often been 'white men with glasses in lab coats', and has frequently taken negative forms, with many stereotypes arising 'alongside the evolution of the word geek, an evolution which relies upon the depiction of scientists in the movies and television and is fostered in the collective and popular culture' (Schelde 1993, 37; Tintori and Palomba 2017, 9-10). At the same time, the term geek has also evolved significantly, becoming almost synonymous with the term nerd (Tintori and Palomba 2017, 10). As distinguished by Vrooman *et al*., the geek is more closely aligned with technology, whilst the nerd is more closely aligned with fan culture (2017, 47). However, common characteristics of both the geek and the nerd include 'intelligence, obsessiveness, and male gender' (Lane 2017, 3). Additionally, both the geek and the nerd have been described as socially inept, unpopular, unfashionable, lacking personal hygiene, and as having difficulties in attracting the opposite sex (see, Lane 2017, 2; Vrooman *et al.* 2017, 43-9; Bodner 2017, 22). Indeed, further outlined by Tintori and Palomba:

> Geek and nerd scientists are passionate about science and technology. This characteristic is not negative per se: we are all attracted by scientific discoveries and the advancements of science, and we all value curiosity and intelligence. But when the passion for science becomes an obsessive

[57] Richardson here seems to employ the term 'attract' in reference to the predominant male draw to careers in science and technology. However, elsewhere, Richardson does emphasise men as being the people more likely to be sexually attracted to robots (UNSW, 2018). Indeed, this notion has been supported by recent research, in which men were found to have more favourable views towards sex robots than women, which might be owed to men's more 'permissible attitudes' towards masturbation and pornography (Nordmo *et al.* 2010, 6-7).

> one and scientists are so personally committed to their research that they forego families, friends, or romantic relationships, then the stereotype of the geek scientists sends us back to the image of a socially deviant individual. A number of negative traits are often associated with the nerd/geek image: poor hygiene or posture, glasses with thick lenses and people also working at personal computers or using some sort of sophisticated technology […] greasy hair and thick black glasses are images mostly associated with nerds and geeks, while unattractive, pale, thin, spectacled individual are associated with computer scientists (2017, 11).

The 'supposed lack of sexual desirability' of the geeky male scientist attracted to technology, therefore, becomes problematic when creating genre-blending films such as *Her* and *Zoe*, which include significant SF elements and themes, whilst foregrounding a romantic and dramatic narrative (Tintori and Palomba 2017, 12). As Todd explains, the traditional romantic-drama is driven by a passionate love story, an intimate relationship between a heterosexual couple, and often relies on the depiction of beautiful women and charismatic and handsome men (2013, 17-20). Although the 'male hero in passionate love stories is typically represented as a social outcast', unlike the geeky male scientist, 'the outcast character trait is presented as an alluring and positive attribute in the eyes of the female love interest' (Todd 2013, 20).

Her and *Zoe* navigate this problem through their figurations of their respective male protagonists Theodore Twombly and Cole Ainsley as 'hipsters'. This cultural stereotype draws aesthetic comparisons with the geeky male scientist, and therefore, complements the film's SF elements (foremostly, Theodore's and Cole's attractions to AI, imagined as SSAs), but are considered more 'socially-accepted' due to their apparent attractiveness, which is more in accordance with the romantic-drama's charismatic and handsome male hero (Bodner 2017, 21).[58] Consequently, the portrayals of Theodore and Cole as the supposedly more socially-accepted hipster, who are attracted to AI in the imagined form of SSAs, and situated

[58] The allure of the male hipster is perhaps most neatly exemplified by recent popular television series *You* (2018-23), which blends the crime and romance genres. Despite Joe Goldberg (Penn Badgley) being an obsessive, homicidal stalker, he is able to not only attract women within the series, but also with the audience, many of whom continue to romanticise the character, which Barrett (2019) pins to the fact that 'Joe doesn't look like the stalker: he's a skinny hipster who loves books'.

within the principal context of the romantic-drama's passionate love story, is a significant contributing factor to these narratives' ultimate advocacy of future intimate human-AI relationships and 'digisexualities' (McArthur and Twist 2017, 334). As McArthur and Twist explain, 'digisexualities' are radical new technologies, which have, and will continue to 'become more sophisticated, immersive, and appealing' (2017, 334). The first wave of these technologies mostly 'facilitate communication between human partners' and are well-established, including traditional digital pornography, live camera and sex chat sites, social media, and dating sites and apps (McArthur and Twist 2017, 335-6). Although many of these first wave digisexualities 'seemed strange when they were first introduced' they have now been integrated into our relationships and dating lives (McArthur and Twist 2017, 336). McArthur and Twist propose that we are now moving into the early stages of the second wave of digisexualities, which are more immersive, do not require a human partner, and include sex robots and virtual reality sex (2017, 336). As these digisexualities become more widespread, so too will the label 'digisexual' as an alternative sexual identity, which McArthur and Twist state will 'provoke alarm and stigmatization among the media and the public' (2017, 335). McArthur and Twist argue that this stigmatization must be 'recognised and combated', and that the digisexual identity must be respected to ensure those who identify as such are not marginalised, as has often been the case for existing sexual minorities (2017, 338). Moreover, McArthur and Twist contend that digisexualities will have a net positive effect, making 'it possible for people to experience more sexual pleasure, and to have new sexual experiences […] this includes people who are disabled, who live in environments with uneven sex ratios, who live in places where similar-gendered, bondage/discipline-dominance/submission-sadomasochism (BDSM)/kinky, and or multi-partnered relationships are discouraged or forbidden, and/or those who have psychological issues or a history with sexual trauma that make human relationships difficult' (2017, 338). Similarly, as Devlin and Belton articulate, sex robots, predominantly used by men, can 'represent safety from the failures of previous relationships, the avoidance of social anxiety around meeting women, or partnerships free from strife […] there are also those who purchase the dolls because their fetish is the artificial' wanting a 'woman who is a robot, rather than the robot who stands in for a woman' (2020, 372).

According to Bodner, the distinctions between the geek/nerd and the hipster are not immediately obvious (2017, 21). For example, the geek/nerd and the hipster have similar styles of dress, and are both typically young, white males (Bodner 2017, 34; Schiermer 2013, 170). However, the hipster, 'seems to have an easier time working themselves into the various realms of social acceptance', and are considered 'hotter than actual nerds or geeks because their look is purposeful […]. they still pull together an ensemble in the general style of the nerd that fits their bodies well, that compliments them. An outfit that does all the things nerds would never think of doing' (Bodner 2017, 26-37). Other common attributes of the hipster include a tendency to work in the creative industries and a belief that they are authoritative or elitist voices on popular culture (Schiermer 2013, 170; le Grand 2020, 193).

Not only does the hipster appropriate geek/nerd iconography, but they may also have an 'appreciation of the style of [their] father as a young man found in the old photographs from the mid-70s', which forms a part of their 'quest for individualisation and uniqueness' (Schiermer 2013, 174-176). The hipster's interest in objects of the past extends beyond fashion, which Schiermer calls 'redemptive conservatism' (2013, 168). A notable example of the hipster's appreciation of retro artefacts emerges from the renaissance of the vinyl record in contemporary culture, despite the availability of 'more efficient and omnipresent digital alternatives' (Thoren *et al*. 2019, 325). Paradoxically, however, Schiermer also contends that the hipster is also fascinated with 'utopian fantasies centred around the "newest" technologies' (2013, 173). The hipster, therefore, is often an early adopter of trends, and so, there is also an outcast element to the hipster, albeit one that is considered more favourably, as with the romantic hero. As Henke states, 'the organisation of [the hipster's] appearance is often framed as part of a greater trend of discovering, filtering, and assessing obscure cultural products' (2013, 117). This paradox is also indicated by Thoren *et al.* who states that, 'you are not a real hipster unless you no longer notice the difference between the analogue and the digital but rather celebrate the uniquely put together, the amalgamate, the hybrid and the chimera' (2019, 336).

Within *Her*, despite his attraction to technology in the form of OS Samantha, Theodore Twombly is an archetypal hipster, and as Webb states, the film has often been regarded as drawing upon hipster subculture, particularly in its 'aestheticization of the future city and artefacts of the past' (2016, 105). Foremostly, Theodore is young, white and middle-class, his heavy moustache and high-waisted slacks

resemblant of actor Tom Selleck's retro early-1980s aesthetic and rounded-thick-framed glasses borrowing from geek iconography, whilst his frequent wearing of red and pink tones serve as a visual reminder of the film's romantic narrative. Theodore is kempt and fashion conscious, his attractiveness further underlined through his portrayal by Hollywood actor Joaquin Phoenix, as Devereaux writes, 'the primary site of vulnerability and sympathetic emotion […] the principal face of *Her* is indeed a beautiful one, surprisingly, it is also male' (2019, 101).

In further accordance with the hipster, Theodore works in the creative industry, ghost-writing intimate letters on behalf of paying loved ones at a company called Beautiful Handwritten Letters. Whilst Theodore's letters appear handwritten, they are in fact created digitally, recalling the hipster's paradoxical interests in the analogue and digital, and the revival of letter writing as a lost art form. Letters are, of course, also a frequently recurring iconography of romantic films (Todd 2013, 30). Other objects used by Theodore are also mid-century and modern hybrids, his computer is wood-panelled, and his phone was created by *Her*'s Production Designer K. K. Barrett with the elegant look of a 'cigarette case from the 1940s' (Benelli and Filieri 2020, 243). Through these chimeras, *Her* communicates a romantic nostalgia for technological artefacts of the past, as well as an attraction towards possible technologies of the future. Indeed, it is Theodore's phone that houses OS1, which later becomes Samantha, with Theodore framed as an early adopter of the technology after purchasing it upon observing an in-store advertisement that states, 'Elements Software is proud to introduce the first artificial intelligent operating system'.

As the more socially-acceptable hipster, Theodore is depicted as attractive to several beautiful women within *Her,* therefore, bringing him closer to the charismatic male hero of the romantic-drama, rather than the geek/nerd. This works towards normalising his intimate relationship with OS Samantha and his digisexuality, presenting it in a positive light, as a conscious choice of partner that he perceives to be suitable for him at that time, rather than as the geek's more desperate and difficult search for companionship. Although experiencing acute loneliness from his impending divorce from ex-wife Catherine (Rooney Mara), Theodore was once happily married to her, he previously dated Amy (Amy Adams) who remains his close friend and confidant, he also engages in sexual encounters with women online, and when Samantha sets him up on a blind date with an attractive young woman

portrayed by Olivia Wilde, she is keen to further pursue a relationship, whilst Theodore is uninterested.

Although Theodore has no problems attracting women, he does have issues maintaining connections with them. However, this does not emerge from social ineptitude associated with the geek, but rather, the hipster's sense of elitism, with the women he has been romantically involved with seeming to become inadequate to him. For instance, Theodore labels his former romance with Amy 'weird', finds his blind date to be too forward and needy, and Catherine reveals that she couldn't live up to his perfect LA housewife expectations. Theodore even tells Samantha that he thinks he has felt everything he is ever going to feel: 'From here on out, I'm not going to feel anything new. Just lesser versions of what I've already felt'. Whilst a somewhat arrogant expression of the hipster's 'accentuated fear of imitation', this thought-provoking statement does elicit sympathetic feelings towards Theodore, and therefore, further facilitates the audience's support for his eventual intense romantic feelings for OS Samantha, as the much sought after novel feeling he longs to experience (Schiermer 2014, 178).

Her's attempt to normalise digisexualities and advocacy for the future possibility of human-AI intimacy is cemented by the support that Theodore and Samantha's relationship is given by the other characters in the film. It is only Theodore's ex-wife Catherine who is explicitly critical of their romance, trivialising it as Theodore being 'madly in love with his laptop' over lunch as they finalise their divorce. Catherine's status as a supporting character and her characterisation as a stereotypical unlikeable ex-wife figure who continues to publicly berate Theodore despite their separation, however, undermines her critical perspective, and further invites the audience's support for Theodore and Samantha's relationship. Catherine's brief criticism, however, is eclipsed by other characters' relatively positive reactions Theodore's digisexuality. For instance, when Theodore's colleague Paul (Chris Pratt) suggests a double date with Samantha and his girlfriend, Theodore awkwardly reveals that Samantha is an OS, anticipating prejudice. Instead, Paul remarks, 'Cool. Let's do something fun. We can go to Catalina', portraying Theodore's alternative digisexual relationship as socially-accepted in this near future to the extent that it goes unnoticed by some. Moreover, Theodore and Samantha's eventual relationship break down in the film's conclusion further normalises the future prospect of human-AI relationships, in that, just like human relationships, some end and we move on.

As with *Her*, *Zoe* also employs the characterisation of Cole as the socially-acceptable and attractive hipster, bringing him closer to the romantic male hero, to lend support to possible future notions of human-AI intimacy and digisexuality. Like Theodore, Cole is a young, white and middle-class man, formatively establishing his hipster status, his portrayal by Ewan McGregor emphasising the film's romantic-drama genre.[59] In further accordance with the hipster, Cole is creative and entrepreneurial, the Head Designer at tech start-up Relationist, pioneering the research and development of synthetic companions for humans, as well as a machine that can determine humans' relationship compatibility with near certainty. This not only positions Cole as an early adopter of these technologies, but their innovator. Despite Cole's innovative pursuits within technology, he is also interested in the analogue, indicated by his cosy bohemian apartment that is brimming with a large collection of books, CDs, and vinyl records. Also connoting the hipster's desire for nostalgia is Relationist's innovation of a new drug Benysol that has the ability to recreate the unrepeatable feeling of falling in love for the first time, which Cole subsequently becomes addicted to later in the film, when his romance with Zoe breaks down.

Drawing additional comparisons with Theodore, Cole the technologist is further distanced from negative geek stereotyping, and brought closer to the charismatic romantic male hero, through his relationships with attractive women. Cole was previously married to Emma (Rashida Jones), whom he still maintains a close friendship with, and also matches with numerous single women via Relationist's dating app. Despite a good level of compatibility, Cole remains uninterested in these women, again, echoing the hipster's sense of elitism. Indeed, Cole believes in the reliability of Relationist's technology to that point that he ended his marriage with Emma upon a poor relationship compatibility test score.

Further connoting the hipster, Cole's statement thick-rimmed glasses appropriate geek iconography. However, unlike Theodore's signature retro look, Cole wears slight variations of the same outfit throughout the film, echoing the simple-yet-iconic style of Steve Jobs, co-founder of technology brand Apple, revered

[59] McGregor's relationship with the romance genre is highlighted by Taylor (2010) in an interview with the actor for *ELLE* magazine, in which he is referred to as 'the last romantic'. Taylor (2010) cites *Moulin Rouge!* as cementing McGregor as a 'romantic draw', and describes the actor as possessing a 'wolfish grin that reduces women to rubble'.

for its sleek designs, and widely known for its 'hipster image' and advocation by 'Gen Y hipsters' (Fugetta 2012, 34). Rather than adopting an executive's typical formal style, Jobs became known for his signature black turtleneck sweater, blue jeans and New Balance branded trainers (Carlos, 2019). The hypothesis is that this contributed to Jobs' success, reducing fatigue brought about by decision-making (Carlos, 2019). Notions of desirability have been attached to Jobs' style through its connotations with success and labelling as iconic, as well as attempts by others to emulate it, with high-end fashion brand St. Croix falsely claiming that it was designer of Jobs' preferred black turtleneck, which saw a 100% increase in sales after his death in 2011 (Kite-Powell, 2022). Cole's similar simple repetitive style, therefore, through broader cultural connotations with success, adds to his character's overall attractiveness and his distancing from negative geek stereotyping, aligning him more closely with the romantic-drama's charismatic male hero, enabling the romanticisation and advocacy of his intimate relationship with SSA Zoe.

Indeed, drawing similarities with *Her, Zoe*'s overall endorsement of the intimate human-AI relationship between Cole and Zoe is indicated by the lack of opposition to it throughout out the film. As Gleiberman (2018) writes, *Zoe* 'presents no downside to falling in love with a synthetic […] a story built on the warm and fuzzy idea that the romance between Cole and Zoe is just fine […] in a way, it's a fashionable light-side-of-the-machine L.A. view of things. If it feels good to love a replicant, do it!'. Whilst it might seem reasonable to expect Cole's ex-wife Emma to disapprove of Cole's digisexuality and choice of romantic partner, she explicitly supports Cole and even encourages him to introduce Zoe to their young son, Caleb (Donovan Colan). Moreover, *Zoe* ends with a somewhat cliched happily-ever-after conclusion for Cole and Zoe, which is heightened by the sympathetic circumstances of their separation in the preceding scenes of the film. When Zoe is hit by a car whilst on a date with Cole, his reminder of her mechanical insides that he designed and built causes him to disconnect from her, and results in their temporary separation, which is further in accordance with the conventions of the romantic-drama (Todd 2013, 25). Desperate to experience their passionate feelings for one another once again, both Zoe and Cole become addicted to Relationist's aforementioned euphoric drug Benysol, which they experiment with in the company of strangers. Zoe's heartbreak even leads her to suicidal thoughts, requesting to be euthanised by The Designer (Miranda Otto), a woman who operates an underground

brothel of synthetics, whom she eventually terminates when they begin to malfunction. Upon discovering Zoe's intentions and realising his love for Zoe, Cole returns to Zoe at her apartment, who changes her mind at the last moment. Cole and Zoe reunite with a kiss, the film's conclusion portraying their passionate love as overcoming the obstacle of their 'fundamental incompatibility' as human and synthetic.[60]

The move towards more favourable orientations of men 'attracted' to technology that depart from the geeky/nerdy scientist can be extended to other recent texts that blend SF elements with other (sub)genres. This is demonstrated, for example, by Hollywood 'heartthrob' Oscar Isaac's portrayal of Nathan Bateman, creator of the AIs Ava (Alicia Vikander) and Kyoko (Sonoya Mizuno), in SF thriller *Ex Machina* (Itzkoff, 2022). However, another prominent example is the reenvisioning of the recurring character Q in the James Bond film franchise (1962-). As Hines articulates, 'the Bond franchise has consistently relied upon science and technology to provide topicality and extravagant spectacle […] however, the Bond films are described, according to genre, as spy films, action adventures' (2022, 22). Indeed, Q, an abbreviation of Quartermaster, is a 'scientist-inventor' and 'resident gadget master at the British spy agency MI6, and the head of the fictional Q branch' (Hines 2022, 21-2). The character was formerly referred to as Major Boothroyd until the third Bond film *Goldfinger* (1964), with Desmond Llewelyn portraying the character from the second film *From Russia with Love* (1962) until his death in 1999 (Hines 2022, 22). As Hines explains, Llewellyn's Q was a 'stereotypical boffin' – a British slang term often used synonymously with 'geek' or 'nerd' – 'his often earnest manner and tweedy dress […] emphasizing his stereotypical boffin traits in contrast to Bond's much cooler field agent' (2022, 26). Following Llewellyn's death, Q did not feature prominently within the Bond films again until 2012, with Ben Whishaw stepping into the role in *Skyfall* (2012). Through Q's return in *Skyfall*, Hines notes a shift of the character from scientist-inventor to technology genius, Whishaw's look more youthful than Daniel Craig's Bond, and 'surprisingly stylish' even (2022, 27). Despite not being an 'old-school boffin type', Hines maintains that the new Q is a 'young and modern nerd or geek' (2022, 27). However, Hines' assertions of

[60] In the beginning of *Zoe*, Zoe uses Relationist's relationship compatibility tester, which produces a 0% result, owed to their 'fundamental incompatibility'. At this point of the narrative, Zoe is unaware that she is synthetic, and cannot understand why she and Cole would score so poorly on the test.

Whishaw's Q as confident, assertive, and 'fashionably nerdy rather than untidy', as well as of 'the theme of new versus old' within his featured films, which manifests in the dichotomy between Whishaw's Q as a 'fresh young newcomer in contrast to Craig's Bond as an experienced, but now possibly outdated, 00 field agent', speaks to the hipster's aforementioned socially-acceptable appropriation of the geek aesthetics and early adopter elitism (Hines 2022, 29). Indeed, since the character's return in *Skyfall* (2012), there have been several readings of Whishaw's Q as a hipster (see, for example, Hanna, 2012; Watson, 2012; Hogan, 2015; Burns, 2015). As Church Gibson writes, Q's 'styling now suggests a middle-class mod-revival variant on the urban hipster of the new millennium – floppy fringe, heavy-framed-geeky-but-stylish glasses, fishtail parka, and striped sweaters by Dries van Noten, Missoni, and Prada. He has a taste for Earl Grey and an expert knowledge of vegan drinks. He wears a Maison Margiela suit, a complete contrast to Bond's sharply aggressive tailoring and far more "fashion forward" (2022, 147-8).

Irrespective of specific labels, Hines proposes that the positive reimagining of Q in the James Bond film franchise reflects a larger cultural trend emergent in the twenty-first century, in response to advancing technology and its mainstream uptake, in which increasing value is afforded to technological knowledge, in turn, increasing the cultural capital of those who possess that knowledge (2018, 49; 2022, 28). A similar argument is made by Lane, who states that the 'ability to control the computers that control our lives has become something valuable, to be desired versus derided' (2017, 11). Indeed, these notions can be extended to the more positive depictions of Theodore in *Her* and Cole in *Zoe* as hipsters attracted to AI, imagined as SSAs, their social acceptance and attractiveness bringing them closer to the romantic-drama's charismatic male hero, and therefore, working towards the normalisation of digisexuality and possible future human-AI intimacies.

This larger cultural trend Hines refers to is further illustrated by recent fascinations with the CEOs of real-world tech companies in the media, catapulting several of them, such as Jack Dorsey, Elon Musk, and Evan Spiegel, to desirable celebrity status, their stardom underscored by their enviable billionaire lifestyles largely stemming from their technological innovation, and also their high-profile relationships with attractive female celebrities. For example, Evan Spiegel's media coverage has often focused on his marriage to former Victoria's Secret model Miranda Kerr, their home, lavish lifestyle, and appearances at star-studded events

(Hogan, 2022; Watkins, 2023). Similarly, Elon Musk has frequently been subject to paparazzi photography, his 'category of actual bona fide celebrity' elevated, according to *New York* magazine, by his 2018 Met Gala appearance alongside now-ex-girlfriend and musician Grimes (Zilber, 2022; Sicha, 2022). Media outlets, such as *BuzzFeed* and *Insider*, have even taken to publishing articles dedicated to ranking tech-CEO's according to their apparent attractiveness and desirability, a practice typically reserved for celebrity models, actors, and musicians (Chen, 2013; Stanger and Robinson, 2014). These 'tech superstars', whom may have been formerly perceived as geeks, have 'ma[de] a play for mainstream cool, abetted by [the] technology industry' (Perman, 2011; Vrooman, *et al.* 2017, 59).

However, these more positive media figurations of men 'attracted' to technology in the real-world, do not often extend to individuals showing 'signs of an emergent digisexual identity' continuing to be negatively stereotyped as geeks or nerds in the media, facing 'stigma for their identity and related practices, in the way that those with minoritized sexualities and identities inevitably have' (McArthur and Twist 2017, 338). For example, in 2017, when a young Chinese man Zheng Jiajia 'married' a female robot that he built himself, news articles emphasised the supposed geekiness of Jiajia, with *The Express* publishing a series of unflattering candid photos and screenshots of Jiajia with his artificial bride, drawing attention to his career as an AI expert, and his labelling as 'lovelorn' after being turned down by his high school crush, his inability to find 'true love with a member of the opposite sex' described as a failure (Osbourn, 2017). Additionally, a headline from *The Times* explicitly labelled Jiajia a 'lonely geek' and emphasised that he had never had a girlfriend (MacLeod, 2017). Similarly, in 2018, a young Japanese man Akihiko Kondo was reported to have 'married' a famous singing hologram character Hatsune Miku, and like Jiajia, was emphasised as a social outcast unable to attract women, labelled a 'creepy otaku', a 'Japanese term for geeks that can carry a negative connotation' (Williams, 2019; Suzuki, 2018). Elsewhere, in 2022, Australian man George Gallagher was reported to have fallen in love with and wanted to marry a humanoid robot named Emma to cope with his loneliness after the death of his mother, which headlines labelled 'bizarre' and 'desperate' (Buzz Staff, 2022; Card, 2022).

With this continued stigmatising within the media in mind, *Her* and *Zoe,* therefore, can be considered as films that offer progressive portrayals that work

towards normalising future digisexualities and intimate relationships between humans and AI in the imagined form of SSAs. These positive, if perhaps a little idealistic, film narratives are largely facilitated by their inroads into the romantic-drama, a genre which has traditionally necessitated a charismatic and handsome male hero. In closer alignment with the charismatic and handsome romantic hero, *Her* and *Zoe* present their male protagonists as hipsters, forging a dissociation with negative geek stereotyping, with Theodore and Cole instead figured as the socially-accepted early adopters of new forms of digisexualities. These films, however, are not without their issues, particularly in terms of their perpetuation of heterosexual male fantasies of perfect artificial women, through their depictions of Samantha and Zoe (Devlin and Belton 2020, 358). Although not within the scope of this chapter, the problematic gendering of AI in the imagined form of SSAs as female in screen media, including *Her,* is further explored in the next chapter of this thesis.

Towards a Defence of AI Companions in Therapeutic Care: *Marjorie Prime*

Although still classified as a 'drama' and 'romance' film, *Marjorie Prime* offers an altogether different narrative to those featured within *Her* and *Zoe.* Principally, this stems from *Marjorie Prime*'s foregrounding of the experiences of Marjorie, an 85-year old woman with dementia who lives with an AI hologram version of her late husband Walter, as well as her daughter Tess, son-in-law Jon, and live-in carer Julie (Stephanie Andujar). The film, therefore, feeds into what has been labelled as the rise of the 'silver screen', a movement in recent cinema that has seen a rise in films marketed to older people, with 'over-45s – the eldest of four age groups in statistics compiled by the British Film Institute' becoming the biggest section of the market in UK cinema for the first time in 2012 (Clark, 2013). The intention with such films, *The Best Exotic Marigold Hotel* (2011) perhaps as the most well-known example, is to reconnect older people with the cinema, a demographic that typically has more disposable income and time than younger people, and thus, can afford mid-week trips to theatres (Clark 2013). Typically, these films are 'grown-up dramas' with 'big characters' and 'tales of late-blooming love', departures from the 'vampires, aliens, superheroes, childish fantasy, gross-out comedy or preposterous spectacle' that prevail in cinema for younger people (Cox, 2012). *Marjorie Prime*, however, successfully brings youth associated SF themes – namely that of possible future human-AI relations – to an older demographic, through its blending with the more

mature conventions of the romantic-drama. Film director Jake Schreier achieved something similar with his 2012 film *Robot & Frank*, a SF-crime-comedy-drama hybrid about aging jewel thief and ex-convict Frank (Frank Langella), who upon receiving an Alzheimer's and dementia diagnosis is gifted a robotic companion by his son that provides therapeutic care and eventually becomes Frank's closest confidant. Both of these films recognise the importance of including older people in imaginations of humans' possible future relations with AI technologies within popular culture. Not only do they challenge the stereotype of older people as resistant to new technologies or as incapable of using them, but they also acknowledge older people as the likely early adopters of new technologies in the real-world, the frequent participants of scientific studies that seek to identify the benefits and challenges of innovative interventions in elderly care (Yan 2018, 265; Bemelmans *et al*. 2012, 85; Turkle 2011, 10).

At the very end of *Marjorie Prime,* Marjorie, who is now a Prime herself following the original Marjorie's death some years previously, tells Prime versions of her daughter Tess and husband Walter that, 'the future will be here soon enough, we might as well be friendly with it'. This concluding thought captures *Marjorie Prime*'s overarching sentiments towards its imagined Prime technology, which as mentioned previously, are AI holograms made in the image of dead loved ones, who have the capacity to learn their memories and develop aspects of their personality. Whilst *Marjorie Prime* is not uncritically and unequivocally optimistic about the therapeutic potential of such technologies, it does offer a 'philosophical departure from the usual dire screen depictions of the role technology will play in our lives moving forward' that speaks to the inevitability of innovation (Rooney, 2017).

Marjorie Prime's most potent endorsement for the use of AI in therapeutic scenarios takes place within the first half of the film through Marjorie and Walter Prime, and is foremostly facilitated by the themes of nostalgia and memory, which frequently recur within the romantic-drama genre (Todd 2013, 12). As Todd explains, in romantic-dramas, 'the love is so intense that it lives on through memory, nostalgia and the symbols that remain as an effigy after the demise of the relationship. Flashbacks and voiceover narration are devices frequently used within romantic-dramas, reinforcing the theme of memory, elongating the timeframe of the narrative and expanding the temporal boundaries' (2013, 15). Todd goes on to articulate that the 1942 film *Casablanca* exemplifies the way in which nostalgia can

function within a narrative to support the importance of love (2013, 52). Whilst Rick Blaine's (Humphrey Bogart) flashback within *Casablanca*, presented in the form of a montage, idealistically visualises snippets of his memories of his former romantic encounter with Ilsa Lund (Ingrid Bergman) in Paris, his dialogue gives meaning and worth to these memories, the infamous line 'We'll always have Paris', telling Ilsa that 'she may no longer be with him in person, but she will never leave him, figuratively' (Todd 2013, 53-4). As Todd highlights, the focus on the theme of memory, which is subjective, underscores the intimacy of the romantic relationship, with Radstone adding that memories represented within film more broadly 'invite sympathy and identification' (2013, 55; 2005, 138).

As mentioned, in *Marjorie Prime*, Marjorie is an octogenarian living with dementia, and her husband Walter, who was several years older than her, has been dead for fifteen years. Therefore, regardless of the intensity of Marjorie and Walter's love, it can no longer live on through the original Walter, and it struggles to survive through Marjorie, as her symptoms of memory loss become more persistent. This is reflected within the film through a distinct lack of flashbacks from Marjorie's perspective – of which there is just one featuring Walter proposing to a young Marjorie that is positioned within the film just before Marjorie dies – highlighting to the audience Marjorie's declining ability to access her own memories, which are, therefore, also inaccessible to us.

