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Introduction

MASON: I finally figured it out. It's like when they realized it was gonna be too expensive to actually build cyborgs and robots. I mean, the costs of that were impossible. They decided to just let humans turn themselves into robots. That's what's going on right now. [...] I mean, why not? They're billions of us just laying around, not really doing anything. We don't cost anything. We're even pretty good at self-maintenance and reproducing constantly. And as it turns out, we're already biologically programmed for our little cyborg upgrades. [...] I read this thing the other day about how when you hear that ding on your inbox, you get like a dopamine rush in your brain. It's like we're being chemically rewarded for allowing ourselves to be brainwashed. How evil is that? We're fucked.¹

Following from the notion that humanity is doomed by our interactions with computer technology in the 21st Century, the film industry has produced numerous movies that explore this pessimistic outlook on our future. For instance, Spike Jonze's film *Her* (2013) elaborates on the relationships between humans and technology by illustrating the romantic relationships between the main character Theodore (played by Joaquin Phoenix) and the Siri-like operating system Samantha, voiced by Scarlett Johansson. The film stressed the loneliness of humans in the 21st century. People who spend most of their time looking at computer screens and mobile phones are more likely to become attached to their smartphones rather than to other people. Indeed, it is hard to separate computer technologies from our everyday lives today. CNN reported that, in 2016, "the average American spends nearly half a day staring at a screen"². Together with the development of the Internet, a large number of people have adopted a new way of communication via social media, while smartphone, tablet, and computer screens have replaced face-to-face interaction. More and more people increasingly turn to search engines like Google to answer their questions, look up information, and so on.

The prevalent trend in science fiction cinema is to focus on the way humans are becoming increasingly dependent on computer technology and the way computers have become intrinsic to their daily lives. Contemporary films and TV-series have reflected developments in artificial intelligence (AI) and have also helped inform society's outlook on cyber security, privacy of information, and the way we communicate with each other. For instance, the highly acclaimed British TV Series

¹ Richard Linklater, *Boyhood* (2014), [2:01:05-02:01:58].

² Howard, Jacqueline. "Americans devote more than 10 hours a day to screen time, and growing". CNN, 29 July 2016, www.edition.cnn.com/2016/06/30/health/americans-screen-time-nielsen.

Black Mirror (2011-) is a series of episodes that each presents a dark and sometimes terrifying outlook on technological progress. Moreover, the TV series *Humans* (2015-) and *Westworld* (2016-) explore the possible adoption of AI technology and its implications. Among others works inspired by the continued advancement in artificial intelligence, Bryan Cranston's sci-fi TV series *Electric Dreams* (2017-), which is based on Philip K. Dick's classic short stories³, intends to contribute to the current science fiction trend. The increasing interest in producing cinematographic illustrations of such technological development is a reflection of the serious questions and concerns that arise from technological progress, especially in the field of AI. It is becoming less clear whether humans are programming machines or are themselves being programmed.

This thesis will focus on one particularly fascinating portrayal of human-machine interactions in *Ex Machina* (2015), a British science fiction thriller, written and directed by Alex Garland⁴. In the film, Caleb Smith (Domhnall Gleeson), a computer programmer for the Google-like company BlueBook, becomes the winner of a workplace competition. The prize is to spend a week with BlueBook CEO Nathan Bateman (Oscar Isaac) at his private estate. When Caleb reaches the destination, he learns that his boss wants him to take part in a Turing Test – to test if a machine with AI called Ava (Alicia Vikander) has a consciousness. However, as far as the experiment progresses, it is less and less clear who is being tested.

After the release of *Ex Machina* in 2015, it was quickly recognized by critics as having added another layer to the discussion on AI and humans. For example, Martin Robbins, in an article for *The Guardian*, writes:

Superficially it looks like a film about the future of artificial intelligence, but like most science fiction, it tells us more about the present than the future; and like most discussion around AI, it ends up reflecting not technological progress so much as human egos.⁵

³ See Kobie, Nicole, "Bryan Cranston on the beauty of Philip K. Dick's *Electric Dreams*". *Wired*, 15 September 2017, www.wired.co.uk/article/bryan-cranston-electric-dreams-philip-k-dick.