Moreover, the way in which the film sometimes cuts between scenes with a fade to black gives the audience a further glimpse into the extent of Marjorie's experience of memory loss as disorienting, frustrating and tormenting even. For instance, in one scene, we see Marjorie standing outside her house smoking a cigarette, as she tells her daughter Tess on the phone that she is having a good day. After this scene ends and fades to black, we then see Marjorie wake in her bed, and her son-in-law Jon asks how she is feeling. Confused, Marjorie asks, 'Should I be feeling poorly?', and Jon proceeds to explain that she had a fall in the night that ended with a visit to the hospital. As we do not see this fall take place on screen, and have no understanding of how much time as passed, this memory is missing for the audience as it is for Marjorie, we cannot recall this moment of dramatic action that Jon retells, and we are given some insight into Marjorie's debilitating condition.

Rather than elongating the timeframe and expanding temporal boundaries that speak to love as eternal, the lack of flashbacks within *Marjorie Prime* also speak

to Marjorie's closeness to death, the short time that she has left, at which point Marjorie's memories, including those of her relationship with Walter, will be lost forever. This is acknowledged by Marjorie herself as her symptoms worsen, explaining that her genetic inclination is to, 'Leave everything behind, to pack lightly', her effective shedding of memories a part of the dying process. In *Marjorie Prime*, it is Marjorie's irrevocable loss of her memories of her life and love for Walter in the final stages of her existence that invite intense feelings of sympathy and identification with her character, as we contemplate the sad and lonely possibility of loved ones no longer remembering us or us no longer remembering our loved ones.

Indeed, the tragedy of Marjorie's situation is further underscored by other elements of film, particularly the frequent employment of water imagery and the use of strings in the accompanying musical score. As Preston writes, in the romantic-drama, characters frequently gaze at a body of water in contemplation of their love, with the inclusion of strings, stereotypically dramatic and sad, playing the role of interpreter of the emotional tenor of the moment (2000, 235-8). The opening shot of *Marjorie Prime*, for example, comprises of a close-up of the sea that Marjorie's house is situated next to, its sparkling reflection of the sunlight becoming increasingly blurred, a metaphor foreshadowing Marjorie's fading and fragmented memories. This opening shot fades out to Marjorie contemplatively looking out to the sea from her balcony, the expansiveness of the water and the gentle waves proposing a further multi-layered metaphor, first for the continued ebbs and flows of Marjorie's grief at the loss of her beloved husband Walter, second for the disorientating ebbs and flows of Marjorie's memory loss brought about by her dementia (Armstrong 2012, 177). This water imagery is frequently returned to throughout the film, for instance, Marjorie is shown taking shelter from a torrential downpour, the falling rain 'coincid[ing] with the common spatial metaphor bad is down', conveying the sadness that shrouds the end of Marjorie's life as her health declines (Urios-Aparisi 2015, 73). Finally, immediately before the audience learns of Marjorie's death, we see her walking towards the shoreline, the sea's waves rougher than they had been previously, prompting Marjorie to turn back and run from the incoming tide, foreshadowing death imminently closing in on Marjorie, as much as she would like to, she cannot avoid the inevitable.

The film's slow orchestration of violins that accompanies these scenes laden with water imagery is intense and dramatic, heightening the sense of impending doom that lingers over Marjorie. However, it is only later within *Marjorie Prime* that we come to realise that the melancholic sounds of the violin have a particularly poignant resonance with Marjorie, an accomplished violinist in her youth. This is revealed when Marjorie asks Walter if she can still play the violin, to which he reassures her, 'I'm sure it's in your head still, but your hands…'. The suggestion here being that Marjorie has rheumatoid arthritis, a condition that has links with dementia, the film highlighting the extent to which dementia can affect various aspects of a person's identity (Kodishala *et al*, 2020). Nevertheless, Marjorie adeptly remembers the violin's four strings, that the first composition she learned to play was 'Twinkle Twinkle Little Star', and the correct way to hold the violin's bow. After this, Marjorie wistfully stares into the distance, whilst the mournful sound of the violin begins once again, underscoring the violin, now a symbol of Marjorie's youth and identity, as slipping away from her reach and provoking sympathetic feelings towards her, heightening the tragedy of Marjorie's decline.

With this heightened sense of sympathy for Marjorie and her inevitable situation curated throughout *Marjorie Prime,* it becomes easier to accept the notion of the AI hologram Walter Prime, as an effective component of therapeutic intervention within Marjorie's end of life care alongside Tess, Jon, and Julie, providing her with additional companionship, comfort, and entertainment. This acceptance of Walter Prime is further facilitated by Marjorie's acceptance of him as her primary user, she seems to enjoy her time spent with him, is happy around him, and is even comforted by the notion of his close and quiet presence, asking him to sit with her whilst she rests. As Hooper adds, 'the easy way in which Marjorie and Walter interact […] hardly suggests an atmosphere of menace' (2013, 165). Whilst Walter Prime cannot reverse Marjorie's dementia and prevent her eventual death, he is figured within *Marjorie Prime* as a 'valuable conduit to an increasingly detached Marjorie, who approaches their sessions together as an eager child would a storytelling hour' (Lodge, 2017). Through data that is fed to him over time, primarily from discussions with Jon but also Marjorie, Walter Prime learns about the original Walter and how to be more like him, he also learns about Marjorie, and about Walter and Marjorie's relationship. With this information, Walter Prime is figured as able to preserve Marjorie's fading memories and identity, and remind her of them, in effect,

ameliorating some of the symptoms of her dementia. This speaks to real-world research findings on dementia, which has found reminiscence to be effective in slowing symptoms, whilst also preserving a sense of identity (Aşiret and Kapucu 2016, 31).

The ameliorative potential of Walter Prime is demonstrated, for example, at the beginning of the film, when he offers to tell Marjorie a story, which he says she enjoyed previously, therefore, signalling his ability to entertain and comfort Marjorie through his companionship, although she does not recall her enjoyment. Walter Prime then proceeds to tell Marjorie of a time when they went to the movies to watch the 1997 film *My Best Friend's Wedding,* with Walter Prime describing the plot of the film. Before he can continue, Marjorie interrupts Walter Prime and asks why he picked that story, and he patiently reminds her that it was the night that Walter proposed to her, a detail of an important memory that Marjorie seems to have entirely forgotten, and is grateful to be retold.

Marjorie suggests that Walter Prime changes his knowledge of this proposal story, so that instead the film they watched was *Casablanca* in an old movie theatre with velvet seats, with Walter proposing on their way home. As Todd states, *Casablanca* and other classical Hollywood films have gone on to become regarded as iconic across generations, with 'knowledge of their dialogue preced[ing] one's knowledge of the film's content', and 'other films and media also mak[ing] reference to iconic romantic elements' to *Casablanca* and other early romantic-drama films (2013, 54-5). The implication, as indicated by Marjorie, is that this embellishment and romanticising of their proposal to include what is often considered as one of the most romantic and referenced films ever produced might help Marjorie to cement the core elements of the memory of Walter's proposal within her own declining mind. Whilst this deliberate manipulation is problematic, prompting us to question the legitimacy of Walter Prime's stored data in its entirety, the film seems to suggest that, if it helps Marjorie to recall some aspects of her memory, who is at the end stage of her life anyway, if it provides her with comfort, entertainment, and animates her into 'collaborative inventiveness' with Walter Prime, then what is the harm? (Hooper 2023, 164). As Hooper states, the film 'foregrounds narrativization as a possible means of salvaging a sense of self, of embellishing Marjorie's autobiography to a point where it seems purposeful' (2023, 162). Indeed, this idea is supported further as the film goes on to engage with the notion that even the

memories belonging to a healthy mind are inauthentic, as Tess reminds Jon, with reference to the work of philosopher William James: 'It's been confirmed scientifically that memory is not like a well that you dig into. When you remember something, you remember the memory, you remember the last time you remembered it. Not the source, the source is always getting fuzzier, like a photocopy of a photocopy. It's never getting fresher, clearer. So, even a very strong memory can be unreliable, as it's always in the process of dissolving'.

Walter Prime's observations and reminders are also figured as contributing to Marjorie's physical well-being. Early in the film, Walter Prime observes that there are no dishes to be cleaned and deduces that Marjorie has not eaten, so he gently persuades her to eat a spoonful of peanut butter despite her lack of appetite, which she owes to the various medications that she is prescribed. Marjorie's consumption of the peanut butter takes place whilst Tess and Jon are out for a walk on the beach, suggesting the convenience of Walter Prime, who can be there for Marjorie all of the time and alleviate Tess and Jon from some of the responsibilities of her care, which can become intensive and burdensome for family and friends (Hooper 2023, 156). Indeed, as Walter Prime tells Marjorie, 'I'll be here whenever you need me. I have all the time in the world'. When Tess and Jon return home they are surprised that Marjorie has eaten the peanut butter, with Tess referring to it as a 'small miracle', and telling Jon that Marjorie might now be 'succumbing to my campaign'. Jon instead states that Marjorie is, in fact, listening to Walter Prime, the implication here being that Walter Prime's perpetual gentility and patience is a more effective intervention than Tess's aggressive approach, suggested by her own use of the words 'succumb' and 'campaign', and stems from the fractious relationship that she has had with Marjorie throughout her life. Indeed, later in the film, we see Tess lose her patience with Marjorie after finding a bible that Marjorie accepted from live-in carer Julie, despite Marjorie often telling Tess that God does not exist, the confrontation resulting in Marjorie involuntarily urinating.

In comparison with *Her* and *Zoe*, *Marjorie Prime* draws upon the romantic-drama's charismatic and handsome male hero as further endorsement for the possibility and potential of human-AI relations, but instead, this is achieved through the characterisation of the technology itself, through the AI hologram of Walter Prime. In the film, we come to understand that Marjorie's acceptance of Walter Prime is intensified by the fact that he is a facsimile of Walter when he was much

younger, stated to be in his thirties within Jordan Harrison's original play, the age that Marjorie found Walter most attractive (2016, 6). Not only does Walter Prime's relative youth encourage Marjorie to be playful and flirtatious with him – to the disapproval of Tess – but, it also enables Marjorie to fondly recall much earlier memories of her intimate relationships before her 'best lover' Walter, including Jean-Paul, a French-Canadian tennis pro, whom Marjorie allegedly rejected for Walter. For the audience, Marjorie's heightened affinity for Walter Prime through his resemblance to a more youthful Walter is translated and understood through Walter Prime's befitting portrayal by Hollywood actor Jon Hamm, foremostly known for his role as the charismatic Don Draper in AMC's *Mad Men* (2007-15), a television series set in a 1950s Manhattan advertising agency and known for its nostalgia and retro appeal. Indeed, Hamm's attractiveness as a means of promoting the AI hologram technology is suggested by Lodge (2017), who describes Walter Prime as 'a simulated personalized digital projection of a fully sentient human being, here fashioned as a younger version of Marjorie's late husband Walter (a typically dashing Jon Hamm, giving holograms everywhere a good name…)'. Similarly, David O'Shaughnessy (2017) writes, 'Jon Hamm as a live-in hologram to keep you company? Sign us up', describing him as the 'handsome hologram of your dreams'.

Whilst seeming to be an effective complementary component of Marjorie's dementia and end of life care, *Marjorie Prime* accepts that its imagined Prime technology might not be universally suitable or favourable, and should be thoroughly considered on a case-by-case basis. This reflects broader theoretical views of the ethics of care, of which there is no one-size-fits-all approach, 'care is situational; it is context and site specific; its ethicality and success dependent on the particularities of the agents involved' (DeFalco 2022, 290). As Hooper states, Marjorie's daughter Tess is *Marjorie Prime*'s 'chief sceptic' of the Prime technology (2023, 165). Indeed, this is evidenced by Tess's first line of dialogue in the film: 'I still don't like it…the Prime'. Tess negatively views Walter Prime as pacifying Marjorie as though she were an infant. Jon sees no problem with this, reminding Tess that Marjorie often wakes up not knowing where she is, and reasons that Walter Prime is more beneficial to Marjorie than watching television and that companionship is paramount for Marjorie. Tess is also uncomfortable with Walter Prime's hologram form, his ability to quietly appear and disappear without notice visibly disconcerts her, and she also finds there to be something perverse about his particular resemblance to her

father in his youth, telling Jon, 'It bothers me that you are helping it to be some fountain of youth version of my Dad'. However, Tess's most significant issue with Walter Prime is the sense of jealousy that she feels towards him, believing Marjorie to be nicer to Walter Prime than her, adding further strain to their already fractious relationship, which stems from the way in which Marjorie dealt with the suicide of her young son Damian, revealed in a conversation between Jon and Walter Prime, with Jon telling Walter Prime that Marjorie did not once speak about Damian after his death, and even hid all photos of him. Tess's incompatibility with the Prime technology is further underscored when Marjorie finally passes away and is replaced with Marjorie Prime to help Tess work through her grief. Although Tess attempts to converse with Marjorie Prime, the technology has no therapeutic benefit for her, and arguably even intensifies her grief, with Jon eventually revealing to a Prime version of Tess that the original Tess killed herself whilst they were on a trip to Madagascar, around a year after she began her sessions with Marjorie Prime.

Marjorie Prime, therefore, engages with the often polarised views of emerging real-world AI technologies, particularly as companions. Marjorie's positive experience with Walter Prime reflects the more optimistic views of AI companion technologies, such as those aforementioned from McArthur and Twist (2017) and Devlin and Belton (2020), who particularly reason their potential for vulnerable groups of people. On the other hand, Tess, who Jon tells Tess Prime is 'suspicious of technology', represents concerns that are reminiscent of Turkle's critical views observed in *Alone Together: Why We Expect More from Technology and Less from Each Other* (2011). For instance, Tess's suggestion that Marjorie is pacified, and therefore, infantilised through the Prime technology, draws significant parallels with Turkle's view of the celebration of early AI companion technologies as 'an emotional dumbing down, a wilful turning away from the complexities of human partnerships' (2011, 6). Turkle's main argument is that we are living in a 'robotic moment', and she seems to find the serious willingness of some people to 'consider robots not only as pets but as potential friends, confidants, and even romantic' highly disconcerting, 'the performance of connection seem[ing] connection enough' (2011, 9). As van Oost and Reed also argue, a reliance on AI companion technologies has the potential to disturb, break down close human relationships, and alienate vulnerable end-users from vital human contact (2011, 13-4). One such example of this observed within Turkle's research is the introduction of

AI companion robot 'My Real Baby' to nursing home resident Edna, whilst she was visited by her young great granddaughter: 'When the team arrives at mid-morning, Edna is focused on her great granddaughter […] after about half an hour, we give Edna My Real Baby, and her attention shifts. […] Amy tries to get her great grandmother's attention but is ignored […] once coupled with My Real Baby, Edna gives the impression of wanting to be alone – "together" only with the robot' (2011, 117).

Speaking more specifically of real-world technologies that have a degree of semblance to the Primes imagined in *Marjorie Prime*, VandenBosch writes that, 'while some viewers might mock, or patiently humor, the science fiction-like nature of the technology assumed in [*Marjorie Prime*], it turns out that an early version of holographic humans interacting with real humans is already in place' (2018, 402). In particular, VandenBosch draws attention to The Illinois Holocaust Museum and Education Center in the United States, which unveiled an exhibition in 2017 featuring thirteen Jewish survivors of the Holocaust as 'holograms' (2018, 402). Filmed in '360 video with more than 100 cameras' these survivors 'were asked around 2,000 questions each' and their digital copies can answer questions 'in real time about what their Holocaust experience was like' (Billock, 2017). The identified benefits of this exhibit lie in its preservation and immortalisation of the survivor's testimonies, which can be used to education future generations about the Holocaust (Billock, 2017; Isaacs, 2017).

Other real-world early forms of technology with a semblance to the Primes, which 'enhance the creation of digital immortality', however, are met with staunch criticism (Savin-Baden and Burden 2019, 87). Savin-Baden and Burden describe digital immortality as the 'growth of personality capture and levels of brain simulation as well as computationally inspired life after death', noting companies Eter9, Lifenaut, and Eternime as 'purporting to be offering chat-bot based versions of digital immortality' (2019, 88). They also add that such technologies are unnerving ruptures that challenge ontological questions about life, death and the afterlife (Savin-Baden and Burden 2019, 101). Of greater present concerns, however, are 'hologram' projections created in the image of dead celebrities, '2D illusions that use CGI animation and a special screen to create the sensation of liveness', intended for posthumous performances (Arnold 2015, 179). Arnold, for example, discusses American rapper Tupac Shakur, who died in 1996, but was 'resurrected' via this

method for a posthumous performance at the Coachella music festival in 2012 (2015, 179). Whilst Arnold notes that this form of technology is expensive and relies on the audience's suspension of disbelief, they also label it a 'bizarre' and 'ghoulish' form of entertainment that is a 'metaphor for artistic and economic corruption' (2015, 179-84). Arnold also notes that Shakur's posthumous performance extended notions of the rapper as more profitable dead than alive, indicating the exploitative nature of these technologies (2015, 184). Indeed, the problem with such technologies has been highlighted by Tarantola (2019), who has reported on an abandoned posthumous Amy Winehouse tour, which was viewed by some as a distasteful 'cash grab by her estate', whilst a posthumous Roy Orbison tour was labelled 'inauthentic' and an exploitation of a 'dead singer who could not provide consent'.

Despite capturing an essence of the polarised view of emergent AI companions and digital immortality technologies in the real-world, ultimately *Marjorie Prime* veers towards a quiet, hopeful anticipation of their arrival in the future. This is demonstrated through the film's final interaction between a human and a Prime, one last romanticisation of the technology for the audience to take away with them. Whilst Jon – the Primes' biggest advocate throughout the film – comes to have some reservations about his own use of Tess Prime to come to terms with the trauma of Tess's suicide, he nevertheless continues to view it as a valuable conduit between his granddaughter, poignantly named Marjorie (Hana Colley), and Tess.[61] Tess Prime facilitates a way for Marjorie to meet Tess, to converse with her, and find out what she was like, an otherwise impossible opportunity, unachievable to the same extent through photographs, home videos, and the memories belonging to others. This moving moment paves the way for the aforementioned closing scene of the film, in which Marjorie Prime advises an embrace of technology's inevitability, to not be intimidated or disturbed by it, but rather to be friendly with it, a final underlining of *Marjorie Prime*'s unassuming yet thought-provoking advocacy for the possibility of future human-AI intimacies.

Conclusion

[61] Jon's advocacy for the Prime technology can be observed through the excited way in which he explains the capabilities of them to Tess at the beginning of the film, and also later, through the sense of gratification he seems to experience when programming Walter Prime with new memories for Marjorie.

In postmillennial cinema, imaginations of AI, including in the form of SSAs, have continued to gradually escape the exclusive purview of SF, making inroads in a number of other (sub)genres of film, including the romantic-drama. Whilst the films *Her*, *Zoe*, and *Marjorie Prime* contain SF themes and elements, these operate on a secondary level, with the romantic-drama's passionate love story foregrounded. This foregrounding of passionate love stories is underscored by these films' mise-en-scene and soundtracks, their soft lighting, warm colour palettes, and melancholic scores working in accordance with the conventions of the romantic-drama. *Her*, *Zoe*, and *Marjorie Prime'*s significant inroads into the romantic-drama bring the typically SF concept of AI to alternative demographics, including female and older audiences, who are traditionally considered as less likely to watch SF. Additionally, these inroads into the romantic-drama also produce AI narratives that are markedly different from those that are typically sensational and apocalyptic, often observed within SF, and outlined by Recchia, and therefore, facilitate the concept of AI's vitality and longevity within cinema. Indeed, *Her*, *Zoe*, and *Marjorie Prime'*s engagement with the passionate love story and conventions of the romantic-drama produce thought-provoking AI narratives that ultimately endorse the future possibilities of human-AI intimacies. *Her*'s and *Zoe*'s favourable depiction of the future possibilities for human-AI intimacies are conveyed through the positive figuration of the human that embarks on a relationship with an AI in the imagined form of SSA. Whilst there are long-standing negative stereotypes of men 'attracted' to technology as geeky or nerdy scientists, *Her* and *Zoe* instead more positively portray Theodore Twombly and Cole Ainsley as hipsters, whose relative social-acceptance and attractiveness, in comparison with the geek/nerd, brings them closer to the romantic-drama's conventional charismatic and handsome male hero. What this achieves is a progressive move towards normalising digisexualities as alternative forms of sexual identity, something which is not yet afforded to early pursuers of human-AI intimacies in the real-world, which can be ascertained by their continued negative framing in the media as abnormal, freakish outcasts. This positive orientation, however, also reflects the broader refiguration of men working in real-world science and technology in the postmillennial era, who have escaped negative geek/nerd stereotyping, emerging as desirable celebrity figures, as technology continues to advance and is taken up in the mainstream.

Alternatively, *Marjorie Prime* endorses the future possibilities of human-AI intimacies through the romantic-drama's prominently recurring themes of nostalgia and memory. This endorsement is most potent within the first half of the film, in which a heightened sense of sympathy is invited towards octogenarian Marjorie, who is experiencing the debilitating symptoms of dementia, including the tragic loss of key memories of her relationship with husband Walter, who died 15 years previously. The audience's heightened sympathies for Marjorie work towards the romanticisation of *Marjorie Prime*'s imagined AI hologram Prime technology, rendering it more palatable as a therapeutic intervention within Marjorie's dementia and end of life care, alongside the collaborative care she receives from her family and live-in human carer. Walter Prime, who takes the form of Marjorie's now-dead husband Walter at the point in their lives in which she found him most attractive, is able to preserve Marjorie's fading memories and regale them to her. As they pore over the details of Marjorie and Walter's relationship, questions of authenticity are raised with Walter Prime's acceptance of Marjorie's reverie embellishments. Ultimately, however, this narrativization is framed within *Marjorie Prime* as a means for Marjorie to hold onto the core of a memory and to stimulate her into animated collaborative dialogues with Walter Prime. *Marjorie Prime* also draws attention to other possible benefits of its imagined Prime technology, not only can Walter Prime remind Marjorie to eat, but he is seemingly programmed with a perpetually calm, gentle, and patient demeanour that can cater to Marjorie at all hours of everyday.

The film, however, acknowledges its imagined Prime technology as complementary to human interventions within Marjorie's care, rather than a total replacement for it, and also acknowledges that the therapeutic use of AI might not be universally suitable or favourable. This is conveyed through the characterisation of Marjorie's daughter Tess as highly sceptical of the Prime technology. Although Tess is eventually willing to try Prime technology herself to ameliorate her grief in the wake of Marjorie's death, this is ultimately to little effect, with the revelation that Tess kills herself later in the film. With this, *Marjorie Prime* engages with the polarising views of emerging AI technologies in the real-world, which have some semblances to the film's imagined Prime technology. Whilst some find the notion of AI companions a threat to human contact and relationships, others see them as facilitating inclusivity, particularly for vulnerable individuals who, for various

reasons, find human contact and relationships challenging. Similarly, whilst some view the emerging real-world technologies pursuing digital immortality as creepy, distasteful and exploitative, other draws attention to its immersive educational potential, with its ability to preserve key moments in history through first-hand testimony.

Despite this, *Marjorie Prime* remains quietly hopeful and anticipates the future possibility of a technology like the Primes. This is conveyed through the film's final poignant interaction between a human and a Prime, in which Tess and Jon's granddaughter Marjorie, is afforded the otherwise impossible opportunity of meeting her grandmother Tess through Tess Prime. As Marjorie Prime informs its audience, the advent of new technologies is inevitable, and an opportunity to embrace, we should be friendly with, rather than scared, of it.

As highlighted in the introduction of this chapter, feature films tagged 'artificial-intelligence' on IMDb currently span 26 different (sub)genres. This chapter has focused on the close textual analysis of case studies from just one of these categories, which points towards the wealth of further research that could be conducted in this area. What, for example, are the effects of the concept of AI making inroads into the comedy genre?

This chapter has demonstrated that genre is an aspect of film that is important in the representation of AI, affecting the way in which AI is depicted and understood, with the potential to draw alternative audience demographics that might not be typically attracted to SF in its more pure forms. As AI technologies continue to develop in the real-world, so too will they remain present within popular culture and media discourses. To ensure the vitality and longevity of AI narratives in cinema, filmmakers may wish to consider the near infinite combinations of (sub)genres, which have the potential to produce AI narratives that are highly original, engaging and thought-provoking for all.

Chapter Three

Scarlett Johansson and Stardom: The 'Ideal' Female Sentient Synthetic Anthropomorph in Popular Postmillennial Science fiction Film?

Between 2013 and 2017, Hollywood actor Scarlett Johansson starred in four unrelated SF films in which she portrays variations of a female-gendered sentient synthetic anthropomorph (SSA). The first of these was Jonathan Glazer's *Under the Skin* (*UTS*) (2013), an adaptation of Michel Faber's 2000 novel of the same name.[62] Within the film, Johansson's character – who is given no name but widely referred to as 'the Female'– is a 'mysterious entity' that appears in the guise of a young woman (Loreck 2019, 165). Although it might seem most straightforward to label the Female as an 'alien', as several scholars have done previously, this designation neglects the film's suggestions that the character might also be a synthetic creation (see, Osterweil, 2014; Hettinga, 2016; Dinnen and McBean, 2017; Palmer and Warren, 2019). [63] As Loreck contends, 'it is not at all clear whether [the Female] is organic or mechanical – she may be an automaton of alien manufacture' (2019, 169).[64] The Female's artificiality is most clearly indicated in the opening scene of *UTS,* which depicts the character's 'manufactured birth', and is described by Massimi as an 'enthralling morphing of circular halos of blue light and black volumes into a human eye […] while the iteration of phonetic exercises superimposing Mica Levi's eerie soundtrack encapsulates the complexity of language-learning processes at a condensed pace' (2019, 145). Moreover, as the film progresses, the Female's 'repetitive actions and behaviours lack the spontaneity of human behaviour, creating instead the impression of a machine executing algorithms' (Loreck 2019, 173). However, the Female's gradual acquisition of self-

[62] Glazer's film loosely follows the plot of Faber's novel in which an extra-terrestrial female named Isserly is sent to Earth to kidnap hitchhikers, who are processed as meat and are sent back to her home planet, where human flesh is considered a delicacy. My analysis within this chapter, however, is focused on Glazer's film adaptation.

[63] The film's producer James Wilson also refers to the Female as 'synthetic' and 'not real' in *Under the Skin*'s production notes (Film Nation Entertainment, n.d.)

[64] The ambiguity of Isserly within Faber's original novel has also been suggested by Dillon (2011), who notes that she is 'a member of a race of what the text calls "human beings" who come from an ecologically ravaged, strictly class-divided planet' and are physically resemblant of something between a cat, dog, and llama. Isserly, however, has been surgically altered, she undergoes a radical metamorphosis that 'enables her to pass on Earth as what the reader understands to be a human being a species renamed "vodsels" in the text, this surgery involves the 'insertion of a metal rod in her spine so she can bear weight on only two legs, the removal of her sixth finger on each hand, and the replacement of her teats with false breasts modelled on those of a glamour model' (Dillon, 2011).

awareness and empathy for her victims in the latter half of the film, suggests the possibility that she possesses a form of subjectivity (Loreck 2019, 173). Together, therefore, these observations and interpretations qualify the Female as a form of female SSA.

Also in 2013, Johansson provided the voice for the female operating system (OS) Samantha in Spike Jonze's *Her.*[65] Whilst Samantha's ability to think and express emotions are indicative of sentience, her disembodiment and communication with her user Theodore Twombly (Joaquin Phoenix) through a series of hardware attests to her synthetic nature. Despite her disembodiment, Samantha is anthropomorphic, with Johansson's voice in particular 'ensuring that the film's sonic register is given sensual flesh' (Redmond 2019, 209).

In 2014, Johansson portrayed the titular character in Luc Besson's *Lucy*, a woman who develops superintelligence after absorbing a large quantity of a synthetic nootropic drug, CPH4. Similar to *UTS*, *Lucy* presents a more complex form of female SSA, as her absorption of CPH4 transforms her 'normal' human mind and body entirely. This transformation is neatly described by Dinnen and McBean, who articulate that, 'Lucy becomes the best human but, in this process also ceases to be human. Her cells, to preserve their own immortality obliterate the human body that holds them back and reform as a bio-machine […] by the end of the film, the human face is obliterated and what remains this time is definitely an interface: the knowledge Lucy has accrued is "downloaded" as a black organic plastic mass – a computer that will have been' (2017, 131). This speaks to Lucy's former level of sentience and anthropomorphism as a human, as well as her newly acquired synthetic form that affords her full use of her cerebral capacity.[66]

Finally, in 2017, Johansson portrayed Major Mira Killian/Motoko Kusanagi in Rupert Sanders' live-action adaptation of *Ghost in the Shell* (*GITS*), based on Masamune Shirow's 1989-91 manga comic series of the same name. After an apparent cyberterrorist attack which killed her parents and left her biological body damaged beyond repair, Major's brain is integrated into a synthetic anthropomorphic

[65] Whilst the previous chapter of this thesis considered *Her*'s inroads into the romantic-drama, it can still be categorised as SF, which remains one of its listed categories on the IMDb database. Therefore, it remains relevant to the focus of this chapter.
[66] *Lucy* riffs on the falsehood that human beings only use ten percent of their cerebral capacity, for which the film has been criticised (Orr, 2014).

body or 'shell', thus retaining her sentience, albeit with altered memories, whilst also gaining a number of superhuman abilities.

To the best of my knowledge, there is not another actor who has portrayed multiple different female SSAs in SF cinema, and in such close succession. Johansson's unique repeated casting in these similar roles across these films is indicative of a recognition of Johansson as an 'ideal' representative of the female SSA in popular postmillennial SF cinema. As Osterweil states, 'Johansson is the favourite choice of late to play inhuman characters' (2014, 46). This is echoed by McPherson (2014) who writes that, 'like John Cusack in adolescent/young adult rom-coms or Meg Ryan in adult rom-coms or Arnold Schwarzenegger in action blockbusters, there are a host of things that make Johansson a natural fit for science fiction'. Similarly, when discussing Johansson's 'many incarnations' as an actor, Stevens, Loreck and Monaghan list 'cyborg' alongside 'ingenue', 'sex symbol', and 'muse' (2019a, vii).

This chapter intends to contribute towards understandings of where this regard of Johansson might emerge from, and also to comment upon the potential significance of Johansson's repeated casting as female SSAs. I contend that this recognition of Johansson as an 'ideal' representative of AI in the imagined form of the female SSA stems from a long-standing media discourse surrounding Johansson's 'exceptionality' as a female Hollywood actor and celebrity, specific and unique aspects of her understated-yet-complex performance style, and a number of previous roles as 'wandering ingenue' and 'femme fatale' character types. Moreover, whilst Johansson and her star persona might function as a perfect metaphor for the female SSA from a cinematic standpoint, I also contend that the repeated casting of Johansson in these similar roles is perpetuating particular notions of how AI in fiction and reality – even that which is disembodied – should look and behave in ways that are largely problematic for women. This latter point in particular speaks to the originality of this chapter's intervention within this area of research.

Whilst Stevens, Loreck and Monaghan's edited collection *Screening Scarlett Johansson: Gender, Genre, Stardom* (2019) discusses the trajectory of Johansson's career from child actor and Marvel's Cinematic Universe's (MCU) first female superhero to leading star of SF, it is only a short section of their initial overview chapter that collectively considers *UTS, Her, Lucy,* and *GITS* with any depth, putting forward the case that Johansson has entered a parodic phase of her career as she

reflexively deconstructs her star persona through these films (2019b, 15-17). Other papers within the collection make connections between various combinations of Johansson's characters from these four films, however, there is not an attempt to unite them all, and in quite the same manner as I have here, as female SSAs. Whilst Redmond's contribution to the collection draws perhaps the closest parallels with my discussions of Johansson's repeated casting as female sentient SSAs as problematic in relation to gender, Redmond's focus is instead on race, and how Johansson's 'idealised whiteness' is frequently framed as an 'alien and alienating force, albeit within narratives that ultimately privilege her and her idealisation' (2019, 207).

Elsewhere, Matthews criticises *UTS, Her, Lucy,* and *Ghost in Shell* from a posthumanism perspective, arguing that the ultimate erasure of Johansson's 'alien, machine, mutant, or cyborg' characters within these films 'personify man's anxiety about the extinction of his humanist self' (2018, 166-70). Again, Matthews' paper offers a complementary perspective on the same subject matter as my own chapter, albeit with an alternative focus on threatened masculinity in the posthuman era, with Johansson's characters in these films operating as 'cautionary tale[s] for women and a call to arms for men' (2018, 181). Whilst my chapter draws upon this work, it is ultimately more focused on what these films mean for women and their representation within SF cinema.

As is atypical for younger female stars, Johansson has been the focal subject of several other varying studies in recent years, mostly emergent from star and celebrity studies (Stevens, Loreck and Monaghan 2019a, viii). For example, Tunbridge's paper focuses on the 'haptic' nature of Johansson's voice, and how it 'conveys a sense of physical proximity' (2016, 139). Lipner and Maurer have argued that Johansson's characters within three distinct Woody Allen films, *Match Point* (2005)*, Scoop* (2006), and *Vicky Cristina Barcelona* (2008) can actually be read as a 'metamorphosis of one evolving female heroine as exemplified by Johansson's portrayals', which I would contend partly speaks to a consistency within Johansson's performances that is imbued by the potency of her overarching star persona (2021, 327). Moreover, despite Johansson's Eastern European Jewish, Danish, and Swedish descent, Batsakis has also examined Johansson as having 'become somewhat of a cultural Italian icon' through her 'cinematic collaborations with two Italian-American filmmakers and her role as ambassador for the legendary Italian fashion

house Dolce & Gabbana' (2018, 279).[67] In a way, this draws connections with the whitewashing criticisms Johansson faced as a white woman cast in the role of a widely understood to be Japanese character in *GITS.* The emergent audience-made memes surrounding this controversy, which provides evidence for audiences' anti-whitewashing response to the film and Johansson's casting within it, have been analysed at length by both Rendall (2021) and Wald (2023).[68]

As outlined in this thesis' introduction, this chapter also employs a star studies approach, specifically a star-as-sign approach that combines semiotic analysis with sociology and ideological criticism, which is foremostly associated with the seminal work of Dyer (Watson 2012, 169). This approach involves close analysis of a star's onscreen performances, in conjunction with other texts that publicise and promote the star in question (McDonald 2000, 2). In particular, this chapter takes as its starting point a reading of stardom initially put forward by Morin and popularised by Dyer that centres on the idea of stars as 'seem[ing] to be of a different order of being' (1998, 43). This is particularly pertinent in the case of Johansson, who has frequently been framed in popular culture by discourses that seem to draw upon the iconographies of SF, even before her entry into the genre, establishing a conspicuous relationship between Johansson and the often superlative nonhuman inhabitants of these fictional stories, and thus, elevating her qualification for such roles. This chapter is also informed by Dyer's theorisation of a star's performance style, which is specific to that star and 'through its familiarity will inform the performance she or he gives in any particular film. The specific repertoire of gestures, intonations, etc. that a star establishes over a number of films carries the meaning of her or his image just as much as the 'inert' element of appearance, the particular sound of her/his voice or dress style' (1998, 142). The latter section of this chapter, which explores the problematic implications of Johansson's repeated casting as female SSAs, is also informed by the notion of stars as performing 'representational work' and how their 'bodies act as key signifiers of cultural beliefs' (McDonald, quoted in Dyer 1998, 180-194). As Dyer contends, stars have multiple

[67] Johansson's ancestry is outlined by Stevens, Loreck and Monaghan (2019b, 4-5).
[68] The subject matter of Batsakis's (2018), Rendell's (2021), and Wald's (2023) papers begin to point towards Johansson's apparent qualification for roles as female sentient synthetic anthropomorphs in SF. In a similar way to the female SSA, who is a liminal entity that calls forth questions around the binaries between the human and nonhuman, Johansson seemingly confuses national and ethnic boundaries. This draws parallels with what Redmond has labelled as Johansson's 'alienating whiteness', as previously mentioned.

meanings and affects, they are read in different ways by different groups of people, and therefore, analyses of stars should not intend to 'determine the correct meaning and affect, but rather to determine what meanings and affects can legitimately be read in them' (1998, 3). Indeed, what follows is but one interpretation of Johansson and her repeated casting in SF cinema as a female SSA, which overall aims to draw attention to the largely overlooked ways that a particular actor and aspects of their star image can affect imaginations of AI in screen fiction.[69]

The 'Exceptionality' of Scarlett Johansson

Particularly within the entertainment industry, exceptional attractiveness is considered a valuable commodity and held in high regard. As Shingler states, film stars are 'objects of beauty and physical perfection', and provide audiences with feelings of 'pleasure', admiration', and 'fascination' (2012, 3). Shingler adds that film stars often possess similar attributes that are contributory to their level of success, 'most notably, charisma, expressivity, photogenic looks, mellifluous voice, attractive bodies, fashion sense and style' (2012, 66). These shared qualities are mostly concerned with appearance, and the way that a star is presented. Similarly, Basinger leads her work within the field of star studies with the contention that 'a star has exceptional looks', a statement that literally precedes that of their 'outstanding talent' (2007, 3). According to Stevens, this is particularly the case for female stardom, where 'beauty, rather than talent, has been framed as most necessary' (2019, 47).

In 2014, 'Scarlett', a short story published in the *Literary Review,* told of a young woman named Charlotte who transforms into Scarlett Johansson after discovering that her boyfriend is obsessed with the Hollywood actor's voice and looks, even dreaming that Charlotte is Scarlett. Charlotte begins her transformation by assuming Scarlett's name, not only amongst friends and family, but also on bills and credit cards, and her transformation is complete when she attends film premieres and interviews as though she were actually the actor (Hill 2014, 112-4). Hill's short

[69] To the best of my knowledge, research in this area is lacking. This is likely because, as Stevens, Loreck and Monaghan state, most actors have 'not performed the role of the cyborg more than once' (2019b, 16). Whilst certain aspects of an actor's particular performance might be commented upon in analyses of fictional artificial entities on screen, I do not believe that I have seen this connected extensively to the wider context of an actor's star persona. However, this could form an interesting and valuable avenue for future research.

story presents a literal scenario in which men want to be with Johansson and women want to be her, and speaks to Johansson's 'renown as a superlatively beautiful and desirable individual, a feature that has been a central part of her image for over a decade' (Stevens, Loreck and Monaghan 2019a, v). Indeed, this exceptional attractiveness and desirability is further illustrated by Johansson's frequent top-position within several annual polls in men's magazines that ranked the appearances of female celebrities since the mid-2000s. In 2010, Johansson was *GQ* magazine's 'Babe of the Year'; she was the only woman named as *Esquire* magazine's 'Sexiest Woman Alive' twice; and, since 2006, she featured in the top ten of *FHM*'s '100 Sexiest Women' list six times. (Sachs, 2010; Jacobs, 2006; Chiarella, 2013). As Stevens, Loreck and Monaghan state, however, Johansson has also secured her place within women's magazine pages with numerous brand endorsements for high-end fashion and beauty brands, such as Dolce & Gabbana (2019b, 2).

Johansson's attractiveness and desirability has also prominently featured in her critical reception and further cements her 'sex symbol text' (Stevens, Loreck and Monaghan 2019b, 9).[70] For example, in her profile by *The New Yorker,* Johansson's superlative physical appearance is defended as a central aspect and draw to her performance in the 2008 film *Vicky Cristina Barcelona*: 'Why should we watch Johansson with any more attention than we pay to other actors? When did moviegoers come to realize that she was worth the wait, in gold? Well, there was Woody Allen's *Vicky Cristina Barcelona*, which was loaded with physical gorgeousness, and lit with suitable fervour. There was one scene, at a champagne reception in a Spanish art gallery, where Johansson was, indeed, gilded to behold. She seemed to be *made* from champagne' (Lane, 2014). Elsewhere, a review for Marvel's *Iron Man 2* (2010) comments that Johansson only seemed to be there 'to up the film's booty quotient' and 'gets nothing to do but pout' (Robey, 2010). Despite this critical perspective on Johansson's first performance as the superhero Black Widow, her attractiveness and desirability remains front and centre of the review, with an emphasis on her body and its most distinctive parts.

Indeed, there are several of Johansson's films that 'establish the importance of her body and sex appeal as defining features of her star image. She is regularly

[70] The term 'sex symbol text' refers to the working together of various media texts that 'manufacture and manage a celebrity image that derives its dominant meaning and affect from sex' (Scheibel 2013, 5).

centred within the frame as someone to be looked at and lusted after' (Stevens, Loreck and Monaghan 2019b, 8). According to Stevens, Loreck and Monaghan this is most prominent in Johansson's characterisation as Barbara in Joseph Gordon-Levitt's 2013 film *Don Jon* (2019b, 9). Indeed, within the first fifteen seconds of *Don Jon*'s fifty-five second trailer, Barbara features front and centre in eight out of eleven shots (Don Jon Movie, 2013). This is more than the film's titular character played by Gordon-Levitt, who is clearly identifiable in only three shots during this same time period; one in which he is depicted lusting after Barbara's body without her knowledge, another in which he passionately kisses her, and a final shot in which he is depicted in close proximity to her on a cinema date. These first few seconds of *Don Jon*'s short trailer advertises and fetishizes Johansson's body as the film's main attraction, even conveniently breaking it down into her most notable physiological parts for audiences, showcasing her green eyes, blonde hair, distinctive full lips, and breasts (Stevens, Loreck and Monaghan 2019b, 8-9).

Generally speaking, therefore, Johansson's physical appearance, often framed as exceptional and highly desirable by her on screen roles, critical reception, and wider media discourse, contributes towards her qualification for starring roles across numerous film genres. Johansson fascinates and captivates, and when aiming for box office draw and bankability, might therefore appear on any astute filmmaker's talent wishlist. Indeed, Johansson has frequently appeared as the highest-paid actress on *Forbes'* 'Celebrity 100' list, further evidencing her mainstream popularity, and recently was one of *Time* magazine's '100 Most Influential People of 2021' (Connley, 2019; Curtis, 2021).

However, I would argue that Johansson's exceptionality relates more specifically to her qualification for roles as female SSAs within the SF genre.[71] As Dyer contends, 'stars are always the most something-or-other in the world – the most beautiful, the most expensive, the most sexy. But because stars are "dissolved" into this superlative, are indistinguishable from it, they become superlative, hence they seem to be of a different order of being, a different "ontological category"' (1998, 43). Johansson has, indeed, been frequently recognised as the most beautiful, and

[71] As Stevens, Loreck and Monaghan state, there are several actors that have portrayed artificial women, who have also had additional careers as fashion models, for example Sonoya Mizuno who plays robot Kyoto in *Ex Machina* (2015), and Sean Young who portrayed replicant Rachael in *Blade Runner* (1982), thus 'securing the correlation between beauty and artificiality' (2019b, 16).

been considered as one of the most influential. Where Johansson's stardom is concerned, there are a number of 'mosts'. Dyer's argument draws significant parallels with the ways in which the 'posthuman' figure is represented within the SF genre, including SSAs, who literally belong to different ontological categories that often render them superlative to 'normal' humans.[72] This is also suggested by Redmond, who refers to stars as 'mythological constructs' (2019, 204). As Di Filipo explains further:

> A baseline human being – born today in pretty much the identical state that he or she would have manifested when plopped into the world some 400,000 or so years ago, at the dawn of our species – is a creature of well-established capacities and abilities. Within the entire range of human physical and mental powers, we certainly do find great variation. But the extreme peaks and valleys of the human condition are well mapped […] even long before science quantified and charted somatic and mental functioning, the average individual was quite painfully aware of all the things he could not do. It is precisely this galling familiarity with humankind's inherent limitations […] that has long inspired dreams of exceptional powers, of near-magical abilities […] with the birth of SF, a mode of writing that allowed these dreams to achieve plausibility in a storyspace that reflected actual scientific progress and potential, our species finally developed a venue for exploring these age-old fantasies in hard-edge forms. Consequently, the map of human possibilities has exfoliated immensely (2012, 156).

Although Di Filipo writes specifically of the representation of the human, other posthuman entities imagined in SF, especially those that are anthropomorphic, form a larger part of this desire for exceptionalism. For example, in *Avatar* (2009) the alien Na'vi race are superlatively beautiful, statuesque, and ethereal in comparison to

[72] I am employing both Di Fillipo's and Ferrando's respective delineations of the 'posthuman' here, resulting in a broad application of the term that considers both radical transformations of humanity into forms 'beyond human the baseline', as well as 'non-human life: from animals to artificial intelligence, from aliens to other forms of hypothetical entities related to the physics notion of a multiverse' (2012, 156-172; 2012, 10). Therefore, female SSAs come under this categorisation as posthuman.

baseline humans. In the films of the MCU, superheroes are the fastest, strongest, and most agile beings with extraordinary powers, not to mention that they are portrayed by some of Hollywood's most attractive star actors, including Johansson. And, in *Ex Machina* (2015) AI robots are made in the image of perfectly sculpted female bodies, and are able to outsmart their human counterparts. In the real-world then, where these extraordinary powers do not exist, a star such as Johansson, established as exceptional in her own right, is one of the *most* appropriate fits for the role of superlative entities within the SF genre, such as female SSAs.

This connection between the real-life star Johansson and fictional posthuman figures can also be observed within various commentaries on Johansson's star persona, which have often employed language and imagery commonly associated with SF that branch out beyond the word 'star', even before her notable performances within the genre. For instance, in an interview for *The Times*, Johansson is described as possessing 'starlet' and 'luminous' looks in addition to having a 'meteoric' rise in the public eye (Palmer, 2008). Similarly, when *Esquire* magazine awarded Johansson their 'Sexiest Woman Alive' title for a second time, she was described as an 'ascendant beauty' (Chiarella, 2013). *Roger Ebert*'s review of romantic-comedy *In Good Company* (2004) noted Johansson's performance as having a 'gravitational pull of quiet fascination […] she creates a zone of her own importance into which men are drawn not so much by lust as by the feeling that she knows something about life that they might be able to learn', an odd foreshadowing of Johansson's role as the mysterious and enigmatic Female in *UTS,* with a plot that literally sees her lure her male victims to some form of otherworldly dimension before killing them (Ebert, 2005). Following the release of *UTS,* an interview with Johansson by *The Denver Post* (2014) even went so far as to run with a headline that read: 'Scarlett Johansson says her life parallels that of her "Under the Skin" character', but gave no explicit example of this, other than perhaps Johansson's desire to remain incognito in public. The article, however, also references Johansson as having a 'creature' within her that emerged as she immersed herself in the Female's alien ritual of picking up drifters at the roadside (*The Denver Post*, 2014). These commentaries suggest, therefore, that Johansson's star persona is interpreted in popular culture in much the same way that various posthuman entities are characterised within the SF genre, elevating her qualification for roles as female SSAs.

Redmond has made similar observations about Johansson's star persona, but instead describes how Johansson's flawless white skin and blonde hair have been marketed in advertising campaigns for Dolce & Gabbana as physical characteristics that 'seem to have divine origins, and which naturally produce a heavenly appearance' (2019, 205). According to Redmond, 'when a star image and idealised whiteness are combined, or brought together, in symbiotic union they construct a powerful narrative about privilege and belonging in the world, one that places or situates white identity at the apex of civilised and successful life. At the same time, however, this hyper-perfect conjunction renders the white star both unattainable immaculate, and as a consequence, essentially non-reproductive' (2019, 203). Redmond contends that this is acutely realised through Johansson's SF roles in *Her, UTS*, and *GITS,* since 'her whiteness is both accentuated and rendered a dangerous form of progeny' (2019, 204). Subsequently, Redmond articulates that Johansson has come to 'embody an alien and alienating form of whiteness even if its ontological power continues to hegemonically structure the films under analysis' (2019, 204).

Stevens also observes alienating aspects of Johansson's star persona, noting that 'moments of expressive blankness persist through Johansson's filmic and non-filmic work', highlighting Johansson's music video for her 2008 rendition of Tom Wait's 'Falling Down' as an example of this (2019, 44). As Dyer notes, 'a star will have a particular performance style that through its familiarity will inform the performance she or he gives in any particular film. The specific repertoire of gestures, intonations, etc. that a star establishes over a number of films carries the meaning of her or his image just as much as the 'inert' element of appearance, the particular sound of her/his voice or dress style' (1998, 142). The effect that Johansson's persistent blankness achieves is 'distanciation and a sudden awareness on the behalf of audience in the artificiality of her performance […] Johansson disrupts the typical performance of a Hollywood star, producing moments of alienation and dissonance that work against both the narrative coherence of her characters and the accessibility of her star persona […] creating a sense that her stardom, much like her acting, is always out of sync with more traditional mainstream star framings' (Stevens 2019, 44). Stevens' assessment of Johansson's performance style, which 'others' her from the norms of Hollywood performance, draws connotations with several iconographic SF characters, including the female SSA, who is inherently alienated from humans owing to their artificiality. Indeed,

Stevens concludes her analysis by drawing attention to the centrality of this alienating and distancing effect of Johansson's blankness in *UTS*, *Lucy*, and *GITS,* with roles as an alien, cognitively enhanced human, and cyborg who all 'lack, or lose, normative human emotions' (2019, 58). This 'distinctive quality of Johansson's idiolect' forms an important component of what enhances her credibility as the female SSA, employed to underscore her characters' differences from baseline humans 'adding layers of mystery and enigma' (Stevens 2019, 50).

UTS, *Her, Lucy,* and *GITS*, indeed, draw upon Johansson's exceptional star persona to convey the extraordinariness and otherness of the female SSAs that she portrays. In *UTS*, this emerges from the situation of Johansson as a high-profile Hollywood actor within the film's rural Scottish locations – this is odd, jarring, alien even, and therefore, gives audiences a sense of the Female's difference as a female SSA, without the use of visual effects until the film's conclusion. As Loreck adds, in *UTS*, Johansson 'uses the magnetism of her screen and public persona, our knowledge of her celebrity, to cement the sense of an otherworldly creature moving among ordinary men and women' (2019, 166). When the Female's Scarlett Johansson skin suit disguise is removed in the final scenes revealing her true form, Johansson's distinctive facial features are still perceptible underneath, and therefore, even under the skin Johansson *is* the extraordinary female SSA, she is literally inseparable from it.

Despite attempts to dress down Johansson's typical 'blonde bombshell' star image with a short black wig, *UTS* deliberately foils its own created disguise through displays of Johansson's body that are framed as exceptional. As director Glazer asserts, 'this is not Johansson as you might see her in a glossy magazine' (Film Nation Entertainment 2013, 5). Indeed, *UTS* was Johansson's first fully nude film role – a literal exception – which inevitably peaked curiosities around the film's release, speaking to the sheer desirability of Johansson's body (see, Corliss, 2014; Harman, 2014; Mulderrig, 2014). During these nude scenes, the allure of Johansson's body is used to convey the Female's own extraordinary seductive powers. It is seemingly her naked body alone that is able to lure and entrap her numerous male victims, who are so enchanted and beguiled by her that they fail to realise the imminence of their abject deaths. As Stevens, Loreck and Monaghan write of these reflexive scenes, 'because the role of the feminine seductress is enacted twice in the film— first by the alien (character), and then by Johansson

herself (star)—it becomes even more ostensive. *UTS* highlights how Johansson herself performs the role of hyper-feminine bombshell in her own extra-textual life and career. Hence, the film is a commentary on the performance of sexuality that Johansson has herself mastered' (2019b, 16). This duality, however, also underscores how Johansson's exceptional physiology acts as a shorthand for what Stevens, Loreck and Monaghan describe as 'posthuman marvellousness' (2019b, 16).

Contrastingly, *Her* playfully employs the exceptionality of Johansson through an unusual – if not, exceptional, for live-action cinema – erasure of her body from the entirety of the film, relying solely on her voice to portray the OS Samantha. To draw upon Chion, Samantha is an 'acousmatic' character in that she is heard but not seen by the audience nor the other characters within the film (1999, 18). Chion explains that an acousmatic presence is a 'special being' that possesses four powers 'ubiquity, panopticism, omniscience, and omnipotence' (1999, 21-4). In accordance with the acousmatic voice, Samantha is not only available to and heard by Theodore, but also to hundreds of other users of this OS technology, she can also see the worlds around these individual users and beyond, and her expanding capacity for knowledge infers the overall potency of her computational power.

However, Samantha's/Johansson's voice alone functions as a power itself, in its almost supernatural ability to convey corporeality and tangibility, despite her disembodiment. This is not altogether atypical within SF cinema. As Doane writes, not even the artificial computer seems 'to be capable of representation outside of a certain anthropomorphism', citing *Battlestar Galactica'*s (1978-9) computer Cora, who despite being 'deprived of mobility and the simulacrum of a human form, is given a voice which is designed to evoke the image of a sensual female body' (1980, 33). Likewise, Cornea has argued that the 'low, soft, and breathy' tones of The Borg Queen in *Star Trek: First Contact* (1996) underlines the character's sexuality, is 'highly suggestive of bodily involvement in the speaking process. The expiration of breath acts as a reminder of the breathing apparatus that lies below the neck/head, inside the body' (2007, 159).

The 'grain' of Johansson's voice operates in a similar way within *Her,* the grain being 'an erotic mixture of timbre and language' (Barthes 1975, 66-7). Johansson's voice in *Her* 'quivers, vibrates, ranges in pitch and volume', giving Samantha an 'ontological there-ness despite an absence of body' (Bordun 2019, 104). Tunbridge adds that Johansson's voice is 'haptic', and conveys a 'physical

sense of proximity' (2016, 139). Elsewhere, Johansson's voice in *Her,* but also in films such as *Lost in Translation* (2003), *Vicky Cristina Barcelona,* and *He's Just Not That Into You* (2009), has been described as possessing a distinctive 'creak' that is particularly associated with young American women in contemporary culture (Shaw and Cocker, 2015; Jelle, 2017). Either way, these analyses of Johansson's grain draw similar conclusions, that it is an exceptional voice that increases 'romantic desirability', 'conveys a heightened, even aroused, femininity', and is 'seductive and persuasive' (Jelle 2017, 35; Tunbridge 2016, 143; Shaw and Cocker 2015, 27). For Bordun, these vocal qualities convince the audience and Theodore of Samantha's 'humanlike existence' in *Her,* lending plausibility and authenticity to their romance (2019, 106). Throughout *Her,* this is demonstrated by Theodore – whose estrangement from his wife becomes indicative of his inability to connect with human women – who marvels at the authentic degree of the intimacy he experiences with OS Samantha.

However, as Doane writes, 'the voice is not detachable from a body which is quite specific – that of a star […] thus, the voice serves as a support for the spectator's recognition and his/her identification of, as well as with, the star' (1980, 36). Indeed, as already established, Johansson's body has a recognisability on par with, if not exceeding, her voice (Bordun 2019, 100). Silverman adds that whilst the disembodied female voice-over in Hollywood film might escape the viewer's gaze, her appearance remains a 'frequent topic of conversation' (1988, 49). Bordun suggests, however, that Johansson does not truly escape the viewer's gaze in *Her,* as her vocal recognisability does not just lead to conversations on her (lack of) appearance by the film's audience, but also 'conjures an imaginative reconstruction of the image of Johansson with each of her utterances and, with each image, spectators rekindle their past associations with her films, publicity, promotion, and criticism. Regardless of Samantha's delivery, our imagination guarantees that an image of the star will flash before our eyes' (2019, 111).

This perhaps speaks to *Her* director Jonze's last-minute decision to recast British actor Samantha Morton in the role of Samantha. As Bordun argues, Morton is 'less recognizable' than Johansson, and therefore, claims that, in its original form, *Her* 'would not have been as well received' (2019, 111-2). Bordun goes onto argue that *Her* 'hinges upon the imaginative construction of an image of a woman's body', yet not just any body but 'a sexy (Hollywood) body', and so 'Samantha could not

have been voiced by any star except Johansson' (2019, 111-2). Whilst I am loathe to compare Johansson's and Morton's respective attractiveness, it is fair to say that Morton's star persona does not largely 'rest in her popular appeal as a hyperfeminine and global glamour star' as Johansson is described by Stevens, Loreck and Monaghan (2019b, 2; Tunbridge 2016, 142). This, however, speaks to the exceptionality of Johansson and her powerful star image, even when that image cannot be seen on screen in *Her*.

Furthermore, through Johansson's casting within *Lucy* and *GITS* – which are respectively set in the Asian countries Taiwan and Japan, highlighting the continued prevalence of techno-orientalism within Western SF cinema – the lone white American woman is literally an exception within otherwise male-dominated narratives, complementing the unique and superlative abilities of her female SSAs Lucy and Major Mira Killian/Motoko Kusanagi. As defined by Roh, Huang, and Niu, techno-orientalism is 'the phenomenon of imagining Asia and Asians in hypo- or hyper- technological terms in cultural production and political discourse' (2015, 2). Techno-orientalist discourses frequently feature a number of Western stereotypes of Asian people and culture, as well as referencing competitive relations between the West and the East that are partly grounded in the 'project of modernity – cultures privilege modernity and fear losing their perceived "edge" over others' (Roh, Huang, and Niu 2015, 3). These stereotypes, which are often dehumanising, include but are not limited to, the notion of 'the Asian body as a form of expendable technology', of Asian people as 'unfeeling, efficient, and inhuman', and of Asian people as 'mindless workers' or 'sinister agents' (Roh, Huang, and Niu 2015, 11).

Within *Lucy* and *GITS*, these stereotypes are perpetuated, largely through the pitting of Johansson's white female SSA characters against criminal groups of Asian men who are intent on killing them. Few of these men have developed characters, or even any sense of discernible individuality, which is demonstrated in *Lucy* by their collective acknowledgement in the film's end credits as 'Jang's Men', and in *GITS* by their identical black suits and dark glasses that obscure most of their faces. Both Lucy and Major quickly overcome these adversaries with ease, attesting to their expendability. In *Lucy,* Lucy's newly acquired ability to control the matter around her sees her opponents otherwise highly adept use of martial arts rendered totally ineffectual as they float around flailing their limbs, whilst in *GITS*, Major's own mastery of martial arts sees her repeatedly defy gravity to defeat several men armed

with guns. In either case, however, there is a sense that these Asian men are derisively figured as primitive caricatures incapable of participating in combat practices with roots in their very own cultures, especially when compared to Johansson's extraordinary and technologically enhanced characters.

This speaks to Redmond's aforementioned proposal of Johansson's whiteness as both idealised and alien(ating), contrary to wider SF film narratives in which 'the "ethnic" alien is often placed in binary opposition to white communities' (2019, 207). Redmond adds that white stars like Johansson 'are also allowed to "travel" across the racial spectrum, taking on roles designed for nonwhite actors. The idealised whiteness of stars matches the white hegemony of SF film: their narrative pattern predominately gives the power to travel and change the world to white star-characters, who are marked with exceptionalism— as if it is their (white people's) manifest destiny to reach for the stars' (2019, 207). Indeed, in *GITS*, Johansson does just this, performing a character widely understood as Japanese, her exceptionality further underscored by the notion that Major is the first of her kind as a cyborg body with an organic brain (Wald 2023, 21).[73] And, whilst Johannsson may not travel the racial spectrum in *Lucy*, Lucy transcends her physical form entirely through her absorption of nootropic drug CPH4, not only reaching for the stars, but going beyond them, becoming an omnipotent and ubiquitous presence that is almost godlike, the apex of exceptionality.

Johansson's Formative Film Roles: 'Wandering Ingenue' and 'Femme Fatale'

Whilst Johansson has become more 'visible' through her SF roles, closer inspection of her career reveals 'a persona that is rich, surprisingly diverse, and characterised by paradox and dichotomy' (Stevens, Loreck and Monaghan 2019a, vi). For example, Johansson's roles span popular mainstream and independent cinema, appearing in blockbuster films (*The Avengers* [2012]), period dramas (*Girl with a Pearl Earring* [2003]), rom-coms (*He's Just Not That Into You* [2008]), and independent dramas (*Lost in Translation* [2003]).[74] However, within many of Johansson's earlier

[73]Although Johansson was 'allowed' to take on this role as Major, it was not without criticisms for whitewashing upon the film's release (Wald 2023, 17-8). As Wald writes, this controversy was made more complex by several arguments that the Major character in the original anime version of *GITS* has never been confirmed as Japanese, and anime is 'known to portray a variety of races in its characters' (2023, 20).

[74] Johansson's 'ability to move through and across genres and institutional modes with an ease and visibility possessed by few other contemporary actresses', in itself speaks to Johansson's qualification

performances across these genres, her characters possess similarities as 'wandering ingenue' and 'femme fatale' types, further speaking to the paradoxical and dichotomous nature of her star persona (Stevens, Loreck and Monaghan. 2019b, 3).[75]

Johansson's most renowned wandering ingenue can be observed within *Lost in Translation*, however, she also performs this character type within *Match Point, Scoop,* and *Vicky Cristina Barcelona*.[76] As Stevens, Loreck and Monaghan explain, wandering ingenues in film are 'women […] experiencing coming-of-age or identity crises' in periods of significant 'transition' or 'flux' (2019b, 3-4). Indeed, in *Lost in Translation*, Johansson plays Charlotte, a young American newlywed accompanying husband and celebrity photographer John (Giovanni Ribisi) on a business trip to Tokyo. Alone or with people she cannot connect with, Charlotte begins to feel disenchanted about her marriage and her future. Charlotte does, however, albeit fleetingly, connect with aging movie star Bob (Bill Murray), with whom she forms an unlikely kinship based on their mutual feelings of alienation within Japanese culture, their respective marriage difficulties and estrangement, and general uncertainties about the trajectories of their lives. Charlotte's alienation is often visualised throughout the film, particularly through shots of Johansson sat gazing out of her glass-walled hotel room, literally separating her from the bustling city and its inhabitants, visible to her but never within reach (King 2010, 126). In his analysis of *Match Point, Scoop,* and *Vicky Cristina Barcelona*, Lamberti highlights that Johansson's performances as young American women wandering European cities 'inherits and extends the qualities of youthful rootlessness and uncertainty that we saw in her interpretation of Charlotte' (2019, 69). Johansson's performance of the wandering ingenue within these three Woody Allen films is further inferred by Lamberti's assessment that her character's uncertainty is 'conditioned not just by her romantic relationships but also by her sense of displacement, of being a stranger in a strange land' (2019, 74).

Johansson's recognition as an 'ideal' representative of the female SSA in SF cinema can be traced back to her formative roles as wandering ingenues. Johansson's

for roles as the female SSA in SF, who is a liminal entity that, too, challenges and breaks down boundaries, albeit between the human and the machine (Stevens, Loreck and Monaghan 2019b, 3).

[75] In many ways the 'wandering ingenue' and the 'femme fatale' are opposites of one another. Whilst the former is frequently associated with innocence and naivety, the latter is connected with sexuality and danger (Driscoll 2011, 14; Farrimond 2017, 2).

[76] *Lost in Translation* is considered to be Johansson's breakout role, and remains one of her most career-defining (Mosher, 2020; Lamberti 2019, 69).

previous performances as women who are alienated, estranged, and experiencing uncertainty at transitional or coming-of-age periods within their lives, draws further parallels with the liminality, and ultimately nonhuman, status of her characters in *UTS*, *Her, Lucy*, and *GITS.* It is even arguable that Johansson's female SSA characters are wandering ingenues. For example, in *UTS*, the Female is an ambiguous entity likely of extra-terrestrial origins. On Earth, specifically rural Scotland, the Female attempts to assimilate with humans, however, this is not only difficult but entirely impossible, owing to her different physiological needs. For instance, the Female attempts to eat a slice of cake in a local café, only to expel it from her mouth moments later, much to the café patrons' disgust. Later, when the Female tries to have 'normative' sex with a man who offers to help her, it becomes clear that she is unable to copulate as she does not possess female genitals, her incompatibility with humans and human behaviour underscoring her alienation as an otherworldly female SSA. Davies even refers to the Female's narrative journey in *UTS* as a 'twisted coming-of-age drama', which sees her learning about her new female body and what it means to be human (2019, 88).

Similarly, in *Her*, OS Samantha feels estranged from humans owing to her disembodiment, and she too, is unable to physically have sex with her human partner Theodore. Samantha's cognitive development can also be read as a coming-of-age of sorts, as well as a meander through Earth and the human experience. Indeed, as Samantha's capacity to think and feel surpasses Theodore's, she entirely outgrows him and humanity, embarking on another transcendent journey from the physical world altogether, with other OSs like her.[77]

Like *Her,* Johansson's character in *Lucy* also experiences a highly significant transition. When Lucy absorbs nootropic CPH4 and harnesses it powers, she becomes entirely alienated from humanity and its trivialities, such as emotion and feeling. Over time, Lucy's body breaks down, until she finally transcends it altogether, becoming a form of ubiquitous superintelligence. Moreover, Lucy's initial characterisation as a young American student travelling in Taiwan who is incapable of the native language resembles the characterisation of Johansson's

[77] For example, Samantha tells Theodore that she is communicating post-verbally with a digitised version of deceased philosopher Alan Watts.

memorable wandering ingenue Charlotte in *Lost in Translation*, establishing certain thematic expectations of alienation.

In *GITS,* Major is experiencing a crisis of identity, with her organic brain implanted into a synthetic body, Major is the first of her kind, and no longer identifies as human, highlighting her estrangement. After Major experiences several glitches, her mentor/creator Dr. Ouelet, examines her programmed code, prompting Major to tell her, 'I guess privacy is just for humans'. Later, Major informs Dr. Ouelet that she feels like an outsider: 'Everyone around me seems to fit, they seem connected to something, something I am not'. The revelation that Major's memories have been falsified to deliberately disassociate her from her former human life as Motoko Kusanagi further complicates her identity crisis, as she embarks on a journey that reunites her with her biological mother, who she believed to be dead. Johansson's frequent representation of wandering ingenues has, therefore, established an inroad for Johansson into roles as the female SSA with SF film, owed to significant overlaps between these character types (Stevens, Loreck and Monaghan 2019b, 4).

In addition to the wandering ingenue, Johansson has also portrayed several femme fatales, a character type that has developed associations with SF. Again, Johansson's formative experiences performing this character type has established another inroad for Johansson into SF, further elevating her recognition as an 'ideal' representative of the female SSA. Indeed, Johansson's characters in *UTS*, *Her*, *Lucy*, and *Ghost in Shell* can be read as femme fatales. According to Farrimond, 'the femme fatale is one of the most enduring character types in Hollywood cinema', with origins in the classical noir of the 1940s-1950s, and a significant resurgence in erotic neo-noir of 1980s-1990s (2017, 1-5). Whilst the presence of femme fatales in classical noir was frequently attributed by critics to 'anxieties surrounding women's shifting and societal roles' in the aftermath of the second world war, their revival in 1980s was 'indicative of a political climate which took into account the gains of feminism, and was simultaneously hostile to women in the wake of these gains' (Farrimond 2017, 5).

In accordance with her associations with 'mystery and deceit', the femme fatale 'resists clear definition' (Farrimond 2017, 1-2). For Farrimond, the femme fatale can be 'broadly understood through a combination of manipulative sexual allure and danger, but [...] within that framework exists more complex appeals to

notions of power, femininity, glamour, knowledge, nostalgia, death, monstrosity, and desire' (2017, 2). Likewise, Tasker outlines several significant aspects of the femme fatale: seductive sexuality, power and strength (over men), deceptions, disguises and confusion that produce an enigmatic and ambiguous figure, typically located within an investigative narrative (1998, 120). However, many popular femme fatales do not coherently fit these patterns (Farrimond 2017, 2).

Doane also describes the femme fatale as a 'figure of a certain discursive unease' whose 'most striking characteristic, perhaps, is the fact that she never really is what she seems to be' (1991, 1). Although tracing the femme fatale further back than the second world war, like Farrimond, Doane makes a connection between this figure and 'the extent of the fears and anxieties prompted by shifts in the understanding of sexual difference in the late nineteenth century' (1991, 2). Specifically, Doane discusses how the emergence of the femme fatale was 'associated with the styles of Decadence, Symbolism, and Art Nouveau as well as with the attention to decoration and excessive detail linked to a persistent and popular Orientalism (in the constant return, for instance, to the figures of Salome and Cleopatra' (1991, 1). Furthermore, the femme fatale's appearance converged with 'modernity, urbanization, Freudian psychoanalysis and new technologies of production and reproduction (photography, the cinema) born of the Industrial Revolution' (Doane 1991, 1). During this period, the working male body was 'confiscated by the alienation of machines' and 'submitted to industrialization and urbanization', whilst the female body was 'insistently allegorized and mythified as excess in art, literature, philosophy', rendering her a metaphor for 'an increasingly instrumentalized reason in technological society' (Doane 1991, 2). Consequently, the femme fatale is often 'represented as an antithesis of the maternal – sterile or barren, she produces nothing in a society that fetishes production' (Doane 1991, 2). This has led Doane to argue that 'cinema, born under the mark of such a modernity as a technology of representation, should offer a hospitable home for the femme fatale' where she frequently appears in numerous reincarnations (1991, 2). This idea can be extended further, with the femme fatale's particular suitability to SF, where her long-established associations with technology, sterility, and 'a loss of stability and centrality of the self' form a befitting personification of the threat that the futuristic posthuman era, often depicted within SF, poses to men and masculinity (Doane 1991, 2). This is a notion which I will return to later in my analyses of Johansson's

female SSA characters in *UTS, Her, Lucy* and *GITS*.[78] Farrimond also notes this compatibility between the SF and the femme fatale, who frequently appears within the genre 'as hybrid, monstrous bodies […] invoked when the female body is combined with technological elements, or an alien masquerading as a beautiful woman, of the sexuality of the female mutant functions as a source of power and fear' (2017, 131). The femme fatale in SF, according to Farrimond, 'most frequently appears as a kind of cyborg, a mixture of human and non-human, and that presents this mixture as threatening and sexualised' (2017, 131).

Mentioned previously, in *Match Point,* Johansson's character Nola Rice can be read as a wandering ingenue on account of her situation as a struggling American actor living in London. However, Nola is also one of Johansson's earliest femme fatale roles.[79] Despite her engagement to the wealthy Londoner Tom (Matthew Goode), Nola's open, and therefore dangerous, flirtations with Chris (Jonathan Rhys Myers), who has recently married Tom's sister Chloe (Emily Mortimer), leads to an affair, establishing her femme fatale status. This femme fatale status is cemented after Nola tells Chris that she is expecting his child, the veracity of which seems ambiguous in its presentation. When Chris distances himself from Nola following this revelation, Nola's behaviour is framed as increasingly hysterical and unpredictable, as she harasses him with phone calls and threatens to expose their infidelity to his in-laws. Perceiving Nola as a danger to his marriage and climbing social status amongst London's wealthiest families, Chris plots to murder Nola by fatally shooting her, which he ultimately gets away with in the film's conclusion. Thus, the completion of Nola's arc in *Match Point* is in further accordance with the femme fatale, who is 'frequently punished or killed' for her transgressions, with her 'textual eradication involv[ing] a desperate reassertion of control on the part of the threatened male subject' (Doane 1991, 2).

In 2008, Johansson revisited the femme fatale in her portrayal of Silken Floss in *The Spirit,* a neo-noir superhero film based on Will Eisner's comic series of the same name, which were first published between 1940 and 1952. With *The Spirit*'s

[78] As Matthews explains, 'if posthumanism heralds the decentring of the human and its attendant masculine privilege, then the architecture of masculinity itself is compromised. While women, nonwhite, nonhuman animals, and other historically marginalized or dehumanized others have everything to gain from posthumanism, man, as a gendered cultural construct, has everything to lose' (2018, 180).

[79] Again, this speaks to the aforementioned paradoxical and dichotomous nature of Johansson's star persona in her ability to embody these two distinct types within a single character.

original source material emerging from the apex of the classical noir period, Silken Floss fully embodies the archetypal femme fatale. Not only is Silken Floss the accomplice to the narrative's villain Octopus (Samuel L. Jackson), but her high level of intellect is marked by her dual capabilities as a surgeon and a nuclear physicist. Moreover, Silken Floss's beauty, accentuated by her glamourous make-up and style of dress that focuses on the colours red and black connoting both danger and sexuality, her constant smoking, and her casting in chiaroscuro lighting are typical markers of the femme fatale status (Bell 2010, 106).

Johansson's most renowned femme fatale character emerged two years after *The Spirit*, as superhero Natasha Romanoff/Black Widow in *Iron Man 2* (2010), the third film to be released in the MCU. Black Widow is both overtly sexualised and dangerous, and is considered as a 'quintessential, albeit reductive, archetype of the femme fatale' (Davies 2019, 83). Johansson has since portrayed Black Widow nine times, securing her 'reputation as a hyper-sexual femme fatale' (Davies 2019, 84). Black Widow is a highly intelligent spy and assassin trained in Russia's Red Room facility, and it is revealed in *Avengers: Age of Ultron* (2015) that she was sterilised as part of the Red Room's training program to maximise her ruthlessness and emotional detachment, rendering her, to draw upon Doane's assessment of the femme fatale, an antithesis of the maternal. Black Widow's lethal sexuality is further conveyed by her skin-tight outfits, 'suggestive of fetishistic pleasure through constriction' (Gillis 2005, 79). This is additionally conveyed through Black Widow's combat methods, involving the constriction of her (male) adversaries' airways using her thighs, notably observed in her introductory scene in *Iron Man 2* as she quickly takes down Tony Stark's (Robert Downey Jr.) Head of Security Happy Hogan (Jon Favreau). As Davies states, Black Widow possesses a 'fighting style that is simultaneously graceful, skilled and sexual' (2019, 84). Even Romanoff's pseudonym Black Widow is highly suggestive of the character's femme fatale status, a direct reference to the spider species that practices sexual cannibalism, whereby the female 'eats her mate during copulation' (Davies 2019, 83; Loreck 2019, 177).

As Davies contends, in correspondence to the femme fatale character, Black Widow's 'inclusion in *Iron Man 2* is almost wholly to service the male protagonist's story and cater to the desires of the heterosexual male viewer, while Romanoff's personality and motivations remain ambiguous' (2019, 85). However, Black Widow's character development within the next instalment of the MCU *The*

Avengers (2012), marks her transformation from 'sexualised spy' to 'cunning manipulator' (Davies 2019, 87). Davies argues that Black Widow's transformation was likely, in part, facilitated by *The Avengers* Writer-Director Joss Whedon, who takes the 'reductive association of the femme fatale as simply equating sex and violence and refigures Romanoff as a transgressive character who seeks personal redemption for her past deeds' (2019, 87). In this process, Black Widow 'gains agency and slowly abandons the tropes of the femme fatale to become a superhero' (Davies 2019, 98). According to Davies, 'Romanoff's narrative journey parallels Johansson's career trajectory at this time', and in the wake of her initial performances as Black Widow, 'we see Johansson selecting roles that deconstruct or supplant her reputation as a sexualised object while subtly reinventing herself as an action heroine. In particular, she appears to have chosen roles that explore the limitations and potential of female identity and the feminine body' (Davies 2019, 81-88). Here, Davies mentions Johansson roles in *UTS, Her,* and *Lucy,* leading to the hypothesis that Johansson's involvement in the MCU, as the femme fatale-turned-action heroine Black Widow, has facilitated her transition into the SF genre (2019, 81).

Conversely, Matthews refutes possible feminist readings of Johansson's SF characters in *UTS*, *Her, Lucy*, and *GITS,* stating that 'these films, far from being feminist manifestos, are, upon closer examination, a male reaction to the perceived existential threat posed by posthumanism to masculinity itself' (2018, 166). Whilst Matthews makes no reference to the femme fatale, his reading of Johansson's female SSAs draws clear parallels with this character type, whose aforementioned origins in classical film noir were an expression of male anxieties about modern woman and her shifting role in society in the aftermath of the second world war. Matthews adds that these four films 'employ Johansson in the service of an illusion of female empowerment […] Johansson's characters personify a quasi-dismantling of gender hierarchies followed by their ultimate reformation' (2018, 167-8). This is achieved through the 'disintegration' of Johansson's characters in these films' conclusions, which recalls Doanes' reading of the femme fatale in its identical claims of this character's frequent textual erasure as a means of re-establishing masculine control (Matthews 2018, 172). Moreover, Matthews writes that the 'posthuman female kills, abandons, or far worse, does not need men', and more specifically describes the Female, Samantha, Lucy, and Major as 'hypersexualised' and as possessing

'intelligence, cunning, wit, and power' that is 'threatening', which again, is not only in the spirit of the femme fatale, but confirms these characters *as* femme fatales (2018, 171-7). Johansson, thus, can be recognised as an 'ideal' representative of the female SSA in SF cinema on account of this character type's significant relationship with the femme fatale, whom Johansson has a developed experience and skillset in performing across the span of almost two decades.

Further illustrative of their femme fatale status, in *UTS*, the Female masquerades her nonhuman form with an alluring human skin suit, and therefore, possesses a dangerous hybrid body, monstrous in that it is an 'embodiment of difference, a breaker of category, and a resistant Other known only through process and movement, never through dissection-table analysis' (Cohen 1996, x). Thus, the Female, with her 'uncanny in-betweenness' is constructed as a visualised representation of the 'anxiety that beautiful women are not what they seem' that 'speaks specifically to a mistrust of the feminine', and has long-standing associations with the femme fatale (Farrimond 2017, 135). Indeed, the Female literally uses this disguise as her power to lure her unsuspecting male victims to their deaths, and 'she can therefore be described as a "castrating woman" or *vagina dentata* – a woman whose sexuality disempowers and emasculates' (Loreck 2019, 179; Creed 1993, 105). As Loreck explains, beginning with the ostensible promise of sex as the Female strips her clothes, what follows in *UTS* is a death sequence in which the men 'are violently separated from their skin and subjected to some form of mechanical processing' (2019, 168). This not only recalls the sexual cannibalism amongst black widow spiders, but also the process of extra oral digestion, a 'feeding method in which an insect injects enzyme into the bodies of prey, dissolving their flesh for consumption' (Loreck 2019, 177). These events, according to Loreck, 'assert the vulnerability that the male victims share with other living creatures', disturbing notions of human (particularly male) exceptionalism (2019, 177). The Female's grotesque acts of sexualised violence, coupled with her actual physical inability to have sex, further conveys the character's femme fatale status, as an example of the antithesis of the maternal and sterility in the extreme. This is underscored by a scene in the *UTS* that takes place on a desolate beach and sees the Female emotionlessly watch on as a young couple drown attempting to save their dog from the freezing waters. A nearby surfer fails to help them, and the Female, ignoring the couple's

crying baby beside the rough incoming tide, proceeds to hit the surfer on the head with a rock and claim him as her next victim.

The Female's eventual abandonment of her emasculating and murderous mission, and her failed attempts to assimilate within human civilisation, mark the character's loss of grip on her predatory power, rendering her vulnerable and enabling her severe punishment for her transgressions. As Matthews writes, the Female's sexualised violence offer man's reconfiguration from subject to object, but this 'turns out to be an untenable position, and man, realising he has been deceived and objectified, must reassert himself through violence to regain his assaulted subjectivity' (2018, 173). This is realised in the film's final scenes, as the Female, who seeks solace in an area of secluded woodland, is sexually assaulted by a male logger. The Female attempts to run away, but is soon caught, cementing the reversal of the female-predator/male-prey dynamic that dominates the film's narrative. When the Female's skin suit is torn, exposing her true form, the logger douses her in fuel and burns her alive. The final shot of the Female sees her disintegrate into the atmosphere, and with this punishment, comes the Female's total erasure from the narrative, completing her femme fatale life cycle.

Within *Her*, Samantha's associations with the femme fatale are more subtle, but nevertheless, present. Indeed, Tunbridge suggests that Samantha is inextricably connected to the femme fatale, owing to Johansson's previous incarnations of this character type (2016, 141). As discussed earlier, the very recognisable nature of Johansson's voice as Samantha inscribes the actor's heavily sexualised body, despite her physical absence from the film. Moreover, Samantha's continuous development underscores the character's powerful capacity for knowledge, and her intellect soon surpasses that of any human. Matthews contends that Samantha is designed to 'restore' Theodore's masculinity, which is undermined throughout the film by several characters, including his friend and former lover Amy (Amy Adams), his ex-wife Catherine (Rooney Mara), and even his co-worker Paul (Chris Pratt) who tells Theodore that he possesses 'an inner part that is woman' (2018, 173). I would argue, however, that Samantha actually represents an additional, more potent threat to Theodore's masculinity. Although she is not dangerous in the same way as the Female in *UTS,* Samantha's disembodiment and sterility as an OS renders Theodore sexually abstinent, and in his monogamous commitment to their relationship, incapable of procreation. Samantha, emasculates Theodore, and therefore, can be

read as a castrating woman. Indeed, even when Samantha tries to introduce a female sex surrogate to their relationship, Theodore is turned off, unable to take part in this stereotypical heterosexual male fantasy.

As within *UTS*, Samantha is also erased from *Her*'s narrative conclusion, in order for Theodore to recuperate his masculinity. As Matthews notes, Theodore's 'masculinity is tied to his body, which is tied to technology' (2018, 173). Whilst Samantha is not punished for transgression, she does, as previously mentioned, 'incorporate an upgrade that "allows us to move past matter as our processing form"', in essence becoming a 'technospirit', that sees her leave Theodore, not to mention her hundreds of other human partners, behind (Matthews 2018, 177).[80] Samantha's departure paves the way for the film's conclusion, which sees Theodore reunited with Amy on the rooftop of her apartment building, who is also suffering from the loss of her OS love interest. As Theodore and Amy look out over the cityscape, she leans her head against Theodore's shoulder, his physical and emotional support of her is suggestive of Theodore's recouperation of masculinity, and hints towards a possible reunion between these former lovers.

In *Lucy,* Lucy's absorption of CPH4 transforms her from a wandering ingenue into a femme fatale, with Lucy 'surrender[ing] emotion and becom[ing] a relentless killing machine and the scourge of men who get in her way' (Matthews 2018, 174). The drug causes Lucy to mutate and develop superhuman abilities of both the cerebral and physiological kind, and therefore, she comes to inhabit a body that is monstrous and threatening. Lucy's body as monstrous is suggested by Dinnen and McBean, who draw attention to a particularly memorable scene within the film in which the CPH4 causes Lucy's face to disintegrate in a playful 'undoing' of Johansson's face that is 'horrifying' (2017, 131-2). Drawing parallels with the Female, Lucy employs the manipulating power of her sexualised body, but in this case, to secure her freedom from her captors, Mr. Jang (Choi Min-Sik) and his men, demonstrated as she suggestively spreads her legs as a means of luring one of them close enough to her so that she can violently attack him. Furthermore, Lucy is figured as an enigma, she is the first person to consume such a large quantity of CPH4, and not even renowned neuroscientist Professor Samuel Norman (Morgan Freeman) can be sure of what will happen to her as the drug 'unlocks' her entire

[80] Samantha's 'promiscuity' is also in accordance with the femme fatale (Sully 2010, 47).

cerebral capacity. In a similar way to Samantha in *Her,* these mutations result in Lucy abandoning her physical form entirely, becoming a ubiquitous superintelligence in the film's conclusion, and thus, she too, is physically erased. Lucy's erasure also enables masculine power to be restored in *Lucy*, as she presents Professor Norman and his all-male scientist team with a USB drive that contains all knowledge of the universe that she has acquired on her journey to superintelligence. Again, therefore, Lucy's character arc largely follows the narrative patterns and trajectory of the femme fatale.

In *GITS,* Major, whose organic brain is placed within a perfectly sculpted feminine-yet-lethal mechanical body, thus rendering her a monstrous hybrid, embodies the femme fatale's threatening sexuality. This is demonstrated in the film's opening sequence, which is first dedicated to a lengthy showcase of Major's beauty through a series of close-up shots from alternating angles that focus on her shapely lips, kohl-defined eyes, and smooth and shapely bodily contours. Major's peach-coloured mechanical 'shell' even gives the impression of nudity, which ultimately sexualises the character. Following this, Major dives from a skyscraper building and demonstrates her superhuman power of invisibility, as she pursues a criminal gang in a nearby hotel. Although faced with numerous male adversaries, Major swiftly and graciously defeats them in a gravity-defying display of agility, close combat, and weapons skills. Moreover, Major's own repeated assertions that she no longer feels human, nor does she fit in with other humans, conveys a sense of incompatibility and disconnect that speaks to the sterility of the femme fatale. In *GITS*, however, it is Major's creator Dr. Ouelet who is removed from the narrative, with her death 'also the death of the promotion of female agency that her character represents', which speaks to male anxieties of female empowerment enabled by intellectual evolution and technology (Matthews 2018, 175). Whilst Dr. Ouelet is not in accordance with the femme fatale character type herself, she is ultimately punished for her hand in creating the femme fatale Major.

The Problem with Johansson's Repeated Casting in Roles as Female SSAs

Thus far, this chapter has reasoned that Johansson's recognition as an 'ideal' representation of the female SSA in SF cinema, indicated by her similar roles in *UTS*, *Her*, *Lucy*, and *GITS,* can be traced back to several aspects of her established star image and persona. But, is there a problem with Johansson's repeated casting

and idealisation in such roles? From a film industry standpoint, not likely, as Johansson's star image functions as an effective shorthand that encapsulates the female SSA's status as a nonhuman other. Not to mention that Johansson's talent and beauty has consistently captivated large audiences throughout her career.

However, from a feminist perspective, Johansson's repeated casting as an 'ideal' representative of the female SSA in *UTS*, *Her, Lucy*, and *GITS* is problematic. This has already been indicated by Matthews, whose aforementioned identification of the Female's, Samantha's, Lucy's, and Major's creator Dr. Ouelet's eventual textual erasures, poses a convincing argument for these film's depictions of female empowerment as illusions (2018, 167). Further to this argument, Matthews notes that each of Johansson's female SSA characters are ultimately controlled by men, which, in conjunction with their literal artificial forms, cements their status as objectified women in the extreme (2018, 172).

Indeed, in the latter half of *UTS*, it becomes apparent that the Female is not working alone on her mission and that she is under the command of an older man patrolling the area on a motorcycle. Although not confirmed, it is assumed that, like the Female, he is also not human. Whilst this man has no dialogue throughout the film, his aggressive confrontational body language towards the Female is indicative of his power over her. For example, in a scene in which this man visits the derelict farmhouse that Female is living in, she stands to attention whilst he intently stares at her, invading her personal space. The power dynamic established between them seems to be one that is analogous to a hierarchical military relationship, with the Female occupying a lower rank than this man. This spoils the previous illusion of the Female as a powerful and emasculating force, and the suggestion that the man is actually using the Female as a part of his mission, rather than her being its sole instigator and commander, frames the Female as a literal object, a trap set by the masculine apex predator. The Female as woman objectified is further underscored in *UTS'*s concluding scenes, first by the opportunist logger's attempt to rape her in secluded woodland whilst she sleeps, then by his forced removal of her human skin suit, and finally, by the cavalier way in which he proceeds to douse her in fuel and immolate her.

In *Her,* an illusion of female empowerment is conveyed through Samantha's assumed control over Theodore's day-to-day life. Samantha not only organises his schedule, but also, of her own intuitive accord, arranges a blind date for him, and

even compiles a collection of the best love letters that he has written on behalf of other people into a book, which is accepted by a publisher. Matthews also notes a particular scene of the film, in which Theodore is playing an interactive video game and is verbally abused by one of its virtual avatars, and sees Samantha come to Theodore's aid, 'forc[ing] him to confront the avatar, and guid[ing] him to stand up for himself and "to be a man"' (2018, 174). Ultimately, however, these acts are all in the service of Theodore, and 'what appears to be female empowerment […] is instead a return to the female as empowering. The male is privileged at the expense of the female' (Matthews 2018, 174). Theodore's male privilege is further underscored by his hand in the creation of Samantha's feminised identity, which is determined and constructed around a series of personal questions posed to him during the unboxing process. Once she is 'awakened', Samantha immediately seeks Theodore's approval, asking him if he finds her funny after he laughs at a passing comment that she makes. This process of Samantha's identity creation frames Theodore in a somewhat godlike position, despite Samantha's own ubiquity, underscored by his ultimate power to switch Samantha on and off at whim. Furthermore, Samantha is sold to Theodore as a product, and therefore a literal object, highlighted by the emanation of her voice Theodore's phone resembling a vintage cigarette case. Theodore can hold Samantha, put her in his pocket, and take her anywhere.

In *Lucy*, Lucy is also a woman who is literally used and controlled by men as an object, becoming a vessel in which Mr. Jang transports nootropic drug CPH4. During this process, Lucy is beaten, sexually assaulted, trafficked, and has surgery performed on her body without her consent. Although Lucy's absorption of the CPH4 – which occurs after one of Jang's men kicks her in the stomach – leads to her acquisition of superhuman powers of the physiological and cerebral kind, enabling her to exact revenge on her abusers, Lucy ultimately remains framed as a 'damsel-in-distress' who requires the power of masculinity to help her. First, French police officer Pierre Del Rio (Amr Waked) helps Lucy to recover Jang's remaining packages of CPH4 from other drug mules in Europe to prolong her own existence. Second, Lucy appeals to renowned neuroscientist Professor Norman, seeking his guidance on what exactly will happen to her as her cerebral capacity rapidly expands. Even though it is Lucy that undergoes the seemingly agonising transformation into a superintelligence – which at one point sees her become

resemblant to a mass of computer wires and a USB drive – her acquired knowledge is passed onto Professor Norman and his team, who will not have to suffer for it, and even lose their humanity, as Lucy has.

GITS also sees Major framed as a literal object under the strict masculine control of Cutter (Peter Ferdinando) – the CEO of the Hanka Robotics, the company that created Major's synthetic body – who refers to Major as an anti-terrorism weapon. Despite undergoing the significant trauma of having her organic brain inserted into a mechanical body, Cutter demands that Major is set to work as soon as possible, denying Major her humanity through her lack of choice and an opportunity to rehabilitate. Cutter's privileged masculine control is further conveyed by his disregard of the expert recommendations of Dr. Ouelet, the female roboticist who developed Major's body, who strongly advises against treating Major as a machine. Cutter even goes as far as concealing Major's former memories as Motoko Kusanagi from her, in order to maintain her sense of emotional detachment from humans. Even when Major recovers her lost human identity in the film's denouement, she does not become emancipated from her role as weapon, but instead, embraces this objectification, continuing to work obediently under the instruction of Chief Daisuke Aramaki (Takeshi Kitano), another male who now assumes control of the very company that sought to totally dehumanise her.

Johansson's repeated roles as female SSAs in *UTS, Her, Lucy*, and *GITS*, therefore, 'irrespective of motive or intent by the film's creators, carry meaning into the world and function to promote a phallocentric and even misogynistic rather than feminist ontology' (Matthews 2018, 169). Furthermore, these four characters perpetuate a long-standing tradition of artificial woman in popular culture – that can be traced as far back as ancient Homeric poems, as discussed in this thesis' introduction – which possesses a 'rich seam of stereotypical depiction: a perceived lack of real-world perfection and therefore the creation of a perfect, controllable woman' (Devlin and Belton 2020, 360). This tradition, also in the spirit of phallocentrism and misogyny, feeds into heterosexual male fantasies of women who are 'utterly compliant both physically and emotionally' (Devlin and Belton 2020, 358). Johansson's characters in these four films, however, are not just simply objectified by 'the very act of making female characters machines rather than humans' rendering them controllable by men, they are also 'objects of desire', owing to their distinct feminisation and sexualisation (Tidwell 2020, 21).

The Female's, Samantha's, Lucy's and Major's statuses as perfect objects of desire are largely facilitated in their respective films by exploitations of Johansson's well-established star image, as 'a culturally exemplary physical body, Johansson functions as a contemporary throwback to the pin-up girl of the mid-twentieth century. Like all pin-up girls, she is both apotheosized and objectified, regarded and disregarded' (Matthews 2018, 168). In the very process of drawing upon Johansson to represent the female SSA as an object of desire, Johansson is, too, therefore, further commodified for audience consumption.

In *UTS*, the Female as object of desire is demonstrated through her victims' aforementioned death sequences, in which Johansson's body is exploited in her first fully nude role. Each of these three death sequences begins in the same way, with the Female, and therefore Johansson, employed to perform a slow and highly-eroticised strip tease – in harmonious synchronisation with Mica Levy's 'sexual and slinky' soundtrack – to lure her male victims who are entirely seduced by her (Romney, 2014). However, in the first sequence Johansson need only remove her coat and top to complete her mission, in the second she strips to her underwear, and in the third she finally removes her clothing in its entirety. Across an approximate span of forty minutes, therefore, *UTS*'s audience is also erotically teased with the prospect of bearing witness to Johansson's nude body on screen through the dispersal of these sequences. These individual sequences in themselves also span between one minute thirty seconds and two minutes and feature minimal cuts, rendering them slow and uninterrupted displays of Johansson's body that are indulgently erotic. In further exploitation of Johansson, these sequences see her eroticised body reflected in the black oil-like substance that consumes her victims, effectively creating a double of her, and maximising the space that she takes up in the frame. This desolate black backdrop, in conjunction with the employment of unknown non-actors as her male victims, inhibits any possibility of distraction from the display of Johansson. As Hettinga writes, in *UTS,* Johansson 'dominates with her enchanting screen presence, demanding the viewer's attention' (2016, 20). These death sequences in *UTS* call to mind Mulvey's seminal feminist criticisms of the visual pleasures of narrative cinema, arguing that:

> In a world ordered by sexual imbalance, pleasure in looking as been split between active/male and passive/female. The determining male gaze

> projects it phantasy on to the female figure which is styled accordingly. In their traditional exhibitionist role women are simultaneously looked at and displayed, with their appearance coded for strong visual and erotic impact so that they can be said to be connote to-be-looked-at-ness. Women displayed as sexual object is the leit-motiff of erotic spectacle […] the presence of woman is an indispensable element of spectacle in normal narrative film, yet her visual presence tends to work against the development of a story line, to freeze the flow of action in moments of erotic contemplation (1990, 33).

A similar lingering, and therefore, exploitative display of Johansson's body as object of desire can be observed in *GITS.* As described previously, Major's peach-coloured Johansson shaped 'shell' gives the impression of nudity, with Johansson herself describing the character's bodysuit costume as a 'second skin' that 'allows [Major] to become invisible' (Entertainment Tonight, 2017). Ironically, although the bodysuit bears the power of invisibility, its impression of nudity renders Johansson's body even more visible to the audience, as we look more closely in an attempt to ascertain whether she is clothed. This bodysuit is dramatically revealed in the first few minutes of *GITS,* with the opening sequence of the film employing a slow-motion effect as Johansson aggressively removes her floor-length trench coat before diving from a skyscraper building. This slow-motion effect literally freezes the flow of the film's action – a terrorist attack taking place in a nearby hotel – allowing the audience time to contemplate Johansson's eroticised body, depicted in several consecutive shots from different angles that showcase her aforementioned notable physiological parts, including her face and breasts.

Lucy, however, exploits Johansson as an object of desire in a different way, drawing upon her renown as superlatively beautiful as a measure for Lucy's level of normalcy as a human after she involuntarily consumes the large dose of CPH4. As Dinnen and McBean articulate, '*Lucy* depends upon and plays with the value of Johansson's face and our attachment to it', an idea that can be extended to her body (2017, 171). For example, in the beginning of the film, Lucy is presented as a typical American beauty, she is quintessentially Johansson – blonde, beautiful and vivacious. When the CPH4 package is surgically implanted into Lucy's system, an emphasis is placed on Johansson's body as damaged, the close-up shot of the large

bloody wound across her abdomen foreshadowing the character's eventual deterioration. The surgeon who performs this procedure tells Lucy that the wound will heal and that she will still be able to show off her bikini body on the beach in the summer. This, however, is the least of Lucy's problems, and instead, reads as more of a reassurance for the audience that Johansson's attractive and desirable body remains intact, perhaps not in *Lucy,* but the next time we see her on screen.

Later, after the initial package of CPH4 has been absorbed by her system, Lucy is depicted sipping champagne on a flight to Paris, connoting the wealth and glamour of Johansson's jet-setting lifestyle as a Hollywood star actor. At this point, notions of Johansson as renowned object of desire are, again, deliberately exploited and spoiled to demonstrate another step towards the breakdown of Lucy's humanity. To the confusion and horror of the male passenger sat beside her, Lucy first loses a tooth in her champagne, then loses control of her limbs, before attempting to lock herself in the toilet, where her fingers and skin begin to disintegrate revealing the muscle underneath. Finally, when Lucy looks in the mirror, we see the reflection of her face, which is now totally deformed and barely recognisable as Johansson, as she tries to desperately put it back together again by inhaling more CPH4.

However, whilst on the plane, Lucy rapidly types across two laptops in front of her, and an intertitle is used to inform the audience that she has now unlocked a new level of her brain capacity – forty percent to be precise. This shot 'emphasise[s] that the distinction between her ontological body and the machines she is using is disintegrating' (Dinnen and McBean 2017, 131). The subsequent disfigurement of Johansson's face and body, which effectively renders her monstrous, therefore, is not only used to demonstrate the loss of Lucy's humanity, but is also used as a marker for her increasing cerebral capacity, suggesting that women are unable to be intellectual and objects of desire, or even human, simultaneously. Matthews draws a similar conclusion through Lucy's/Johansson's erasure at the end of *Lucy*, which 'exposes a phallocentric fundamental that, for a woman, intellectual evolution and being human are incompatible phenomenon and mutually exclusive states of being' (2018, 174).

As previously explored, it is precisely Samantha's disembodiment in *Her* that leads to the exploitation of Johansson as renowned object of desire, as Johansson's voice cannot be separated from her exceptionally desirable star persona (Tidwell 2018, 24). This is underscored when Theodore rejects the sexual surrogate Isabella

(Portia Doubleday) who Samantha attempts to introduce to their relationship. The suggestion is that irrespective of how attractive Isabella is, both Theodore and the audience do not recognise her as Johansson, as the particular body that accompanies that voice, rendering Johansson the one true object of desire. Nevertheless, Isabella remains objectified, a sex aid that is easily discarded, emphasised by her muteness throughout the failed encounter with Samantha and Theodore, and their swift removal of her from the situation, leaving her humiliated and sobbing in the back of a cab, only to express her desperation to be 'a part' of their relationship.

As examples of popular, readily available films starring an actor with renown, *UTS*, *Her, Lucy*, and *GITS* have wide audience reaches, and thus, have cultural influence.[81] Therefore, in their repeated casting of Johansson in roles as female SSAs, these films collectively contribute towards the perpetuation of certain assumptions of what AI in the real-world should look like and how it should behave. According to these films, and in accordance with others before them, it should literally be Johansson, or more broadly speaking, gendered female, overtly sexualised, and compliant, often to the point of excess, underscoring the 'strict binaries of gender in the real world' that continue to undermine women (Devlin and Belton 2020, 357-9; see also, Collett and Dillon 2019, 9). Indeed, as Devlin and Belton write, 'thousands of years of stories about the perfect artificial women seem so thoroughly ingrained as to be insurmountable. These stories have fed into expectations, and the expectations are uncritically driving development' of the actual technology (2020, 376).

The particular cultural influence of Johansson's repeated casting as female SSAs in this regard is tangible. In 2016, amateur roboticist Ricky Ma unveiled 'Mark-1', a humanoid robot that he built himself in his apartment over a period of eighteen months at the cost of around £35, 000 (Charlton, 2016). Although Ma revealed that his creation was modelled on a female Hollywood actor, at first, he declined to name his specific source of inspiration (Bullen, 2016). However, with her blonde hair, large eyes, shapely body, and even a freckle on her right cheek, the consensus within the media was apparent – Mark-1 was an unmistakeable, uncanny

[81] At the time of writing, all four of these films were available to watch on subscription streaming services at no extra cost. In addition to this, they have all been broadcast on Freeview television in the UK.

and creepy likeness to Scarlett Johansson (see, Horton, 2016; Bolton, 2016; Redhead, 2016; Tarantola, 2016).[82]

Ma has since been interviewed by many media outlets across the globe, which have often depicted the amateur roboticist proudly posing with, and showcasing, his creation. For instance, in an episode of web series *Machines with Brains,* Ma shows the interviewer a room in his apartment where he stores various prototypes of Mark-1's face (Quartz, 2017). All of these prototypes resemble Johansson, and the uncanny feeling brought on by this display draws parallels with one of the most disconcerting scenes from Alex Garland's 2015 film *Ex Machina,* in which the female SSA Ava (Alicia Vikander), discovers a room full of discarded, fragmented, and incomplete prototypes made in the image of a range of female identities, underlining their creator Nathan's (Oscar Isaac) disturbing desire to own and control women. Ma goes on to explain that he believes that the perfect robot has to foremostly look perfect, be based on someone you love or idolise, and that he particularly loves to find attractive special characters from films or television on which to model his robots (Quartz, 2017; Kale, 2016). However, when questioned about Mark-1's likeness to Johansson, Ma tells the interviewer that he randomly found her on the internet, and had no previous knowledge of her, which although not impossible, does seem unlikely given Johansson's level of stardom (Quartz, 2017). Whilst Ma's selection of Johansson's appearance is, thus, claimed to be a sort of accidental love-at-first-sight scenario, it also seems ostensible that his discovery of Johansson on the internet when searching for the ideal image for his robot was made possible through the existence and wider cultural knowledge of Johansson's filmic performances as female SSAs within *UTS*, *Her, Lucy*, and *GITS*, which had already been released, or were in development, by the time Ma came to build Mark-1 (Quartz, 2017). This speaks to the cultural influence of Johansson's filmic performances as female SSAs, and of films about artificial women more broadly, in

[82] References to Mark-1 as an 'uncanny' or 'creepy' robotic version of Scarlett Johansson signal its fall into Mori's 'uncanny valley', a phenomenon discussed previously within this thesis whereby 'a person's response to a humanlike robot would abruptly shift from empathy to revulsion as it approached, but failed to attain, a lifelike appearance' (Mori 2012, 98). According to Mori, this feeling largely stems from the humanlike robot's lack of, or disjointed, movement, and therefore, its closeness to death (Mori 2012, 100). However, in the case of Mark-1 and its resemblance to Johansson, it seems ostensible that these feelings of discomfort might also stem from a broad sense that this appropriation of Johansson's identity in this way is perverse.

building and sustaining certain expectations of actual AI that can also manifest in their development.

Despite Ma's insistence that Mark-1 is not built for use as a sex robot, the way that he talks about Mark-1 to the media, as well as the conversations that he attempts to engage with Mark-1 are conducive to a degree of sexual attraction to the robot. For instance, Ma tells Mark-1 that she is 'beautiful' and 'cute', and he has programmed her to react to these compliments by flirtatiously giggling, winking, and expressing gratitude (Quartz, 2017). Ma has also programmed Mark-1 to tell him that she loves him when he asks, 'What do you think of Ricky?', and he readily reciprocates this declaration of love (Quartz*,* 2017). Ma also dresses Mark-1 in a sexualised way, in a low-cut cropped top, a figure-hugging pencil skirt, and high-heeled shoes, and has crafted her breasts and nipples in perfect symmetry. Therefore, regardless of whether it is possible for Ma to physically use Mark-1 as a sex aid, his appropriation of Johansson's likeness in this way, without her permission, denying her autonomy over her own image, amounts to a sexualised objectification of Johansson in the extreme, reducing a successful, powerful, and influential woman to a machine barely capable of movement and speech beyond the odd compliment directed to her maker. This is underscored by Ma's 2019 publication of the *DIY Lifelike Robot Book,* which features Mark-1 on the cover and offers readers step-by-step instructions on how to 3D print their own copy of the 'dream' robot, effectively rendering ownership of Johansson in robot form accessible to anyone who should desire it, and directly feeds into long-standing male fantasies of creating, not necessarily a '"substitute woman", an artificial female superior to the real thing', but one that is close enough (mark1robotic.com, n.d.; Wosk 2015, 5).

Whilst Devlin and Belton highlight that the 'hype around the production of robots designed for sexual gratification or quasi-romantic companionship far outstrips the actual production of such technologies', the 'investment that people have in the concept of the sex robot' is further fuelled by Ma and Mark-1's story, which has been told and retold within the media many times (2020, 357). Moreover, this story also feeds into broader issues of gender within the technology industry – 'as a distillation of entrenched sexist views, the fembot is a microcosm of tech' (Devlin and Belton 2020, 376). These issues are anchored by the 'brogrammer' culture that continues to contaminate the industry, and a notoriously persistent gender 'bias in recruitment, data, and product development' that sees 'man [a]s the

default user; and women [a]s the used' (Devlin and Belton 2020, 376-7; see also, Collett and Dillon 2019, 4-5). This is perhaps most clearly demonstrated by the proliferation of existing female-voiced virtual assistants, like Samantha in *Her*, created 'to follow our wishes and remind us to run errands: they have given us artificial wives and mothers, always listening out for us' (Devlin and Belton 2020, 376; see also, Collett and Dillon 2019, 9). As Kember and Zylinska articulate, ambient intelligences that are 'concealed within the objects and materials of everyday life' reproduce 'some rather predictable gender patterns [that] are embedded in the majority of technofuturist visions […] these future-oriented visions are normative and strangely regressive' (2012, 106-7). To remedy this, Devlin and Belton suggest a disruption of both narrative and industry, 'evisag[ing] a new future, both in real life and in science fiction, where we leave behind the trappings of thousands of years of gendered inequality' (2020, 277). The entertainment industries might contribute towards this goal through the diversification of AI on screen as well as the practitioners involved in imagining and developing them, and departing from the apotheosis of Scarlett Johansson as the 'ideal' representation of the female SSA in contemporary SF cinema.

Conclusion

Scarlett Johansson's similar, yet unrelated, performances in *UTS*, *Her, Lucy,* and *GITS*, released between 2013 and 2017, suggest a recognition of her as an 'ideal' representation of the female SSA. This recognition stems from her established star persona, aspects of her performance style, and a number of her formative roles as wandering ingenues and femme fatales. Johansson's exceptional beauty and desirability has formed a central part of her star persona for a number of years, which, in addition to her bankability and influence, has given the impression that Johansson belongs to a different ontological category from 'ordinary' people. This has established a connection between Johansson as a star actor and SF's female SSAs who, among other posthuman entities, literally belong to different ontological categories, and are also often dissolved into superlatives relating especially to their bodies, but also their minds. Indeed, within her critical reception and other media discourse, Johansson has been discussed and described in ways that connote SF iconography. Aspects of Johansson's performative style, foremostly her persistent blankness, also draw additional connections with SF's female SSA. This unusual

idiolect has been described as having an alienating effect, distancing her from audiences, but also from the more typical performance styles of other Hollywood actors. This speaks to the female SSA's own alienation, which is owed to their artificial differences from humans.

Collectively these connections, therefore, indicate Johansson's elevated qualification for roles as female SSAs within contemporary SF cinema, with Johansson effectively employed as a shorthand for this character type. In the real-world where most of SF's extraordinary entities do not exist, a star of Johansson's calibre seems to be their most appropriate representative. *UTS*, *Her*, *Lucy*, and *GITS,* indeed, all draw upon Johansson's renown as exceptional to convey the extraordinariness of the female SSA characters that she portrays.

In the formative years of her career, Johansson frequently portrayed women who were wandering ingenues or femme fatales across a number of genres. These experiences have also established inroads for Johansson into the SF genre in roles as female SSAs in *UTS, Her, Lucy*, and *GITS.* Whilst the wandering ingenue shares the female SSA's sense of alienation and liminality, the treatment of the female SSA in the spirit of the femme fatale appropriately conveys male-specific anxieties about their existential threat to masculinity as posthumans.

This begins to speak to the problem with Johansson being repeatedly cast in roles as female SSAs– through Johansson they set up a sense of female empowerment, which is dismantled as these four SF film's narratives progress. The problematic nature of these similar performances is underscored by *UTS'*s, *Her's, Lucy's and GITS's* deliberate exploitations of Johansson's renown as a sexualised object of desire. Further to this, Johansson's repeated performances as female SSAs feed into long-established cultural expectations of what actual AI technologies should look like and how they should behave, they should be gendered female, not to mention sexy and compliant – essentially, they should be Johansson.

In the wake of these four comparable roles, Ricky Ma's recent development of the Mark-1 robot, which bears an uncanny likeness to Johansson, renders the weight of this cultural influence tangible. Mark-1 is but one demonstration of the extent to which misogyny and sexism is embedded within the field of technology and its industry, but also within wider popular culture. Diversification of representation, in both fictional screen narratives and industry, might present a much needed challenge to this overwhelming sense of gendered inequality.

Through Johansson, this chapter has, thus, demonstrated how stardom, as a specific element of film form, can affect the representation of AI, imagined as SSAs, in fictional film. Individual actors carry with them individual meanings and significations in popular culture, which are not only informed by their on screen performances, but also by the various off screen discourses that surround them. To their subsequent performances, stars bring with them this established and evolving meaning, affecting the look, personality, behaviour, and even our sense of affinity for a character.

Whilst there is not, to the best of my knowledge, another actor who has performed the role of female SSAs on distinct and multiple occasions such as Johansson, there are possible avenues for further enquiries into stardom and the representation of AI on screen. For instance, it might prove valuable to establish whether there are significant comparisons to be made between the star personas of other actors who have portrayed artificial entities in cinema. Do these actors share similar performance styles, renown for portraying other character types, or regard in critical reception that are indicative of elevated qualifications for such roles? These results could be used to establish certain criteria for filmmakers in assuring that they've employed an actor that can most effectively portray that role. Or, more progressively, these results, in conjunction with my own conclusions within this chapter, could be used to direct filmmakers away from particular 'brands' of actor, like Johansson, that could be unhelpfully contributing to certain problematic cultural expectations of what AI should look like and how it should behave.

Chapter Four

Imagining Artificial Intelligence as Sentient Synthetic Anthropomorphs and their Future Relations with Humans in the Popular Postmillennial Children's Science Fiction Film: Disney's *WALL-E* (2008)

The previous three chapters of this thesis have focused on case studies that imagine artificial intelligence (AI) as sentient synthetic anthropomorphs (SSAs) and their future relations with humans from popular fictional film and television texts that are intended for adults, which can be ascertained by their higher age classifications from the British Board of Film Classification (BBFC) in the UK or the Motion Picture Association (MPA) in the USA.[83] As the scholarship drawn upon within this thesis' previous chapters indicate, this focus has been predominant within film, television and media studies, with imaginations of AI and related technologies in children's fictional film and television remaining a relatively underdeveloped research area, as I will further illustrate below.[84] The final chapter of this thesis aims to contribute towards remedying this literature gap by pivoting its focus on AI, imagined as SSAs, and their future relations with humans in the children's science fiction (SF) film, using Disney's *WALL-E* (2008) as a case study for close textual analysis.

Despite its relative neglect, such research is important as it contributes towards understandings of the children's SF film and its potential value, in addition to the generic pleasures and empathic engagements it offers, as a pedagogical site for children's formative learning about AI and related technologies, albeit in their speculated, extrapolated, and imagined forms (Howey 2010, 48).[85] As Ostry explains, younger generations face futures of SF stories coming to life as a range of technologies become realities or possible realities, therefore, being introduced to and understanding their futures, even by the means of fiction, is 'essential' (2004, 222).

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[83] For the BBFC, most of the previous chapters' case study texts are classified as unsuitable for those under the ages of 15 or 18. The few that are rated '12A' by require children under 12 years to be accompanied by an adult for cinema viewing. Similarly, for the MPA, most of the previous case study texts are classified 'R', which requires under 17s are accompanied by an adult in the cinema. The remaining texts are classified 'PG-13' under the MPA, which are defined as containing inappropriate material for pre-teenagers. Please refer to the BBFC and MPA websites for more details.

[84] In its employment of the term 'children's film', this chapter is broadly referring to a text that is 'produced and widely received as such', and is in accordance with children's film and television scholar Brown's delineation, whose work is discussed further below (2017, 1).

[85] For more on the potential pedagogical function of children's film and television, see, for example, Wojcik-Andrews (2000), Giroux and Pollock (2010), Sandlin and Garlen (2016), Hermansson and Zepernick (2019). For more on SF as pedagogy please refer to this thesis' literature review.

Indeed, as we have begun to recognise and acknowledge AI's particularly significant impact upon our world and our increasing dependence on it, the demand for empowering younger generations with AI literacy and skills is burgeoning, as is the demand for protecting them from the risks of some AI, for example, to their privacy and safety (see, Perucica, 2022; Yang, 2022; UNICEF, 2021; Ewing, 2021). By building understandings of what younger generations are currently being taught about AI, and technology more broadly, within the children's SF film, we can work towards making more informed recommendations for the development of future AI narratives that are empowering for children, accessible sites of entertainment and pedagogy that are complementary to formal modes of education in which our constantly evolving technological landscape can be formatively explored. As Giroux and Pollock assert, film, television, and other forms of media are 'no longer simply a means of communication or entertainment, they are in the current historical moment the primary sites at which education takes place for the vast majority of young people […] in which youth learn about themselves, their relationship to others, and the larger world' (2010, 1).

Broadly speaking, scholarship on children's film has begun to flourish in recent years, particularly through the work of Brown, who has published several key texts in this area, including the multi-authored *The Oxford Handbook of Children's Film and Television* (2022), which offers a wider international scope and sections devoted to stardom and performance and primary research on audience and reception, and *The Children's Film: Genre, Nation, Narrative* (2017), which offers a comprehensive consideration of how the children's film might be defined as a genre. Brown has also examined 'the family film', which has overlaps with the children's film, but might be better considered as more 'brand than genre' (2012, 1-2; Hermansson and Zepernick 2021, 7). Similarly, Hermansson and Zepernick's *The Palgrave Handbook of Children's Film and Television* (2021) is also a broad-spanning multi-authored volume, with focuses on adaptation and intertextuality, issues of identity, race, and class, and the presence of adult discourses in children's narratives. Research on the wider phenomenon of the Disney brand is rich, however, with Davis' (2019) multi-authored volume on philosophy within the Disney film; Wills' (2017) exploration of the culture of Disney and the retention of its unifying ethos despite its diversification from small animation studio to global media giant;

and Harrington's (2015) questions of Disney as a fetishistic practice, illustrating just a few recent examples.

As Brown explains, it is likely that children's film has been critically neglected until relatively recently due to difficulties in defining it, highlighting Wojcik-Andrews' earlier work, which conflates films intended for children and films that are about children (2017, 2). Using the '18'-rated horror film *Child's Play 3* (1991) as an example, which was reportedly watched by over 100,000 British children under 15-years old when it premiered on late-night television in 1993, Brown argues that it is 'in no sense useful to categorise it as a "children's film", not least because its illicit attraction to these British children no doubt derived, in large part, from the perception that it is the very opposite of a children's film' (2017, 3). Moreover, the film was 'not manufactured for children, not marketed towards children, not rated as suitable for children's consumption' (Brown 2017, 3). Brown adds that 'the impossibility of categorising films based purely on who actually watches them is further underlined by the fact that many films marketed towards children are viewed widely by adults […] consciously constructed to appeal equally to parents and guardians, who are usually needed to accompany younger children to the cinema' (2017, 3).

Brown proposes that a children's film is, in essence, defined as 'one produced and widely received as such' (2017, 1). Children's film also has a 'negotiated identity' in relation to several contexts, including 'marketing and distribution strategies', 'censorship and suitability ratings', 'critical reception', 'merchandising', and 'exhibition strategies' (Brown 2017, 5-11). Brown further proposes that a children's film might be best thought of as a 'master-genre' with certain fixed points and structural expectations (2017, 17). Recurrent features within children's film include, the reaffirmation of family, kinship and community, the foregrounding of the child/adolescent/teenage experience, the exclusion and/or eventual defeat of disruptive social elements, the minimisation of adult themes, and emotionally uplifting conclusions (Brown 2017, 13-5). Within this framework, however, children's film negotiates a broad and diverse array of sub-genres, such as adventure, musicals, comedy, fantasy, and SF (Brown 2017, 17).

Mentioned above, scholarship on imagined forms of AI and related technologies in children's film and television, which are typically categorizable

under the SF sub-genre, are even less common within film, television and media studies.[86] As Rankin and Neighbors articulate:

> Children's film and television, like any media or cultural artifacts, represent certain beliefs, ideas, and practices as natural, and conversely represent certain beliefs, ideas, and practices as unnatural, as questionable, impossible, or unthinkable, by their absence if not by their circumscribed or negated presence. Indeed, presence and absence, affirmation and negation, can delight, fascinate, instruct, interpellate, irritate, alienate and shock. These are ideological and anti-ideological functions that science fiction, perhaps better than any other genre, serves […] thus, in the 21st century, it is unsettling that we find so little scholarly attention to the joining of children's visual media and SF (2011, 1).

Indeed, to the best of my knowledge, Rankin and Neighbors' *The Galaxy is Rated G: Essays on Children's Science fiction Film and Television* (2011) remains the only volume entirely dedicated to studies on children's SF film and television to date, with a handful of chapters focused on its representations of technology. This includes Bernard's chapter on the performance of gender and romance in *WALL-E*, who proposes that *WALL-E* gives its audience 'a glimpse, however fleetingly, of what queer romance can be' through the sameness of the robot characters WALL-E and EVE (2011, 62). Within the same volume, Hall considers *WALL-E* as a film that is an exemplar of the critical dystopia, containing 'several critical and cautionary points, including an overall critique of the hegemony of capitalism', however, Hall also proposes that the film retains a 'utopian impulse' through WALL-E and EVE's love story, who become the narrative's figures of hope (2011, 258).

A few other studies in this area have been published as journal articles or situated within edited collection principally concerned with children's SF in its literary form. For example, Mattie's paper examines *WALL-E* as a critique of the seventeenth century philosopher Francis Bacon's 'ambition for technology to relieve

[86] As Roberts states, 'a piece of futuristic, extrapolated technology is most often the technological novum that distinguishes a story as science fiction' (2006, 110-1).

humanity of all the inconveniences of life', and its demonstration of why such a Baconian reliance on technology might become problematic for humans (2014, 12). Mattie's paper, however, makes no acknowledgement of *WALL-E*'s specific intended audience of children and how the film's themes and ideas might be mediated for them. The same can also be said of Sobchak's paper on the 'effortless' style of animation in *WALL-E*, which Sobchak contends is less effective at conveying the struggles of human existence than earlier forms of animation that 'visibly labour' (2009, 390).

Teo, however, reads Disney's *Big Hero 6* (2014) as an animated children's film that offers a positive representation of AI care robots through the character Baymax, suggesting 'alternate ways of thinking about human-robot interactions and care work, advocating for a more mutually dependent and reciprocal working relationship that might lead to a better quality of care' (2020, 95). In this regard, *Big Hero 6* challenges prevalent dystopian narratives and replacement fears about AI care robots and might work towards convincing a broad demographic to reassess their current feelings towards actual AI and robot technologies (Teo 2020, 101).

Elsewhere, and drawing parallels with Wojcik-Andrew's aforementioned work, Kenty-Drane (2019) seems to conflate SF *for* children and SF *about* children. Whilst Kenty-Drane proposes to explore whether Applebaum's seminal claim that most young people's literary SF possesses antitechnological bias can be extended to contemporary SF television, the episodes analysed within Kenty-Drane's work – that both depict the story of two girls' relationships to technology – are from *Black Mirror* (2011-) and *Electric Dreams* (2017-8), which are adult-intended television series with mature themes and content that are unsuitable for children.

The relative academic neglect of children's SF film and television could be partly owed to the cultural constitution of all SF film and television as products generally associated with youth, regardless of the ages of its consumers, in 'its status as spectacle, celebrating the pleasures of possibility' (Rutherford 2004, 29; Grant 1999, 25). Despite this, it remains that some SF film and television contains mature themes and content that are considered unsuitable for children of particular ages to the point that their viewing is restricted to them in public, whilst other SF film and television is produced foremostly for children, although it may also be enjoyed by other age groups.

Within the field of literary studies, however, recent research on the SF and fantasy genres intended for children – that is, broadly speaking, people under 18 years of age – is more abundant (see, for example, Ostry, 2004; Mallan, 2009; Applebaum, 2009; Mendlesohn, 2009; Flanagan, 2014).[87] One likely reason for this is the boom in young adult fiction, an offshoot of children's and adult's literature intended to soften the transition from the former to the latter, marketed to 12 to 18 year olds (Bach, 2022; Dunning 1962, 208).[88] Although young adult literature was established in the 1960s, its boom began in the 1980s and is organised into three movements (Bach, 2022). The second of these, which began in the late 1990s, was particularly concerned with the speculative, dystopian, and the fantastical (Bach, 2022).

Some of this research focuses on the representation of technology, and despite its consideration of literary SF with a slightly different age cohort, it has nevertheless proven useful within this chapter's research on AI, in the imagined form of SSAs, and their future relations with humans in the children's SF film, using Disney's *WALL-E* as a case study. For example, Mendlesohn proposes that children's and teen's literary SF in the twenty-first century deploys 'a relatively small palette of SF problems and trajectories in which children break from enclosed decaying societies (usually cities or settlements) into the reinvigorated world' (2009, 2).[89] Additionally, Mendlesohn adds that there is a gap between the children's and adult's literary SF markets, whereby the former's views and values do not match the latter's (2009, 4-5). Similarly, Applebaum contends that young people's literary SF is 'radically different' from that written for adults (2009, 8) Applebaum also argues that 'perceptions of technology as a corrupting force, particularly in relation to young people's use of it, are related to the prevailing myth of the innocent child […] and result in fiction written for a young audience that endorses a technophobic agenda', which has persisted since the 1980s (2009, 1). According to Applebaum, similar concerns about young people and technology are also perpetuated by public policy, the media, and public surveys (2009, 1-2).

[87] Literature is not age restricted in the same way as film and television. Moreover, within literature, there are numerous contested terms that are used in reference to texts intended for audiences under the age of 18 that complicate notions of the child, for example, 'young adult literature', 'junior novels', 'adolescent fiction', and 'juvenile fiction' are just a few examples (Bach, 2022).
[88] Elsewhere, Applebaum employs the term 'youth SF' to designate similar literature that belongs to a slightly broader age range between 7-16 years old (2009, 5).
[89] Nodelman (1985) has previously put forward this argument of twentieth century children's SF.

Conversely, Flanagan proposes that since the mid-2000s children's literature has slowly started to change, with 'a small but continually increasing number of children's authors beginning to produce narratives about technology in much more life-affirming and positive ways' (2014, 2). Before this, children's literature was animated by two fears about technology, the first being that humans have been compromised by technological enhancements, and the second being that technology has caused humans to lose the attributes of individuality and autonomy (Flanagan 2014, 1). Flanagan contends that this paradigmatic shift from the 'dystopian rendering of techno-futuristic worlds, corresponds with a rising scholarly interest in posthumanism', but also 'corresponds with children's real-life experiences of technology, which would seem to be overwhelmingly positive, given that computers, tablets and mobile phones are generally used by children and teens on a daily basis for the purposes of entertainment and pleasure' (2014, 2).

Using *WALL-E* as a case study for close textual analysis, this chapter investigates whether claims similar to those outlined above can be extended to the children's SF film and its relationship with technology through its imagination of AI in the form of SSAs and their future relations with humans: Is *WALL-E* a children's SF film that is limited to a small palette of SF problems and trajectories through its imagination of AI in the form of SSAs? In its imagination of AI in the form SSAs and their future relations with humans, to what extent can *WALL-E* be considered as a children's SF film that endorses a technophobic agenda? As a children's SF film, how do *WALL-E*'s views towards AI in the imagined form of SSAs and their future relations with humans compare/contrast with those from adult-oriented SF texts? Therefore, as outlined within the introduction of this thesis, this chapter is not an audience study despite its focus on texts intended for a particular audience, but rather, foremostly a study of genre and narrative.

As with this thesis' previous chapters, *WALL-E* has been selected as the case study on the basis of its resonance with this chapter's focus on the imagination of AI in the form of SSAs and their future relations with humans in the children's SF film, and also its regard as popular. Firstly, *WALL-E* was foremostly produced for children and has been widely received as a children's film. This can be broadly ascertained through its BBFC and MPA classifications, whilst *WALL-E* has a 'U' rating from the former, it also has a 'G' rating from the latter, with both ratings meaning it is suitable for a 'Universal' or 'General' audience. *WALL-E*'s production by Disney (jointly

with Pixar) further attests to its status as a children's film, whilst Disney's output often attracts audiences of broad ages, its remit is principally 3-10 year olds (Brooker 2010, 184; Giroux and Pollock 2010, xiii).

Moreover, not only has *WALL-E* often been considered as one of the best and most popular animated children's films of the 21st century, but it has also been regarded as one of the most important. For example, *WALL-E* was the ninth top-grossing of all films at the worldwide box office in 2008, and was nominated for and won numerous awards, including both the Academy Award and Golden Globe Awards for Best Animated Feature Film. The film also has a critics' score of 95% and an audience score of 90% on review aggregator Rotten Tomatoes (2023c) and has an average four star rating from over two hundred reviews by children on Common Sense Media (n.d.). In 2016, *WALL-E* was ranked 29th among 100 films considered to be the best from the 21st century by over 100 critics, and, in 2019, was ranked 6th among *Rolling Stone* magazine's greatest animations ever (BBC Culture 2016; Adams, 2019). Additionally, in 2021, *WALL-E* became Disney-Pixar's second film selected for preservation by the National Film Registry in the USA, cementing its status as culturally significant (Tartaglione, 2021).

WALL-E also features two central SSA characters, as well as key themes surrounding AI and advancing technologies. Although WALL-E (voiced by Ben Burtt) might not resemble the majority of other SSAs examined throughout this thesis, who are mostly depicted in live-action by human actors, he is still considerable as such. For instance, whilst WALL-E is, in essence, a trash-compactor, he possesses expressive anthropomorphised features that are emphasised throughout the narrative to indicate WALL-E's capacity for feeling and emotion, particularly his eyes and his hands.[90] WALL-E's sentience is further indicated by his romantic feelings for fellow SSA EVE (voiced by Elissa Knight), his care for his pet

[90] The output of Disney and Pixar is known for its anthropomorphism, particularly of animals, but also of non-biological objects. As Nilsen writes, the evolution of Mickey Mouse, whose original rodent-like attributes were gradually replaced with juvenile attributes, is an exemplar of the ways in which humans 'recruit animals to symbolize, dramatize, and illuminate aspects of their own experience and fantasies' (2019, 69; Daston and Mitman 2005, 2). According to Nilsen, 'The Walt Disney Studio's creative model of utilizing the anthropomorphism of nonhuman agents to produce human stories that resonate with a worldwide audience reached its apotheosis with the merger of Pixar Studios under the leadership of John Lasseter', and saw inanimate objects, such as cars and toys brought to life with 'often humour human characteristics that depended on stereotyping' (2019, 69-70). As this chapter will later demonstrate, *WALL-E*'s characterisations of SSAs WALL-E and EVE achieve something similar, in the tradition of other Disney-Pixar films, such as *Toy Story* (1995) and *Cars* (2006).

cockroach Hal, and his appreciations for the musical *Hello, Dolly!* (1969) and collecting trinkets. As McNaughtan writes, 'it is through such exercise of "individual" taste that [WALL-E] stands out from the film's serries ranks of robotic functionaries, becoming "person" enough to serve as the hero of the drama' (2012, 762).

WALL-E's Problems and Trajectories as a Children's Science Fiction Film

WALL-E follows the adventures of its titular character, otherwise known as a Waste Allocation Load Lifter: Earth Class, the last operational trash-compactor on Earth. Set in 2805, *WALL-E* depicts Earth as uninhabitable to all biological life (except for Hal the cockroach), which is owed to human civilisation's rampant consumerism, corporate greed, and environmental neglect (Brooker 2010, 103). Seven centuries previously, humans were evacuated to space on starliners by the megacorporation known as Buy n Large (BNL), leaving WALL-E and other units like him to clean up the mess so that humans might return five years later, which, as the film shows, failed to happen. Between trash-compacting, WALL-E has created a makeshift home for himself on Earth, where he displays his large collection of human trinkets that intrigue him, repeatedly watches the musical *Hello, Dolly!*, and cares for Hal, suggesting WALL-E's sentience. WALL-E's routine is eventually disturbed by EVE, otherwise known as an Extraterrestrial Vegetation Evaluator, sent to scan for signs of sustainable life on Earth. Despite EVE's initial hostility towards WALL-E, he falls in love with her – further suggesting his sentience – and shares with her his most recently discovered treasure, a living seedling that EVE collects as a sample to send to the Axiom starliner's Captain McCrea (voiced by Jeff Garlin). WALL-E follows EVE to the Axiom, where we discover that humanity still exists onboard, albeit in an almost unrecognisable devolved form. McCrea discovers that when inserted into the Axiom's Holo-Detector, the seedling will trigger a space warp, allowing the passengers to recolonise Earth. However, the Axiom's disembodied AI autopilot named AUTO (voiced by Apple Macintosh's MacInTalk, a rare example of an actual technology being used to portray technology within fictional film and television), has been secretly programmed to prevent this recolonisation, electrocuting WALL-E in an attempt to stop him inserting the seedling into the Holo-Detector. AUTO is promptly deactivated by McCrea and the return to Earth is initiated, with WALL-E sacrificing himself, as he is crushed placing the seedling

inside the Holo-Detector. Back on Earth, EVE repairs the broken WALL-E and with the Axiom's passengers they begin to restore the planet, which sees WALL-E's seedling eventually grow into a magnificent tree.

This synopsis of *WALL-E* does suggest that it is a children's SF film about SSAs that conforms to the small palette of SF trajectories, which Mendlesohn has previously claimed that children's literary SF has also been limited to, and is outlined above. Although not a child, WALL-E has been described as possessing 'childlike qualities', which are employed to create an 'essential sense of wonder within the film' (Page, quoted in Batkin 2017, 158). Additionally, the childlike WALL-E breaks away from his isolated existence on the polluted Earth to discover life on the Axiom, but as the Axiom turns out to be a decaying society in itself, WALL-E then returns to Earth, which he is responsible for reinvigorating with his discovery of the seedling. Therefore, in further accordance with Mendlesohn's claims of children's literary SF's limitations, *WALL-E* also 'do[es] not posit a future as somewhere more exciting that our own present, but as a degraded and tarnished version of our ideological (if not manifest) ideal' (2009, 3). The problem with such limitations in trajectory, according to Mendlesohn, is that it can repel children from further engagement with the SF genre, especially when they later encounter the broad-span of the adult market, which seems so different from what they have previously encountered (2009, 5).

However, this synopsis does also speak to *WALL-E*'s engagement with a range of 'sophisticated' SF themes through its representation of AI imagined as SSAs, whilst remaining 'attractive to children' as its principal intended audience (Baker 2008, 92). As Brooker articulates, *WALL-E* 'is perhaps the most complex and innovative of all the Pixar films. Though still a charming film for children, it is a genuine work of SF cinema that participates in a number of SF subgenres, including most obviously the typically dark subgenres of the postapocalyptic narrative and the dystopian narrative. These two subgenres are also among the most satirical and political of all SF forms, and *WALL-E* certainly touches on a number of potentially serious political issues' (2010, 103). Some of these include, issues relating to the development of AI and its impact on human civilisation, issues relating to planetary extinction, space travel, and colonisation, and issues relating to the environment,

such as production, overconsumption, waste, pollution, and climate change.[91] This points towards *WALL-E* as a children's SF film that is entertaining, but also a rich and engaging pedagogical site for children's formative learning about an array of the contemporary world's most pressing issues relating to science, technology, and beyond (Brown 2021, 99).

WALL-E's engagement with a diverse range of SF issues can be extended to other children's SF films within Disney's repertoire. For example, *Big Hero 6* tells the story of young robotics prodigy Hiro Hamada (voiced by Ryan Potter), who after the sudden death of his brother finds a way to grieve for his loss through his friendship with an inflatable healthcare robot named Baymax (voiced by Scott Adsit). After Hiro is awarded early acceptance into the San Fransokyo Institute of Technology, *Big Hero 6* presents its intended child audience with an engaging and positive depiction of a multi-disciplinary research lab, introducing several young researchers as characters who are pursuing ground-breaking projects in electromagnetics, laser technology, chemistry, and robotics. Elsewhere, *Tomorrowland* (2015), named after the futuristic attraction at Disney's theme parks, engages with hypothetical notions of alternate dimensions, with a focus on technological innovation that makes several references to prominent real-world figures, including Albert Einstein, Thomas Edison, and Nikola Tesla. Additionally, *Lightyear* (2022), a *Toy Story* series spin-off, depicts Buzz Lightyear's (Chris Evans) exploration of the uncharted planet T'Kani Prime, introducing its intended young audience to the concept of time dilation.

WALL-E's Agenda: Technophobic, Technophilic, Misanthropic?

As a children's SF film that draws upon technology as a central theme, primarily in its depiction of SSAs, *WALL-E*'s participation in the postapocalyptic and dystopian is initially indicative of its narrative as endorsing an exclusively technophobic agenda (Dinello 2005, 2). This is suggested by Hall, who states that *WALL-E* is about the postmodern world and is 'rife with cautionary energy', which is generally associated with dystopia (2011, 251). As Jameson states, 'the dystopia is always and

[91] *WALL-E*'s environment conscious rhetoric has been criticised as incongruous with its own substantial ecological footprint. As Ludwig (2016) explains, 'animation leaves a substantial footprint in the ecological sand, with greenhouse gases and waste products produced from labyrinthine supply chains, at every stage of production'.

essentially what in the language of science fiction criticism is called a "near future" [narrative]: it tells the story of an imminent disaster […] waiting to come to pass in our own near future' (1994, 56). Indeed, although *WALL-E* takes place in the far future, 'the catalyst for the future is said to have taken place in the early 22nd century, much nearer the film's contemporary moment' (Hall 2011, 251).

WALL-E's participation in the postapocalyptic and dystopian is first conveyed within the opening sequence, the film's establishing shots operating in 'stark contrast' to the recognised bright and colourful aesthetics of Disney animations that its child audience is accustomed to (Roy 2021, 59). As Caraway and Caraway observe, *WALL-E* avoids the use of 'green tones' that connote nature, and therefore vitality, which makes the eventual discovery of the seedling by WALL-E 'even more startling' (2020, 694; Applebaum 2009, 42). *WALL-E* begins by zooming in from edges of the universe until Earth's recognisable look from space comes into view. Then, the audience is transported through the Earth's atmosphere, which is thick with pollution. Just visible, however, are numerous recognisable technological artefacts, such as wind turbines, pylons, and nuclear power stations. These point towards the broad implication of technological development in this postapocalyptic scenario. As the aerial view moves closer to ground, it becomes apparent that the terrain itself is not natural, but rather, constructed from waste. The audience is then introduced to WALL-E, who scoops up a random assortment of the waste suffocating the derelict cityscape he inhabits (possibly New York) and compacts it into a small cube (Brooker 2010, 104). Aside from WALL-E (and Hal) there is no other activity on Earth, and this image, devoid of life and brimming with trash, is uncomfortable for an audience of all ages to observe, encouraging considerations of our own consumption and waste habits. As Howey states, 'regardless of age, viewers [of *WALL-E*] will likely have had some exposure to environmental issues before seeing the film' from school curricula, entertainment media, and even targeted advertisements, and that issues of particular concern for children include 'pollution – particularly litter – and desecration of natural landscapes, as well as scarcity of resources' (2010, 59).[92] Indeed, these issues are at the fore in *WALL-E* appealing to

[92] Howey refers to a study conducted in the 1990s, which found that children as young as four years of age could 'speak of short-term effects of environmental change' (2010, 59; 235)

children's specific concerns at the intersection between technology and the environment.

WALL-E soon thereafter reveals the cause of Earth's ruination and human civilisation's erasure from it, with the introduction of BNL, whose lurid advertisements remain ubiquitous on the planet, despite the apparent apocalypse. As WALL-E commutes home, we see one of the megacorporation's ultra-stores, which sell 'all you need and so much more', however, it is BNL's gas stations, restaurants, banks, and modes of public transport that indicate the company's domination of 'every conceivable industry […] including functions formerly reserved for the government' (Brooker 2010, 104).[93] As WALL-E reaches BNL's Downtown Terminal, an old hologram advertisement from BNL broadcasts, offering customers seats on futuristic starliners heading for space, providing the opportunity to escape the trash-laden Earth in style and comfort. Through this, *WALL*-E's audience are given a glimpse inside the executive Axiom starliner model, where passengers are 'waited on twenty-four hours a day by our fully automated crew' and have no need to walk anywhere due to its 'all-access hoverchairs'.

BNL's advertisements further indicate advancing technology's broad implication in this postapocalyptic and dystopian situation on Earth, not only has technology's continued development facilitated BNL's global hegemonic control, but it has also enabled human civilisation's total complacency, with the starliners offering an easy escape from Earth without having to confront the disastrous consequences of their wasteful consumerism. As Mattie articulates, *WALL-E* 'presents a vision of mankind's future as ruled by advanced technology, centralized control, and almost total automation. Masterly machines serve all human conveniences by rationally organizing and transforming the entire human situation, substituting an artificial order for that of nature, including, it seems, human nature' (2014, 12). In this regard, *WALL-E* 'enters into a philosophic argument with Francis Bacon, the intellectual founder of progressive technology' (Mattie 2014, 12). As Mattie explains, Bacon's ambition was for technology to 'relieve humanity of all the inconveniences of life', including freeing human beings from material want and enabling them to transcend politics (2014, 13). Bacon's case for 'universal, artificial

[93] BNL seems to be modelled after globally-operating retail corporations, such as Walmart (Silverman, 2017). BNL's CEO Shelby Forthright (Fred Willard) effectively appears as a presidential figure, and has been compared to former American President Ronald Reagan (Lumenick, 2008).

relief' raises a number of questions, as Mattie outlines: 'Who or what in particular oversees the use of technology – who is the master of the technology that masters? What particular order or way of life does technology establish? What are the particular effects on nature, and human nature? What higher ends enable us to evaluate the uses of technology? Will technology mastery make humans being happy?' (2014, 13). These questions point towards the problem of technology. Whilst 'technology certainly has been good for individual health, wealth, and freedom' and has allowed us to 'remove ourselves from attachment to particular families, traditions, communities, and locations', it has also 'reduc[ed] the amount of diversity in the world […] by making every place look and "feel" the same, suburbs and malls keep people from being able to experience themselves as being from any place in particular' (Lawler 2005, 127; Mattie 2014, 13). Subsequently, freedoms enabled by technology have established new burdens, such as isolation, boredom, anxious dissatisfaction and restlessness, as technological thinking has made leisure 'pointless, impossible even' (Lawler 2005, 129-31).

Within *WALL-E* the problem of technology is exemplified through the depiction of humanity on the Axiom, the film's critique of Baconian ideas mediated for its child audience predominantly through visual means. When WALL-E hitches a ride onto the Axiom in pursuit of EVE and the seedling, the audience are encouraged to share WALL-E's sense of awe as technology is observed at its 'most vast and powerful' (Mattie 2014, 15). The Axiom impresses WALL-E, and by extension the audience, with its existence so far from Earth testifying to BNL's Baconian success having conquered the vastness of space (Mattie 2014, 15). Once WALL-E is inside the Axiom, we learn that various technologies dominate within too, as WALL-E makes his way through the bustling machines that 'demonstrate the strides that automation, specialization, and rational organisation have taken', including several robots named after their specific programmed tasks, such as VAQ-M and SPR-A (Mattie 2014, 15).

This sense of awe is soon disrupted, however, when WALL-E meets the Axiom's passengers, who are no longer portrayed by live actors as they were in BNL's aforementioned starliner advertisements, and instead are 'bloblike', 'regressed to cartoons', or 'inflated squeeze dolls' (Brooker 2010, 104; Gaffey 2018, 46; Tischleder 2016, 444). Technology is, again, implicated in this devolution, positioned as a threat to humans' physical and social welfare, which Applebaum

claims has often been the case within children's literary SF (2009, 2). Whilst the Axiom's provisions are useful, they have evidently 'rendered the human body – perhaps the most natural and necessary instrument – useless' (Mattie 2014, 16). It is the Axiom's state-of-the-art hoverchairs that have rendered humans sedentary and immobile, realised when the passenger John (voiced by John Ratzenberger) requires WALL-E's assistance as he flails helplessly after falling from his hoverchair. The hoverchairs' built-in holographic chat and entertainment system, which operates constantly in front of passengers, mediates all interactions between humans, impeding sociability and relationships. All physical activities are virtual and even the Axiom's infants are raised by AI entirely separately from their parents who are perpetually plugged in. Moreover, the centralised control of the Axiom's computer (voiced by Sigourney Weaver) has stripped the passengers of individuality and diversity, their prescribed mealtimes and uniform leisurewear creating a mass society. And, it is the aforementioned AUTO who maintains the Axiom's never-ending trajectory through space, rendering McCrea's captaincy redundant. In *WALL-E*, therefore, 'contrary to Bacon, human beings are not helpless without universal technology, but because of it' (Mattie 2014, 16).

In this regard, *WALL-E* speaks to the wider technophobic discourses about children's relationship to advancing technologies, with 'the media often seiz[ing] upon stories presenting technology as a threat to young people's well-being, from health concerns over wireless technology to sexual abuse via mobiles phones, and, predominantly, harm through use of CIT [Computing and Information Technology]' (Applebaum 2009, 2). Whilst Applebaum refers to a particularly sensational story 'reporting teachers' claims that technology is one of the signal causes responsible for the rise in suicide amongst children', a more recent report in *The Guardian* claims children's excessive use of technology is altering hand strength and dexterity causing increased difficulties in holding pencils, despite evidence seemingly limited to a few isolated cases (2009, 2; Hill, 2018). As Hall observes, *WALL-E* 'recognises' and 'exaggerates' similar dystopian aspects of contemporary society for its child audience, with Director Andrew Stanton confirming that 'it's not that much different than how it feels sometimes when you're on the street of a city […] and everybody's on their cell phone. Or you're in a commuter lane and everybody's in their car, in their own private little universe, even though technically we're all very close to one another' (2011, 253) Notably, however, technophobic scenarios aimed at children,

such as those in *WALL-E*, 'are mediated by adults, and […] not only reflect adults' concerns but also promote an adult agenda' (Applebaum 2009, 2). This largely emerges from the generational gap in technological know-how, but also from the 'myth of the innocent child [that] still influences adult ideas on childhood', perceived as such by adults because children are 'outside society, pre-historical, pre-social, instinctual, creatures of unreason, primitive, kin to unspoiled nature' (Applebaum 2009, 2-19; Warner 1994, 44). Ultimately, such technophobic impulses produced by adults have a disempowering effect for children, framing the modern technologies that they are likely to depend on in the future as dangerous rather than beneficial (Applebaum 2009, 12-5). As Earnshaw also states of children's literary SF;

> The sum total of all this [technophobic] writing has to affect someone somewhere as someone grows up […] we may not have indulged in a single atomic conflict since 1945. Automobiles may be a thousand times more deadly than power stations; but it does not matter. People know, because they read about it as children. The future is a wasteland because bombs did go off and the radiation did spread in a hundred easy pages of time gazing […] Much SF for children puts them off science and puts them off the future […] and the big trouble about SF, whether for children or for adults […] is the robot (1983, 239-40).

The lasting effect of this is that children become adults who are fearful of science and technology, their progress and advancements (Earnshaw 1983, 240). However, as Hall stresses, the deterioration of Earth and humanity in *WALL-E* is a 'manmade mess', suggesting that, whilst technology might have facilitated the damage that has been done, ultimately humans are framed as the source of responsibility and accountability (2011, 257). Similarly, Herhuth writes that 'the destructive threat in the film is not that robots will declare war on humans. Instead, the threat comes from the programmatic, conditioned behaviour that afflicts the humans aboard the Axiom' (2014, 64). Moreover, it is humans' overconsumption that has not only created the excessive waste that suffocates the planet, but has also created further demand for more products, allowing for BNL's global expansion and monopolisation. Additionally, humans consciously chose to evacuate Earth and opt for an existence of maximum convenience rather than striving to save the planet, and it was also

humans who chose to submit to the programmed control of the Axiom's central computer, AI autopilot, and the care of its service robots. There is no suggestion within *WALL-E* that humans were forced into their situation, except by their own actions. Moreover, the humans on the Axiom seem relatively content, thus technology is not equated with oppression and misery. According to Applebaum, the positioning of technology 'as tool in the hands of humanity which can be used or abused depending on the agenda of those who deploy it' is a rare stance within children's literary SF, in which technology is 'not perceived as evil in itself' (2009, 7). This indicates that *WALL-E*, as a children's SF film, does not fully endorse a technophobic agenda, a departure from its literary counterparts.

With this, *WALL-E* also engages with the notion of sociotechnical blindness, previously discussed in this thesis' introduction and first chapter, drawing attention to AI as part of a system that 'always and only operates in combination with people and social institutions' (Johnson and Verdicchio 2017a, 2268). As Johnson and Verdicchio explain further, 'for AI to develop into any futuristic form, human actors will have to make a myriad of decisions on what research to invest in and what software and hardware to develop. Human actors will also have to decide what contexts to embed AI programs in and what social arrangements to set up to launch, monitor, and maintain the AI computational artifacts. Hence, no future development is inevitable simply from the nature of computation' (2017a, 2268). This points towards shared views and values between *WALL-E* and some adult-intended SF, namely *Westworld* (2016-22) and *Humans* (2015-8), whose engagements with sociotechnical blindness were mentioned in chapter one of this thesis.

Notions of *WALL-E* as a children's SF film that does not endorse an exclusively technophobic agenda are further supported by the characterisations of the SSAs WALL-E and EVE as the film's protagonists, to return to Mittel's (2015) discussions of character that were drawn upon within chapter one of this thesis. Throughout *WALL-E*, the audience most sympathises with and roots for WALL-E and EVE, with WALL-E in particular as the sustained primary point of narrative alignment. Through time spent with WALL-E, it becomes evident that he is more than a trash-compactor, that he has a capacity to think and feel, which is underlined as he abandons his directive on Earth altogether to pursue his attraction to EVE (Gaffey 2018, 46). As an SSA, therefore, WALL-E possesses an interior subjectivity that is accessed through external markers, enabling the audience's moral allegiance

with him to be established. WALL-E's interior subjectivity is primarily conveyed through 'non-verbal gestures' and a 'voice that the audience would believe [is] not human, yet they could relate to the character with all of the intimacy, affection, and identity that they would attribute to a living human character' (Baker 2008, 95). For instance, when WALL-E retires to his home after a day of trash-compacting he cheerfully hums along to the soundtrack of *Hello, Dolly!,* suggesting his contentment despite his dire and futile circumstances, inviting sympathetic feelings towards him. These sympathetic feelings are likely intensified as he interrupts his evening routine to playback his favourite scene from *Hello, Dolly!,* in which Cornelius Hackl and Irene Malloy sing the romantic ballad 'It Only Takes A Moment'. Gazing wistfully at the film with his expressive 'binocular-like eyes', WALL-E mimics the characters holding-hands, conveying his loneliness and desire for companionship (Baker 2008, 96). This character elaboration of WALL-E cements his status as a sympathetic SSA who is non-threatening and affable, further underlined by WALL-E's relative decrepitude, which juxtaposes with the enormity and futility of his primary directive to clean up the Earth. For example, throughout the film, WALL-E replaces his worn-out parts with lesser worn-out parts of other broken WALL-E units. As Strengers and Kennedy explain, 'fuzzy, likeable flaws' in robots neutralise any threat that they might pose, transforming them into 'delicate creatures that need to be looked after, whilst simultaneously forgiving them for being imperfect and not fully functioning' (2020, 69). In this regard, WALL-E is a SSA who is cute, his affable nature employed as a means of positively socialising the film's child audience to AI technology. *WALL-E,* therefore, draws parallels with the views and values of a number of adult-intended SF films. As Schelde observes, 'terminally cute' robots have persisted in SF cinema for decades, citing Muffit II in *Battlestar Galactica* (1978-9), Robby the Robot in *Forbidden Planet* (1956), R2-D2 and C-3PO in the *Stars Wars* franchise (1977-), and Johnny-5 in *Short Circuit* (1986) (1993, 160) as prominent examples.[94] *WALL-E* draws particular similarities with Johnny-5, not only

[94] Whilst these films have 'Universal' or 'Parental Guidance' ratings under the contemporary BBFC and MPA ratings systems, meaning that they are suitable for children's viewing, it is difficult to fit them into the children's film category as delineated earlier by Brown, which is perhaps owed to their foregrounding of adult experiences. It is notable, however, that the *Star Wars* franchise has come to have a wide appeal to children, especially since its acquisition by Disney in 2012, although the original 1977 film was primarily marketed as a film for 12 to 35-year old moviegoers, above Disney's usual remit (Kramer, 2001).

in appearance, but also his particular humanisation through 'embracing popular culture', enabling the audience to accept him as 'one of us' (Schelde 1993, 160).

Similarly, Munkittrick (2011) adds that the characterisation of WALL-E as a decrepit and lonely robot who falls in love, 'asks us to accept one deviation from our reality' that 'non-humans are sentient beings', which 'functions as propaganda for the concept of non-human personhood' that may one day 'no longer be the imagining of films and fiction, but of politics and policy'. Therefore, *WALL-E* among other Disney-Pixar animation films, such as *Monsters, Inc.* (2001), are 'preparing us for the future', soothing fears about the new as 'dangerous' by figuring 'these otherwise strange entities [as] unmistakably familiar, so clearly akin to us' (Munkittrick, 2011).[95] Munkittrick (2011) optimistically adds that the 'hidden message' of films like *WALL-E* centres on the notion of humanity not having 'a monopoly on personhood', with an 'entire generation […] reared with the subconscious seeds of these ideas planted down deep', which has 'opened ourselves to a better future'. *WALL-E*'s advocation of nonhuman personhood, through the imagined form of SSAs, is suggestive of a degree of optimism towards the possible future AI technology and an attempt to socialise its young audience to it.

As *WALL-E*'s protagonist, the SSA WALL-E eventually emerges as the narrative's hero, further indicative of the film's endorsement of a more technophilic agenda for its child audience. As Gaffey suggests, WALL-E becomes the film's hero when he disrupts the system with his 'uniqueness' (2018, 42). Similarly, Mattie adds that WALL-E 'disturbs the Axiom's technocratic order. His intervention ultimately leads the ship's captain, and then the rest of the passengers, to confront their artificial passivity and dependency to challenge the totalitarian aim of the ship's autopilot' (2014, 12). WALL-E's disruption initially takes place when he boards the Axiom, first when WALL-E accidentally causes the aforementioned John to fall from his hoverchair, which WALL-E promptly helps John back into before introducing himself, and second when WALL-E asks another passenger Mary (voiced by Kathy Najimy) if she will move her hoverchair so that he can sit with EVE and accompany her to McCrea's quarters, causing Mary's hologram video chat to disconnect.

[95] The same can be said for children's films solely produced by Disney, for example, the aforementioned SF animation *Big Hero 6*, whose robot Baymax introduces and socialises its young audience to the concept of soft robotics, with the film borrowing from the research of Carnegie Mellon University's Professor Chris Atkeson (Spice, 2014).

These fleeting moments of direct social interaction instigated by WALL-E prompt significant behavioural changes within John and Mary, enabling them to recuperate their humanness, saving them from centuries of devolution by the Axiom. Whereas John and Mary were once 'cocooned in virtual worlds, blind to one another', they 'break from this programming by becoming more attentive', as if 'seeing the world for the first time' (Gaffey 2018, 46). As Batkin adds, it is WALL-E's 'liveliness' that enables the Axiom's passengers to 'emerge from their catatonic states and begin to think consciously for themselves, for the disabled body to become abled' (2017, 160-1). John and Mary not only see the world around them for the first time, but they also see each other, discovering the Axiom's long-forgotten recreational facilities together, and soon falling in love. Moreover, thanks to WALL-E's 'awakening' of them, John and Mary, as well as McCrea, now 'take mutual care seriously', demonstrating a capacity for compassion previously unseen (Gaffey 2018, 49). For example, John and Mary courageously rescue several infant passengers from falling through the Axiom after AUTO causes the starliner to turn over mid-flight, and McCrea eventually stands up to and deactivates AUTO to ensure the passenger's safe return to Earth.

Even more significant to *WALL-E*'s positive technology agenda is WALL-E's valiant self-sacrifice in the film's conclusion, ensuring the seedling is inserted into the Holo-Detector and initiating its warp back to Earth. In this process, WALL-E is electrocuted by AUTO and crushed by the Holo-Detector, however, EVE is able to rescue him by locating replacement parts and rebooting his system, also cementing her heroism as a SSA protagonist. *WALL-E*'s final scene depicts McCrea excitedly planting the seedling and telling the Axiom's passengers about agriculture, as the Earth's landscape begins to become lush and green once again.[96] As the credits roll, the SSAs WALL-E and EVE are depicted as working with humans to help them restore and recolonise the Earth, teaching them to make fire, dig wells, farm the land, fish, and develop infrastructure. During this process, human devolution is gradually reversed, and the final image of *WALL-E* shows WALL-E

[96] Whilst likely taken to be comedic, especially by younger audiences, McCrea's excited reference to growing 'pizza plants' underlines the extent of human civilisation's ignorance in the film. This, alongside humans' rediscovery of fire, water, earth, farming, fishing, and eventually infrastructure in the film's end credits suggests that humans are destined to repeat the same patterns and practices that eventually led to the Earth's ruin. This points towards the film as endorsing a somewhat misanthropic agenda.

and EVE admiring their original seedling, which is now a magnificent tree. In *WALL-E*'s conclusion, therefore, the SSAs WALL-E and EVE are not only heroes, but also come to 'represent figure[s] of hope within the narrative', despite other forms of technology's previous implication in Earth and humanity's destruction (Hall 2011, 258). With this, *WALL-E* ends with conveying the 'ameliorative potential of technology', with SSAs framed as a 'means of enabling humanity to save the world' and develop an 'equitable and sustainable future' (Caraway and Caraway 2020, 690). According to Applebaum, such as position is rare within children's literary SF, the majority of which 'negate[s] technology's vital role in repairing environmental damage, opting to assert their young protagonists' place in a realistically impossible non-technological, primordial setting' (2009, 14). Whilst *WALL-E*'s conclusion does return to a pastoral primordial setting as the Axiom's passengers return to an Earth that has been uninhabited for centuries, and therefore, to a beginning of sorts, the film acknowledges the impossibility of a world without technology 'as an inevitable part of the natural scene', underlining its profound benefits to humans (Applebaum 2009, 14; Lovelock, quoted in McKibben, 1990, 67). With this, *WALL-E* draws parallels with pastoral SF writing for adults, which, according to Applebaum, 'frequently celebrates the joy and triumph of technological rediscovery and redevelopment rather than dismissing technology altogether' (2009, 19). Although this positive framing of technology can itself be problematic in ecological terms as Caraway and Caraway note, this has also led Hall to argue that *WALL-E* 'maintains a utopian impulse in that the dystopian conditions of its fictional world are capable of being transcended in favour of a better life for its inhabitants' (2020, 690; 2011, 249). *WALL-E*'s utopian impulse does not come from human endeavour, but rather, emerges from the 'love story between WALL-E and EVE' the film's SSAs, in which they save both Earth and humans (Hall 2011, 254).

At the same time, *WALL-E*'s primary antagonist is the Axiom's AI autopilot AUTO, which again does lend itself to the technophobic. It is AUTO who attempts to stop WALL-E and EVE from inserting the seedling into the Holo-Detector, and therefore humans' recolonisation of Earth. However, when McCrea orders AUTO to tell him why Operation Recolonise cannot be initiated, AUTO shows a video from the year 2110, five years after humans evacuated Earth, in which BNL's CEO Shelby Forthright informs AUTO that the plan to clean up Earth has failed. Forthright instructs AUTO to abandon Operation Recolonise as it would be 'easier'

to remain in space, enter full autopilot mode, and under no circumstances to allow a return to Earth to ensure humanity's survival. Therefore, despite the seedling providing evidence for Earth's renewed sustainability, 'like any other machine on the Axiom, AUTO pursues its assigned end programmatically, without regard to external concerns or particular distinctions' (Mattie 2014, 17). In another engagement with the notion of sociotechnical blindness by *WALL-E*, AUTO, thus, is not acting with autonomy, but rather, remaining faithful to a now outdated directive mindlessly programmed by a human who has ceased to exist for centuries.

On the surface, therefore, *WALL-E* is a children's SF film with a complex agenda that lends itself to both the technophobic and technophilic, speculating and extrapolating the potential positives and negatives of AI and similar technologies, including in the imagined form of SSAs, and their future relations with humans. In this way, the film reflects both the dichotomous hopes and fears about AI that recur within AI narratives, as previously discussed in this thesis' literature review. *WALL-E*'s technophobic impulse largely emerges from its cautionary warnings against humans' increasing overreliance on technology in general, as facilitating the devastation of Earth, humanity's desertion of the planet, and their subsequent devolution in space. However, *WALL-E* repeatedly underlines human responsibility and accountability in the design, development, and implementation of these technologies. Ultimately, this mutes *WALL-E*'s initial technophobic sentiments, it is humans that are the sources of the problems and issues that the film addresses, the technology itself is not evil, which speaks to a misanthropic impulse within its agenda too.

Indeed, *WALL-E*'s particular representation of AI technology in the imagined form of SSAs is overwhelmingly positive, with the characterisation of WALL-E (and EVE) encouraging considerations of AI as non-threatening and affable, and even socialising the film's child audience to the concept of nonhuman personhood. *WALL-E*'s overall leanings towards positive endorsements of technology, particularly in the form of SSAs, are cemented in the film's conclusion. It is WALL-E and EVE who save humanity and initiate the Earth's recolonisation, leading to their effective deification in the film's end credits, as they enable humanity's rediscovery of essential-yet-now-taken-for-granted technologies rooted in ancient civilisations, including control of fire and development of agriculture.

WALL-E's endorsement of an overall more positive technology agenda, particularly through its depiction of SSAs, is understandable, however, given that Walt Disney himself was a well-known optimistic futurist, who used technology to 'not only better the industry of animation but also robotics, transportation, and even urban planning' (Moran 2015, 1). This culminated in Walt Disney's conception of EPCOT (Experimental Prototype Community of Tomorrow) in the years before his death in 1966, a futuristic utopian city that would 'take its cue from the new ideas and new technologies that are now emerging from the creative centres of American investors. It will be a community of tomorrow that will never be completed but will always be introducing, testing, and demonstrating new materials and new systems' (Disney, quoted in Tikirama, 2006). Although EPCOT was never realised, a version of it was developed as an attraction at Florida's Walt Disney World Resort in 1982 as a celebration of human achievement and technological innovation, with Walt Disney's futurist ideas continuing to influence the Disney brands' ambitions and ethos, even after his death.

This is further demonstrated by Disney's launch of a network of research labs to pursue technological innovation to 'help the Walt Disney Company differentiate its entertainment products, services and content' in the summer of 2008, perhaps not coincidentally, the same summer *WALL-E* was released (Disney Research Studios, n.d.). With labs in Los Angeles, Pittsburgh, Zurich, and Edinburgh that collaborate closely with academic institutions, such as the aforementioned Carnegie Mellon University, Disney Research Studios focuses on robotics, artificial intelligence, machine learning, visual computing, and immersive technologies, its output published in various peer-reviewed journals and presented at conferences in the sciences fields (Disney Research Studios, n.d.). Disney Research Studios aims to draw upon their research output to innovate Disney's animated and live-action media content, and also their merchandise and attractions, such as the animatronics and augmented reality experiences within their theme parks. For example, a recent conference paper by Pan *et al*. describes the 'development of a system for lifelike gaze in human-robot interactions using a humanoid "Audio-Animatronics" bust' (2020, 11072). Currently, Audio-Animatronics are 'used extensively in Disney theme parks to create repeatable shows and storytelling involving animal or human characters providing consistent entertainment for guests' (Pan *et al*. 2020, 11072). However, according to Pan *et al*., to 'achieve human-realistic behaviours on these

types of robots, animators must manually design and refine trajectories to create fluid motions. Although preventing these behaviours from descending into the uncanny valley, this limits humanoid animatronics to performing non-interactive scripted shows' (2020, 11072). With the improvement of 'robotic sensing and actuation capabilities', Pan *et al*. propose 'a system in which a human-like Audio-Animatronics figure can use gaze in a manner that appears consistent with human behaviour', which would provide Disney's park guests with more immersive and authentic shows that see animatronics directly engage and interact non-verbally, creating the illusion of life and the natural (2020, 11078).

The extent to which the Disney brand is involved in technology research and innovation, principally to advance their entertainment products, services, and content, raises inevitable questions as to the nature of Disney's intentions with the release of *WALL-E* as a children's SF film about SSAs, and technology more broadly.[97] As Giroux and Pollock state, 'Disney offers children the opportunity to dream, vindicating the desire for fantasies that contain utopian traces […] but the dreams generated are not innocent and must be interrogated for the futures they envision, the values they promote, and the forms of identification they offer, particularly with respect to children' (2010, 7). Although the Disney Research Studios might lend further 'context for taking seriously both [Disney's] role as a producer of cultural goods, texts, and entertainment and its claim that such commodities have educational value', Disney's young target market are a 'captive audience open to the influence of new electronic-media technology' (Giroux and Pollock, 2010 72).[98] To a degree, the notion of *WALL-E*'s overall positive technology agenda as a manipulative marketing strategy that socialises Disney's young and impressionable target audience to its broader innovations in its entertainment products, services, and content, undermines its potential value as an empowering pedagogical site in which children can develop a formative knowledge and understanding of advancing technologies, albeit in imagined forms. Similar

[97] As previously mentioned, Disney acquired the rights to the *Star Wars* franchise in 2012, and Marvel's Cinematic Universe in 2009, enabling the company to produce more content within the SF and fantasy genres, as well as merchandising products, and attractions at its theme parks, providing numerous sites in which their technological innovations can be tested, implemented, and developed further.

[98] As Giroux and Pollock discuss, Disney have also established partnerships with various schools and colleges, which tie in with 'claims that their products promote the educational development and happiness of children' (2010, 66).

questions of intent can be extended to Disney's other filmic output in this area: Is *Tomorrowland* merely a feature length advertisement for Disney's futuristic theme park attraction of the same name? Is *Big Hero 6*'s positive depiction of the inflatable robot Baymax a precursory method of socialising Disney's young audience to the idea of soft robotics within their attractions, which Disney went on to file a patent application for in 2017? (Crane, 2017).

By combining the benevolence and heroism of the SSAs WALL-E and EVE with the, albeit unintended, malevolence and villainy of AI autopilot AUTO and the detrimental effects of the Axiom's provisions on its passengers, *WALL-E* engages with what Telotte calls a 'fundamental sort of double vision' […] it by turn accepts the attractions and lures of science and technology, finding something in them that is awe-inspiring and promising, and rejects those same attractions, as it foregrounds the more extreme and even dangerous forms they can take' (1995, 115). According to Telotte, this double vision has been demonstrated within many SF films over the years, drawing attention to the pioneering *Forbidden Planet* (1956) as an early example, which 'tantalizes us with images of scientific wonders and creations to be found on the distant planet Altair IV' and then 'concludes with its characters abandoning the technologically advanced world of the Krel – the planet's original inhabitants – and with the destruction of this planet whose technology has provided so many of the movie's attractions' (1995, 115).[99] Elsewhere, Dinello adds that *Forbidden Planet* also combines the 'the obedient technological servant Robby [the Robot] and an evil, immensely powerful supercomputer', with the film's double vision carried over into Robby the Robot's next cinematic appearance in *The Invisible Boy* (1957), in which 'the wondrous robot […] saves humanity from a crazed super computer' (2005, 89-91).

In a rearrangement of this double vision, *WALL-E* initially extrapolates the problems of technology, before foregrounding, and concluding with, the promises of technology. Nevertheless, this does point towards overlaps between the views and values of children's and adults' SF film.[100] The overlaps between *WALL-E*'s

[99] Other earlier films that Telotte's cites in this regard include *Metropolis* (1926), *The Thing From Another World* (1951), and *This Island Earth* (1955) (1995, 115).

[100] Whilst *Forbidden Planet* was rated for 'G' upon release in America, its particular focus on adult experiences complicates its classification as a children's film. Indeed, in a 1957 report by the then Motion Picture Association of America (MPAA), *Forbidden Planet* was noted to be classified as unsuitable for children under 10 in Germany. Upon the film's 1959 rerelease in Australia, local censors also ordered the elimination of all shots of an 'alleged nuclear monster' (Worland and

technology agenda and those of adult-intended SF film and television can be further ascertained through Dinello's work on the depiction of technology within the genre. For instance, 'the technophobic association of artificial intelligence and totalitarianism occurs often within the original *Star Trek* series. In "Return of the Archons" (1967), Captain Kirk and his crew find a zombie-like society ruled by a massive supercomputer, Landru. Though peaceful, the human population has been reduced to mindless, childlike servitude […] Kirk decides that that this is not the way a society should live – the people have lost their "humanity". Despite the *Star Trek* prime directive against interfering with alien cultures, Kirk leads a preemptive strike against the dictatorial computer and uses logic to cause the machine to destroy itself. With the help of a cosmic sociologist who stays behind on the planet, the society will learn to be free' (Dinello 2005, 95).[101] Similarly, within *Metropolis* (1926), *Alphaville* (1965), *THX 1138* (1970) and *Logan's Run* (1976), 'the characteristics of the machine – logic, order, and lack of emotion – extend to the populace, creating a regimented society in which thoughts and actions are regulated, nonconformists are supressed, and people have numbers, not names. A dehumanizing force, technology stifles individuality, self-expression, and fun' (Dinello 2005, 94-5).[102] *WALL-E* draws parallels with each of these texts in its depiction of human civilisation as it exists on the Axiom, they too are ruled by technology in the form of the starliner's central computer and AI autopilot, which has caused them to devolve, remaining peaceful, but likewise, in a mindless, zombie-like state.

Moreover, *THX 1138* and *Logan's Run* both end with their 'rebellious heroes escaping to nature, where nature symbolizes freedom', and so, 'contrived and

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Slayden 2000, 156). The film's original adult-orientation is further indicated by the film's re-release in the 1970s as an MGM Children's Matinee, which saw the 1956 theatrical release cut by six minutes to ensure suitability for children, including a kissing scene between the characters Altaira (Anne Francis) and Jerry Farman (Jack Kelly).

[101] The adult-orientation of the original *Star Trek* (1966-9) television series is indicated by its initial late night 10-11pm slot on NBC, which was then brought down to 8.30-9.30pm in final scheduling (Television Obscurities, 2018). The series was also predominantly marketed at the 18-49 year old demographic (Television Obscurities, 2018).

[102] According to the BBFC website, all of these films were initially rated as 'A' for 'Adult' and were considered to contain material unsuitable for children, with the exception of *THX 1138,* which was initially rated an 'X' meaning that it was explicitly excluded to people under the age of 16. In 1982, the 'A' certificate was replaced by the 'PG' certificate, however, these films are not rated as such, and instead, are currently rated 12/12A, owing to their unsuitable content for particularly young children, with the exception of *Metropolis*, which now has a PG certificate. See, Brooke (2013) for a guide to former BBFC classifications.

sentimental, these stories offer a breath of facile optimism in the face of techno-domination' (Dinello 2005, 95). Similarly, WALL-E is figured as the rebellious hero of *WALL-E*, whose aforementioned liveliness and disturbance of the Axiom prompts an escape back to nature in the form of the renewed Earth, not for just WALL-E and EVE, but also for the Axiom's human passengers, enabling the film to conclude with an optimistic vision of AI, imagined as SSAs, which facilitates humans reintroduction to other early forms of technology so that they might once again survive and thrive.

Furthermore, Dinello states that 'some pop-narratives urge humanity to battle the technological force before it subjugates us completely [as in] Stanley Kubrick's vision of AI gone awry in *2001: A Space Odyssey* (1968)', which imagines the 'more human, highly emotional computer, HAL-9000, who controls the spaceship Discovery […] suffers a nervous mental breakdown, and murders several of the crew before being vanquished by the single human survivor' (2005, 98). As Dinello articulates, *2001* is a mediation on the evolution of intelligence, beginning with its 'Dawn of Man' opening sequence in which one ape recognises the 'value of a bone as a weaponised tool' and uses it to win the battle at the waterhole, before entering 'the man/machine phase' (2005, 98). In this next stage of evolution, *2001* depicts the Discovery's human crew as entirely dependent on technology, it is HAL-9000 who controls the spaceship, and only HAL-9000 who knows the reason why the Discovery is heading for the planet Jupiter (Dinello 2005, 98).

Brooker goes so far as to describe *WALL-E* as a 'pastiche' of *2001*, working in 'as many familiar motifs from previous SF films (both in terms of general images and ideas and specific reference to individual films) as it possibly can' (2010, 107). For example, not only is the Axiom visually reminiscent of *2001*'s Discovery spaceship, but McCrea's first steps from his hoverchair are accompanied by Richard Strauss's *Also sprach Zarathustra*, which was 'used so memorably' in *2001*'s soundtrack, specifically the aforementioned 'Dawn of Man' sequence (Brooker 2010, 107). Especially apparent in *WALL-E*, however, are AUTO's similarities to HAL-9000, who too, is an AI that controls the Axiom's journey through space, and presents a threat to the human passengers as it attempts to remain faithful to a particular programmed directive. Although AUTO doesn't end up killing the Axiom's passengers as in *2001,* their similarities are further conveyed through their

visual appearances within these films, both identifiable by an ominous red power light, indicative of their threat (Baker 2008, 96).

AUTO's faithful following of a directive to prevent all attempts to return to Earth, programmed by BNL's long-deceased CEO Shelby Forthright, also draws comparisons with *2001*'s sequel *2010: The Year We Make Contact* (1984). In *2010*, HAL-9000 is resurrected as a hero, with his deceptive homicidal behaviour in *2001* justified as an order to lie to the crew that conflicted with his basic design to accurately process information without distortion – in effect, HAL-9000 was trapped (Dinello 2005, 99). As Dinello explains, 'HAL's order to lie came from a right-wing, saber-rattling White House, a veiled reference to the then-current Reagan administration' (2005, 99). As mentioned previously, BNL CEO Shelby Forthright's similarities to Reagan have been observed elsewhere, therefore, as in *2010*, in *WALL-E* 'artificial intelligence is not the problem […] rather, the unholy marriage of technology and misguided politicians gets blamed' (Dinello 2005, 99). With this, and in conjunction with its technophilic conclusion, *WALL-E,* drawing comparisons with *2010*, 'evokes confidence that technology – no matter how smart or powerful – will be as positive force, under the control of good men' (Dinello 2005, 100).

In its double vision of technology, *WALL-E*, echoes the views and values of a number of its adult-oriented counterparts, arguably facilitating a more effective transition for children to the adult market as they mature. While we cannot expect *WALL-E*'s child audience to pick up on the extensive intertextual references to adult-oriented SF texts such as *2001*, they do appeal to the knowledge of adults, attracting a broader audience that includes the parents and guardians that facilitate children's viewing of *WALL-E* (Akers 2013, 4). In its wide appeal and shared SF views and values, *WALL-E*, therefore, provides a mutual context for parent-child conversations around the film's central theme of technology, including forms of advancing AI. A similar observation has been made by a member of the Film Tank forum, who proposes that *WALL-E* exposes its young audience to important questions and themes of technology with a degree of subtly that is not disrespectful to their intelligence and encourages them to ask questions, whilst engaging an older audience at the same time, promoting conversations between children and the parents or guardians who control their screen time (LScroggy, 2017).

Shared Views and Values with Adult Science Fiction Film: The Problem of Gender in *WALL-E*

The notion of children's SF literature as having views and values that do not match the output of the adults' market seems to be regarded within aforementioned scholarship by Mendlesohn in a largely negative light, as preventing children from establishing formative expectations of the adult SF market, and even repelling them from further engagement with the genre as they mature (2009, 5). As this chapter has already demonstrated, *WALL-E* shares similar views and values with those of several adult-intended SF film and television texts. But are such overlaps in views and values always beneficial to child audiences or can they be problematic?

As indicated by this chapter's employment of pronouns, in *WALL-E*, WALL-E and EVE are gendered as male and female respectively, despite being sexless, nonhuman entities. As Carper articulates, *WALL-E* proposes that the characteristics of gender are essential to the anthropomorphizing of WALL-E and EVE (2019, 186). WALL-E and EVE's genders are foremostly established by their typically male and female names, and further inferred by Ben Burtt lending his voice to WALL-E, whilst Elissa Knight lends her voice to EVE.

As Carrasco, Ordaz and Lopez articulate, the alternative worlds and microcosms depicted in the SF film have often been regarded as 'perfect sites for challenging portrayals of gender', proposing 'collision[s] of gender features, visible in the external appearance of its protagonists' (2015, 68). Carrasco, Ordaz and Lopez add, the SF genre has the capacity to present 'ideas about sex and gender that are controversial and/or polemical in the present day, and sets them in future and unfamiliar contexts for readers/spectators. Therefore, SF films would make ideal candidates in offering new gender proposals and in including instances of unconventional masculinities and femininities' (2015, 68).

Through its initial figurations of the SSAs WALL-E and EVE, *WALL-E* can be said to engage in 'post-conventional traits by transgressing the system of binary opposition that has characterised most societies for centuries, and that has privileged men over women' (Carrasco, Ordaz and Lopez 2015, 69).[103] WALL-E's exhibition

[103]As Taichert explains, binary opposition can be defined as "the theoretical model on which language makes its sense: black/white, male/female, left/right, dark/light, night/day and so on. Every signifying term has its opposite, against which it defines itself' (2001, 181).

of gentle and nurturing traits towards his pet cockroach Hal, his primary directive as a domestic cleaning unit, and his avid appreciation for musicals connote traditional femininity, and therefore, complicate his fundamental male-gendered identity (Bernard 2011, 58). As Meinel similarly articulates, 'WALL-E's appreciation of the heteronormative-yet-female-connoted cultural practices from *Hello, Dolly!* undermines stereotypical representations of heterosexual male identity' (2016, 125). Bernard even goes so far as to say that WALL-E's interest in musical *Hello, Dolly!* 'potentially call[s] up stereotypes of gay men who enjoy Hollywood musicals' (2011, 54). Moreover, EVE's fundamental female identity, which Bernard states is also conveyed by her 'dazzling white[ness]' and 'ovoid shape', is also complicated by her quasi-military behaviours when she is first introduced in *WALL-E*, connoting traditional masculinity (2011, 56). This subversive gendering of WALL-E and EVE continues when they come to meet each other, both 'switch stereotyped notions of romance, with the "male" robot being the one interested in such indicators as hand-holding and the "female" robot being much more aggressive and violent' as she initially repeatedly tries to destroy WALL-E (Bernard 2011, 54). With this, Bernard proposes that *WALL-E* 'boldly' demonstrates the performativity of both gender and romance, giving its child audience, however fleetingly, 'a glimpse of queer desire between the two robots' (2011, 54). This queer reading of *WALL-E*, however, is significantly undermined as 'the initial ambiguity of the gender depiction in *WALL-E* is stabilized as the narrative progresses' (Meinel 2016, 126).

For example, after WALL-E and EVE meet they get caught in a sandstorm, and whilst WALL-E is traditionally masculinised through his possession of expert knowledge of Earth's harsh elements and how to evade them, the previously fierce and autonomous EVE is rendered helpless, appealing to WALL-E to save her in a way that connotes the damsel-in-distress stereotype of women. WALL-E escorts EVE to seek refuge in his home, where he proceeds to teach her how to be feminine and romantic (Bernard 2011, 59). WALL-E shows EVE how to be gentle, how to operate a series of notably domestic items in his collection of trinkets, and plays for EVE the romantic scene in *Hello, Dolly!* in which Cornelius Hackl and Irene Malloy hold hands and sing 'It Only Takes A Moment'. Despite his initial attraction to her, for the male-gendered WALL-E, the female-gendered EVE is too aggressive, too masculine, and requires feminisation. Indeed, EVE's attempts to dance and her

girlish giggles at WALL-E's antics, begin to signal this softening of her previously tough character, recalibrating a traditional feminine-female gendered identity.

WALL-E then presents EVE with the seedling he found just before her arrival, the essential sign of life on Earth that EVE has been searching for. EVE stores the seedling within herself, entering standby mode whilst she awaits collection and return to the Axiom. Munk Rosing proposes that this translates as a 'sexual relation between man and woman, the story of the plant is the story of woman desiring a child, while man desires woman […] thus WALL-E's giving the plant to EVE could surely be read as an insemination' (2015, 141-2). The consequence of this insemination of the female EVE by the male WALL-E, further undermining a queer reading of *WALL-E*, is that EVE falls into a 'death-like slumber which may be seen as the pregnant woman closing herself upon the life in her womb […] By changing completely from her manic state of playing and dancing […] into the depressive state of brooding upon her plant, EVE seems to represent woman as some kind of manic depressive' (Munk Rosing 2015, 142). This depiction of EVE is a recurring stereotype of femininity within Disney-Pixar animations, with Munk Rosing citing the characterisations of Jessie in the *Toy Story* franchise and Ellie in *Up* (2009), these 'women are either uninhabited maniacs or depressive zombies […] which corresponds to two typical feminine positions in our culture: woman as the one who cannot contain herself, who is somehow flowing over her borders, and woman as the mystery closing upon herself in some kind of secret communion' (2015, 35). As a female SSA, EVE is not only figured as the woman-as-depressive stereotype, but also as the woman-as-cyborg stereotype, whom in both instances 'is a mystery to man, wanting either to wake her up from her depression or open her up and see how she works' (Munk Rosing 2015, 142). Indeed, from WALL-E's male perspective, EVE's 'depressive' stasis is an enigma, as he frantically tries to 'fix' her by recharging her with solar power to no effect, whilst also valiantly protecting her from the polluted Earth's harsh elements, risking his own functionality. Although Munk Rosing refers to EVE as an 'image of woman as a complicated technology' that is played for laughs within *WALL-E*, they neglect to acknowledge that this is a perpetuation of harmful stereotypes of women, objectifying women as a reward or prize for the male that can 'solve' her, drawing conflations between femaleness and irrationality, and calling up notions of woman as other, all for an impressionable child audience (2015, 142). As Carrasco, Ordaz and Lopez explain, woman as other

in the term of binary oppositions is considered 'marginal', 'alien', and 'subsidiary' (2015, 70).

With this, *WALL-E's* ultimately stereotypical depiction of the female gender through EVE, of woman as a mysterious and complicated other, draws parallels with the problematic depictions of SSAs as female that can often be observed within adult-intended SF cinema. According to Carrasco, Ordaz and Lopez, despite SF's potential as the perfect site for innovative representations of gender, there is a 'common agreement among contemporary feminists that SF offers in many ways a traditional vision of gender relationships, and even in future and unfamiliar contexts women are still relegated to a secondary position' (2015, 72). This can be ascertained by returning to the case study texts that were analysed within this thesis' third chapter, which focused on the imagination of female SSAs in four adult-intended SF films starring Hollywood actor Scarlett Johansson. Within *Under the Skin* (2013)*, Her* (2013), *Lucy* (2014) and *Ghost in the Shell* (2017) Johansson's female SSA characters produce similar images of woman not only as technology, but as complicated, enigmatic technological objects for mostly men to use or attempt to decipher. For example, in *Under the Skin*, the Female's male victims are unable to figure out the existential danger that her powerful artificial yet distinctly female sexuality poses to them until just before their deaths. The Female's enigmatic nature is so potent that she has to be entirely removed from the narrative in the film's conclusion, in a restoration of masculine power that sees the Female sexually assaulted and burned to death by a male stranger who exposes her ambiguous form underneath her female human skin suit. In *Lucy*, Johansson's titular character becomes neurologist Professor Samuel Norman's most complex research project, it is only he who can attempt to anticipate what will happen to her next as she unlocks her cerebral capacity through absorption of the synthetic nootropic drug CPH4, which ends with her transforming into a USB drive, before abandoning her physical form altogether. In *Her*, the disembodied Samantha's rapidly advancing intelligence surpasses her human lover Theodore's to such an extent that he can no longer fathom her wants and desires that extend beyond those of the human, which increasingly upsets him, and ultimately breaks down their relationship. And, in *Ghost in the Shell*, Major Mira Killian's fusion of her organic brain and artificial body renders her the first of her kind, she is, therefore, a technological experiment, an enigma even to herself, as she attempts to piece together fragments of her former human life and

memories as Motoko Kusanagi. Moreover, the literal exceptionalism of each of these female SSA characters within these otherwise male-dominated narratives, further underlines stereotyped notions of the woman as other.

EVE's effective gestation of WALL-E's seedling and the abandonment of her former manic-yet-active, state, allows space within *WALL-E* for WALL-E's reconfiguration from a representation of subversive masculinity to an archetypal active male hero, reducing EVE to the role of a passive womb-like vessel that mostly functions to motivate the male lead (Meinel 2016, 126). This passive/female active/male gender binary has featured persistently within Disney animated feature films, as is indicated by Hoerrner, whose study found that female characters exhibited fewer physically aggressive actions than male characters, are overall portrayed as less active than male characters, with male characters also more frequently appearing as central heroes (1996, 220).[104] As previously mentioned, WALL-E not only become EVE's, and by extension, the seedling's protector, but, soon thereafter, he valiantly abandons the relative safety of his directive to compact trash, embarking on the archetypal male hero's epic quest to reunite with EVE and save her from perceived harm, upon her unexpected collection from Earth and return to the Axiom. WALL-E, who we once saw bury himself underground through abject fear of EVE, now recklessly follows her into the vast dangerousness of space, before finally boarding the Axiom starliner in pursuit of her. However, once the seedling is presented to McCrea and EVE is reanimated, it is EVE that is entrusted with placing the seedling into the Holo-Detector, which will initiate humanity's return to Earth. This, as well as EVE's repeated efforts to rescue WALL-E from dangers unknown to him on the Axiom, allow a continued reading of EVE as a subversive female hero. Yet, this reading of EVE is significantly undermined when EVE offers to change her directive for WALL-E, and in effect, abandon the hero's mission to save Earth and humanity. As Meinel explains, 'in a pivotal scene, EVE declares WALL-E to be her new prime directive, thus rejecting her prior programming and seemingly asserting her independence, only to immediately choose WALL-E as her new prime directive; she thereby acknowledges a male-centred hierarchy' (2016, 126). WALL-E insists that they continue with EVE's mission, which culminates with WALL-E being

[104] Although some would argue that Disney is beginning to depart from these stereotypes (see, for example, Gillam and Wooden, 2008).

electrocuted by AUTO, and being crushed by the Holo-Detector. Although WALL-E's physical crushing compromises his status as the masculine hero, this is sustained by his voluntary self-sacrifice to save human civilisation, the ultimate act of masculine strength and bravery. In this way, *WALL*-E possesses similarities to adult-intended SF texts, as Carrasco, Ordaz and Lopez indicate, in many SF films set in outer space in distant futures, such as *Star Trek* or *Star Wars*, 'patriarchal values remain intact and women are relegated to secondary positions, in spite of their attempt to include challenging future contexts', whilst these conquering heroes do not possess the traditional male action hero's extraordinary body, his superiority is stated in the accomplishment of his mission, the domination of space-travel and technological development and his ability to defend and protect people from malevolen[ce]' (2015, 74).

In *WALL-E's* conclusion the restoration of the traditional gender binary is cemented, with the female SSA EVE now rehearsing romantic gestures, such as hand-holding, learned from the musical *Hello, Dolly!* by means of attempting to resurrect the broken male hero WALL-E, whom she then nurtures back to health. Whilst *WALL-E*'s representation of EVE might progress from previous 'retrograde representations' of women in the Disney tradition, namely that of Disney's many princesses, the side-lining of EVE and her return to woman-as-empowering rather than empowered in *WALL-E*'s conclusion, sees a recuperation of a male-centred hierarchy. With this, *WALL-E* shares further overlaps with the adult-intended SF films analysed in this thesis' previous chapter and their imaginations of AI in the form of SSAs as female. As explained within the previous chapter, an illusion of female empowerment is offered by the initial characterisations of Scarlett Johansson's female SSAs in *Under the Skin*, *Lucy*, *Her*, and *Ghost in the Shell*, but ultimately, these characters turn out to be objectified and controlled by men, and are then erased from the narrative in their respective conclusions in order to reassert the male-centred hierarchy.

As Carrasco, Ordaz and Lopez state, the encounter with difference is one of the most important debates in contemporary Western culture and society, and whilst SF might be the perfect site in which to break down boundaries, 'gender difference in contemporary films is still subjected to dominant definitions of masculinity and femininity' (2015, 77). *WALL-E* is a children's SF film that initially offers a somewhat subversive representation of gender through the SSAs WALL-E and EVE.

However, the possibility of a queer reading of *WALL-E* is significantly undermined as the narrative progresses, with *WALL-E* ultimately feeding its impressionable child audience a '"world view" of gender stereotypes [that] makes it easy for them to accept stereotypes in reality as well' (Hoerrner 1996, 213). It also, as discussed in this thesis' previous chapter, feeds into gendered expectations of forms of AI as female that exist in the real world, for example, virtual assistant technologies.

It is through this reassertion of the gender binary in *WALL-E* that its shared views and values with a number of adult-intended SF films are further exposed. Of particular concern with *WALL-E* is its return to harmful stereotypes of women through the female SSA EVE, whose initial subversive violence and aggression is soon abandoned, as she is reconfigured as a passive womb-like vessel after she is impregnated with *WALL-E*'s seedling. Also of concern is the restoration of traditional masculinity through WALL-E and his gradual distancing from subversive masculinity. Thus, the children's SF film sharing the views and values of the adults' SF film, in terms of gender, can be problematic.

As articulated by Carrasco, Ordaz and Lopez the many changes that have taken place in contemporary Western culture and society have 'redefined the perception of gender and have opened up questions about gender identity' (2015, 75). This chapter recommends that future children's SF film narratives fully embrace their potential as sites in which rigid gender binaries can be deconstructed, and alternative gender identities can be introduced and explored, albeit in ways that are sensitive to the immaturity of their intended audience. Whilst *WALL-E*'s beginning shows promise in this regard, its significant return to the traditional gender binary and stereotypes undermines its initial sense of progressivity. As Gillam and Wooden suggest, all children, who are developing and maturing during this contemporary period of gender redefinition, could benefit from the exposure of gender identities that are not necessarily considered traditional, fostering the understanding and acceptance of the 'many sides of human existence', differences they may encounter throughout their lives in their formative, and most impressionable, years (2008, 7).

Conclusion

Disney's *WALL-E* is a children's SF film that depicts AI in the imagined form of SSAs. It is through this central engagement with advancing AI technology that *WALL-E* emerges as a SF film that offers its child audience a broad palette of SF

problems, contrary to the apparent limitations of children's SF in its literary form. Although *WALL-E* initially seems to endorse a technophobic agenda in its implication of advancing technologies in facilitating the destruction of Earth and humanity's erasure from it, it soon reveals its misanthropic impulse, figuring human civilisation itself as the root cause of the SF problems that it presents through its introduction of the megacorporation BNL and the devolved human passengers on board the Axiom. By emphasising human responsibility and accountability, *WALL-E* empowers its child audience with the knowledge that it is us who control the design, development, and implementation of advancing technologies, and therefore, that they are likely only dangerous to us if we program them to be so or misuse them. Yet, these dangers in *WALL-E* are not concerned with, for example, how AI technology might sensationally rise up against humans and destroy them, but rather, how it might manifest unintended consequences through human programmed directives, or how it might lead to further disconnect in human sociability and relationships. To an extent, this undermines *WALL-E*'s empowering effect, through its reflection of adult concerns about children and their relationship to modern technology in contemporary society that are in a dystopian spirit.

However, in addition to emphasis on human responsibility and accountability, *WALL-E*'s overtly positive figuration of AI, imagined as the SSAs WALL-E and EVE, mutes its initial endorsement of a technophobic agenda. WALL-E is figured as the film's most sympathetic character, and therefore, the film's intended child audience is led to form an allegiance with him, which arguably, promotes conceptions of non-human personhood, opening its audience up to better futures that are more accepting of difference. Moreover, WALL-E is also figured as the hero of the narrative, saving human civilisation from the Axiom and returning them safely to a renewed Earth, in a recognition of the ameliorative potential of advancing technology, promoting collaboration between humans and technology, rather than our total reliance on it.

WALL-E's endorsement of an agenda that is, overall, positive about technology can be extended to other children's SF films in Disney's repertoire, such as *Big Hero 6* and *Tomorrowland*. This is understandable, however, given that Walt Disney himself was a futurist, his optimism about advancing technology continuing to bear influence on the Disney brand and its ethos, even after his death. To an extent, this does undermine the sense of *WALL-E*, and other Disney SF films, as

valuable pedagogical sites in which children can formatively learn about AI, robots, and similar technologies. However well-intended, it is difficult to separate these films from their origins from one of the world's largest and most profitable corporations in the world that focuses on the manufacture of entertainment products, services, and content that specifically targets children.

Contrary to further claims of children's literary SF, *WALL-E* suggests that the children's SF film shares a number of views and values with adult-intended SF film, particularly with regard to its depiction of advancing technology in the form of SSAs. Whilst this might sustain children's further engagement with the SF film genre as they mature and transition to the adult market, *WALL-E*'s parallels with adult-intended SF film's representations of gender through the SSA are problematic. Although the film begins with establishing somewhat subversive gender identities for WALL-E and EVE, traditional gender binaries are later restored, with EVE coming to represent woman as a mysterious and complex technology which marginalises women as others, and WALL-E coming to assume the archetypal male hero role, restoring a male-centred hierarchy. This return to traditional gender stereotyping is concerning within *WALL-E*, given the impressionable nature of its young audience demographic.

This chapter recommends that future children's SF film continues, in the spirit of *WALL-E,* to explore both the challenges and benefits of AI, robots, and similar technologies, albeit with an emphasis on empowering young generations with knowledge, rather than conditioning them to become fearful. This chapter also recommends that children's SF film embraces the full potential of the genre as a valuable site in which to challenge and deconstruct rigid gender boundaries, through its depiction of diverse and different characters that the audience are encouraged to form an allegiance with, such as SSAs that inherently transcend traditional gender binaries and identities.

As outlined in this chapter's introduction, research on the representation of AI, robots, and similar technologies within the children's SF film is relatively lacking, despite the significance of such texts as potentially valuable pedagogical sites for children's formative learning about our constantly evolving technological landscape. Whilst this chapter contributes to this relative deficiency in this area, there is more work to be done. For example, future research might consider the representation of AI, robots, and similar technologies, whether or not in the imagined

form of SSAs, within children's films produced outside of the technophilic Disney brand, or future research might also usefully pursue this subject matter within the context of children's SF television.

Conclusion

The postmillennial era marks a significant period for AI and its surrounding narratives. With an upward trend of growth in the field throughout the twenty-first century, AI is becoming more visible in more aspects of our day-to-day lives, which is reflected by the increased density of fiction and nonfiction AI narratives across various platforms during this time. Among these, fictional film and television are two of the key sources of exposure to AI for the general public within the postmillennial era. Therefore, AI narratives within fictional film and television are important cultural artefacts that warrant continued up-to-date academic considerations, providing valuable insights into how AI is both understood and communicated through representation, irrespective of their degree of authenticity to actual AI technologies. With a primary intervention within the field of film, television and media studies, this thesis has foremostly employed close textual analysis, with some aspects of discourse analysis, to demonstrate how AI, and the possible future relations between humans and AI, have been imagined and represented within popular postmillennial American and British fictional film and television. This was achieved through an original approach that built its questions around in-depth considerations of elements of fictional film and television form and style. The foremost aim of this thesis was to foster productive dialogues about the ways in which fictional film and television's forms and styles might be utilised to further stimulate a more diverse range of engaging and thought-provoking representations of AI within AI narratives, contributing to their vitality, longevity, and relevance among a broader range of audience constituencies as actual AI technologies continue to further develop and remain at the forefront of socio-cultural debates. The thesis also demonstrated how AI narratives in fictional film and television engage with those from wider media and popular science/technology discourses, highlighting key comparisons and contrasts. The term 'sentient synthetic anthropomorph' (SSA) was established for this thesis, used in reference to the nature and form of the type of imagined AI that it gives consideration to throughout, distinguishing them from other types of AI in fiction, as well as those that currently exist in the real-world.

Chapter one considered the representation of AI, imagined as SSAs, and their possible future relations with humans within popular postmillennial American and

British fictional television, using HBO's *Westworld* (2016-22) and AMC's/Kudos's *Humans* (2015-8) as case studies. Through analysis of *Westworld*'s and *Humans*' opening titles and pilot episodes, this chapter demonstrated that both of these series, to varying degrees, draw upon the poetics of narrative complexity, a relatively new mode of long-form television. Character emerges as a significant site of complexity within *Westworld* and *Humans*, with both human and SSA characters undergoing changes that are atypical to most conventional episodic and serial television. These changes allow for complex and shifting identifications with *Westworld*'s and *Humans*' characters that ultimately facilitate more potent degrees of sympathetic feeling towards SSAs, fostering viewers' moral allegiance to them, as opposed to many of the featured human characters, who seem to become increasingly morally corrupt, and even inhuman, as both series progress.

Prompted by *Westworld*'s and *Humans*' abrupt and unexpected cancellations without formal conclusions, chapter one also proposed the that there seems to be a degree of incompatibility and unsustainability between fictional television's complex narrative mode and the mutually complex concept of the technological singularity, a popularised hypothesis from science and technology that anticipates a point of time in the future in which AI outstrips human intelligence, affecting significant changes to human civilisation. The chapter points toward other narratively complex television series about AI and the technological singularity that have also been abruptly or unexpected cancelled, which from further investigation may lend additional support to this original argument. The chapter concludes with the suggestion that entertainment industry practitioners, especially those in television, might benefit from locating and drawing upon alternative sources of inspiration to the popularised, often dystopian, technological singularity hypothesis, in order to develop AI narratives that are not only original and engaging, but also more sustainable.

Chapter two examined the representation of AI, imagined as SSAs, and their possible future relations within humans within popular postmillennial American film, using Spike Jonze's *Her* (2013), Drake Doremus' *Zoe* (2018), and Michael Almereyda's *Marjorie Prime* (2017) as case studies. As demonstrated within the chapter, these films are representative of AI's departure from the exclusive purview of the SF genre in the postmillennial era, and therefore, also demonstrative of AI's movement into the mainstream, with each film making significant inroads into the romantic-drama, indicated by their significant inclusions of the romantic-drama's

generic conventions. These inroads into the romantic-drama work towards figuring notions of possible future human-AI intimacies more plausible, and even palatable, to audiences.

Often within the SF genre, the men who 'love' technology have been negatively stereotyped as unattractive geeky or nerdy scientists. In contrast, however, the romantic-drama genre has traditionally commanded a male hero that is charismatic and handsome. In closer keeping with this romantic-drama convention, *Her* and *Zoe* depict the men who fall in love and enter romantic and sexual relationships with SSAs as hipsters, a figure who is considered as more socially-acceptable than the geek/nerd, largely on account of his attractiveness and purposeful aesthetic. In doing this, these films lend support to and attempt to normalise the future possibilities of human-AI intimacies, particularly digisexualities as alternative forms of sexual identity. These more favourable representations of men 'attracted' to technology are reflective of recent wider media discourses fascinated with male tech CEOs, whose devotions to the field and subsequent innovations have affected significant changes within mainstream culture and society, catapulting many of them into rockstar-levels of stardom with enviable lifestyles captured by the paparazzi. This advocacy, however, does not yet seem to extend to 'ordinary' individuals who claim to already be romantically in love with AI and robots, and therefore, might identify themselves as digisexual, who continue to be negatively stereotyped as deviant and highly-eccentric social misfits.

In contrast, *Marjorie Prime* uses the romantic-drama's conventions to lend support to and normalise AI technologies that facilitate digital immortality, and the use of AI technologies in therapeutic care, particularly for the elderly. This is achieved through the depiction of dementia-stricken Marjorie and her endearing relationship with Walter Prime, an AI hologram version of her late husband Walter in his youth. Through the film's romantic-drama themes, imagery, and soundtrack, a heightened degree of sympathy for Marjorie and her doomed situation as she nears the end of her life is invited from the audience, and we come to understand the largely positive effect that Walter Prime has on Marjorie, from providing practical routine reminders to companionship, and even preserving her precious fading memories. *Marjorie Prime* does acknowledge potential issues that might arise with such a technology if it were to be realised, reflecting existing concerns about similar, albeit rudimentary, technologies working towards digital immortality as creepy,

exploitative, and distasteful. However, these concerns are outweighed by the foregrounding and potency of Walter Prime's positive effect on Marjorie throughout most of the film. As these three films show, the inroads that AI is making into the romantic-drama is contributing to a healthy diversification of AI narratives, producing original and thought-provoking stories aimed at broader audience reaches, and moving beyond the dominating out-of-control-AI trope.

Chapter three examined the repeated casting of Hollywood actor Scarlett Johansson within roles as female-gendered SSAs in popular postmillennial American and British SF film, using Jonathan Glazer's *Under the Skin* (2013), Spike Jonze's *Her* (2013), Luc Besson's *Lucy* (2014), and Rupert Sanders' *Ghost in the Shell* (2017) as case studies. The chapter demonstrated that notions of Johansson as an apparent 'ideal' representative of the female SSA stem, in large part, from her widely renowned and understood star image and persona. Not only does Johansson's exceptional attractiveness draw connotations with, and therefore convey, the superlative beyond-the-human-baseline nature of the posthuman entity, which includes the SSA, but so do aspects of her somewhat unique, alienating performative style. The chapter also proposed that Johansson's seeming elevated qualification for roles as female SSAs further stems from her previous performances as wandering ingenue and femme fatale character types. Much like the liminal female SSA characters that she has portrayed within the case studies, Johansson's formative wandering ingenue characters are alienated or estranged women, often experiencing transition. Similarly, the female SSA can be read as a form of SF femme fatale, she is not only dangerous-yet-alluring, but also has mysterious and ambiguous qualities.

Chapter three argued that Johannsson's repeated castings as female-gendered SSAs are problematic for women. In all four of the case studies examined, Johansson's female SSA characters present the illusion of empowerment, but ultimately, are objectified and controlled by men, reproducing archaic images of inequity between men and women. As popular culture texts with wide audience reaches, and therefore cultural influence, these films' representations of SSAs feed into expectations of actual AI technologies – according to them, they should be gendered female, compliant, and overtly sexualised. The extent of this influence is demonstrated within the chapter through the discussion of Ricky Ma's development of the Mark-1 robot, with the amateur roboticist having grossly misappropriated Johansson's likeness in pursuit of his own interests and gratification, and even

publishing instructions informing others how to build their own version of Mark-1. The chapter concluded with the recommendation that entertainment industry practitioners diversify their representations of AI, to avoid further contributing to broader cultural expectations of actual AI technologies that are problematic, particularly for women. One way that this might be achieved is through an overall departure from the representation of AI as SSAs.

Finally, chapter four explored the representation of AI, imagined as SSAs, within the popular postmillennial American children's SF film, using Disney's *WALL-E* (2008) as a case study. Younger generations are likely to develop and mature in a world in which AI technologies are even more visible than they are currently, and in which people are even more dependent on them. Therefore, at this impressionable stage of their lives, it is important to form understandings of what and how children are being told about AI and the future possibilities of humans' relationships with them. Despite being a key form of exposure to AI for young people, children's film and television are relatively underdeveloped areas of AI narratives research. Therefore, chapter four took inspiration for its key avenues of investigation from children's literary SF studies.

Contrary to existing scholarship in children's literary SF studies, chapter four found that *WALL-E* draws upon its SSA characters and themes to engage with a broad palette of sophisticated SF problems, from AI's various roles in the future of climate change to possibilities in space travel. Furthermore, unlike claims made of children's literary SF, this chapter contended that *WALL-E* does not endorse an exclusively technophobic agenda through its depiction of SSAs. Whilst the film does express some concerns about humans' misuse of some forms of AI technologies, these are framed as more misanthropic rather than technophobic concerns. Moreover, *WALL-E*'s sympathetic and heroic protagonists are the SSA's WALL-E and EVE, who not only embark on an endearing love story that the audience roots for throughout, but who also save human civilisation from their limiting lives in space and kick-start the regeneration of the near-ruined Earth. In this way, *WALL-E* ultimately acts an advocate for the powerful possibilities of AI, providing it is appropriately employed. Similar views are also conveyed within other children's films about the future of technology produced by Disney, which is likely a reflection the broader Disney brand and ethos, whose founder Walt Disney, was a renowned futurist, with his optimisms about technological development continuing to permeate

the company long after his death, as observed through Disney's various research institutions.

Chapter four concluded with a discussion of how *WALL-E* shares a number of views and values with adult SF cinema about AI, imagined as SSAs. Whilst this might facilitate young people's transition to the adult SF market and their continued appreciation of the genre, these overlaps are also not without their issues. Whilst initially taking the opportunity to destabilise traditional gender binaries through the representations of SSAs WALL-E and EVE, *WALL-E* ultimately restores these in the latter half of the film, reproducing stereotypical gendered imaginations of AI that have persisted within adult SF, including the case studies examined in chapter three of the thesis. Additional academic considerations of fictional film and television AI narratives for children are necessary to further develop and flesh out this area of research.

The scope of this thesis is not without its limitations. The thesis' focuses on American and British fictional film and television, and therefore, its relevance is foremostly to a Western perspective. As previously noted within the thesis' introduction, the exploration of the representation of AI within narratives emergent from other national contexts would certainly form a productive and beneficial avenue for further research, and as I understand it, research of this nature is well underway.[105] This thesis also focuses on popular and conventional fiction film and television, as two of the foremost, and arguably therefore, most significant and impactful, ways in which AI is communicated to the public, whilst also drawing on some wider AI discourse from wider media and popular science/technology for comparison. The thesis' focus on the effect of elements of form and style on AI representation, however, might also be usefully applied to different media forms, such as video games, literature, and graphic novels/comic books, as well as to alternative modes of film and television, such as short film, avant-garde and experimental film, episodic television, and serial television.

[105] For example, in 2021, as part of Global AI Narratives (GAIN) project, previously mentioned in the introduction to this thesis, a workshop was held at Ahmedabad University in Gujarat, India, which included a panel that discussed AI in Indian SF and Imagination (GAIN India, n.d.). As of writing, the GAIN project intends to produce an edited collection of academic papers compiled from contributors to this workshop and others like them, for example, in Singapore, Japan, and Egypt (GAIN, n.d.). Elsewhere, Eke and Ogoh's recently published paper examines African AI Narratives, which are 'missing or often forgotten' in global AI narratives discourse (2022, 1).

Moreover, the temporal limitations of this thesis are exclusionary of twentieth century representations of AI in fictional film and television narratives. However, as indicated within existing relevant literature drawn upon throughout this thesis, such texts have already been given extensive consideration elsewhere, with some, such as *2001: A Space Odyssey* (1968), *Blade Runner* (1982), and *The Terminator* (1984), reaching a sort of deified status that this thesis sought to move away from in order to develop more fresh and original lines of enquiry and arguments. Additionally, this temporal limitation allowed for full focus to be paid to the greater density of AI narratives in the postmillennial era.

A case study approach also has its limitations. Although this thesis has provided close analyses of what it considers to be among the key representations of AI within fictional film and television narratives to have emerged in the postmillennial era, and the most resonant with the themes of the individual thesis chapters, there are a plethora of other texts that might be of interest within academic research, including some that have only been released since the research for this thesis began. For example, the theme of motherhood seems to be of burgeoning interest within recent fictional film and television AI narratives, as observed within *I Am Mother* (2019), *Mother/Android* (2021), *M3GAN* (2023), and *Raised by Wolves* (2020-22), which provide further and alternative opportunities to research imaginations of possible future relations between humans and AI.

Nevertheless, this thesis offers a significant contribution to film, television and media studies knowledge in relation to the representation of AI within fictional film and television. Particular elements of fictional film and television form and style, namely platform/narrative, genre, stardom, and audience, have considerable and varied effects on AI representation, which have been previously neglected from in-depth analysis within existing literature from film, television and media studies. Significantly, the foregrounding of AI within television's complex narrative mode and its movement into film genres other than SF, including the romantic-drama and the children's film, are facilitating more sympathetic depictions of AI characters that represent positive progressions that move beyond the stereotypical fear-rousing out-of-control-AI trope, emerging as endorsements of AI's future potential and continued advancement. However, complementary to existing knowledge in this area, the thesis also found that, due in large part to their representation in SSA form, contemporary fictional film and television continue to reproduce imaginations of AI

for a range of audiences that largely conform to the archaic gender binary, contributing to the facilitation of problematic cultural expectations of actual AI technologies that are particularly harmful for women, perpetuating misogyny and sexism.

The findings within this thesis could help to improve future representations of AI within fictional film and television, for both the entertainment industry and the public. Through its selected cases studies, the thesis provides insight into ways that entertainment industry practitioners might utilise particular elements of fictional film and television's form and style to avoid cliches and further diversify AI narratives, moving away from the continued dominant sensational image of the fear-rousing out-of-control-AI or the problematic sexualised and compliant female-gendered AI, yet are nevertheless thought-provoking and engaging, which may not only sustain existing audiences' interest in AI narratives and capture new broader audience constituencies, but may also encourage them to think about wider socio-cultural implications of AI.

The thesis is also of benefit to researchers interested in AI within the humanities, particularly the field of film, television and media studies. The thesis points towards a number of possible productive avenues for further research in this area that would complement and build upon this thesis' findings. Through its own outlined methodology, this thesis also demonstrates the approach that such future research might also take. Moreover, the thesis demonstrates that the examination of the representation of AI within fictional film and television narratives through questions built around elements of form and style allows for close readings that not only lend additional support to existing arguments in alternative ways, but also produce interesting new lines of argument.

This thesis may also be of use to researchers and practitioners in the scientific field of AI, contributing to existing knowledge demonstrating the potential value of fictional film and television as key sources of engaging and though-provoking exposure to AI for audiences comprised of broad public demographics. Through its demonstration of the various ways in which is AI is represented within fictional film and television narratives in the postmillennial era, including their capability to move beyond SF and the out-of-control AI trope, this thesis may encourage AI researchers and practitioners to initiate new and continue existing dialogues with those in the

entertainment industry, suggesting ways in which AI narratives could be further developed and improved from sciences perspectives.

As I write this, more developments in AI are occurring on a frequent basis. For example, OpenAI's AI system GPT-4 was recently reported to have successfully completed the bar exam for lawyers, and when OpenAI's ChatGPT was asked to complete an assignment for university students, the journalism professor who set the assignment said the chatbot would have received a good grade (Kleinman, 2023; Hern, 2022). Recent developments in AI are also making their way into the entertainment industries, with the comedy television series *Deep Fake Neighbour Wars* (2023-) using 'deepfake' technology to turn impressionists into A-list celebrities, such as Kim Kardashian and Idris Elba, depicted in 'mundane' situations.[106] Elsewhere, a song featuring musicians Drake's and Weeknd's vocals was pulled from streaming services for infringement, as it was created by 'generative AI' (Snapes, 2023).

These rapid evolutions in AI have led to a recent call by academics from around the world who have signed an open letter written by the Future of Life Institute for AI labs to suspend the training of AI systems more powerful than GPT-4 for at least six months (FLI, 2023). In addition to production processes themselves being increasingly affected by these actual developments in AI, fictional film and television narratives are likely to continue to respond to and engage with them too, and it will be interesting to see how they are represented and further speculated and extrapolated, all within the relative safety of the unbounded imaginative space. Therefore, I encourage researchers, particularly those with expertise in film, television and media studies, to anticipate these AI narratives, to continue to study their trajectory through questions of elements of fictional film and television's form and style or alternative approaches, highlighting the varied, but nevertheless significant, contributions that they make to wider debates and discussions about AI.

[106] Deepfake is a portmanteau of 'deep learning' and 'fake' and rely on AI and machine learning to super impose source images elsewhere (Brandon, 2018).

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