⁴ Born in London in 1970, Garland became known for his first novel *The Beach* (1996), screenplays for Danny Boyle's films *28 Days Later* (2002) and *Sunshine* (2007), and a film adaptation of Kazuo Ishiguro's novel *Never Let Me Go* (2010). For more see www.literature.britishcouncil.org/writer/alex-garland.

⁵ See www.theguardian.com/science/the-lay-scientist/2016/jan/26/artificial-intelligence-gods-egos-and-ex-machina.

Indeed, *Ex Machina* provides a disturbing but plausible picture of the near future and the role of AI within it. The film enables a discussion about the current tensions over artificial intelligence, the future of humanity, and what it holds. In an interview with IndieWire, an online publication about independent movies, Garland calls his film “10 minutes in the future”⁶. Certainly, with the technology and big data available on the Internet, the notion of a machine with a human brain is already plausible and even convincing. However, the film does not portray a bright future for humanity, where man and AI co-exist in peace. Instead, it is a warning to the present about the accelerated technological progress of computer technology– it points to the apex at which machines become smarter than their human creators, at which point humans may no longer be needed by the machines.

As a thriller, *Ex Machina* manages to keep the viewers’ attention until the end. Rob Hardy, the film’s cinematographer, notes that “[Y]ou never know who’s who, and your allegiance is constantly shifting between the characters” (Stasukevich, 34). This tension challenges the audience to choose sides – should they empathize more with the humans or the machines in the movie? In this sense, *Ex Machina* reflects existing cultural tensions over the progress of computer technology. A sceptical outlook on the development of AI has been adopted by the philosopher and cognitive scientist Daniel Dennett. Speaking about consciousness to *The Economist Radio*, Dennett claims that *Ex Machina*, despite being a “brilliant avocation to what can happen in principle”, is nevertheless far from reality⁷. The movie may not answer the question on the current debate about the advance of intelligent machines, but it helps facilitate a fruitful discussion on the current social and cultural issues on gender, power, and ideology that this thesis is dealing with.

Science Fiction and Artificial Creatures

Before setting out the scope of this thesis, it is worth providing a context to the analysis by giving a brief overview of science fiction as a film genre. According to Frank Beaver’s *Dictionary of Film Terms*, science fiction film (sci-fi film), is “a motion picture genre characterized by a plot that involves scientific fantasy” (Beaver, 237). Science fiction

⁶ "Alex Garland Talks Lo-Fi Approach To 'Ex Machina', Auteur Theory, And Much More." Interview by Chase Whale. *IndieWire*. 7 Apr. 2015. Web. 1 May 2017. <http://www.indiewire.com/2015/04/interview-alex-garland-talks-lo-fi-approach-to-ex-machina-auteur-theory-and-much-more-265335>.

⁷ See *The Economist*, “What is consciousness?”. 2 March 2017, www.economist.com/news/international/21717973-what-consciousness.

can be seen not only to illustrate the possible outcomes of technological innovations, but also to nudge scientists towards further inventions. As a genre it allows directors and filmmakers to experiment with ideas that would seem bizarre and out of place if addressed in other film genres. Cultural critic and film theorist Vivian Sobchak states that science fiction films “exceed the bounds of contemporary empirical knowledge more sanguinely; the genre’s drive into the ‘unknown’ is characterized by bold epistemological curiosity and its limited satisfaction, and is fuelled by an ‘infinite’ and ‘progressive’ deferral of any final satisfaction” (315). It is inherent to human nature to be cautious or scared of the ‘unknown’. Clearly, innovation brings excitement, but it also creates an element of fear because the implications of technological change are unknown or sometimes unforeseen. Dystopian science fiction reflects this, playing the role of the indicator of social, political, and technological tendencies in both politics and society. While it celebrates the technological achievements of technology, it also illuminates some of the potential pitfalls that progress may come to create.

Rapid technological advancements have been foreshadowed and reflected in science fiction, particularly with consideration to the growing role of machines in human life. According to Sobchak, science fiction as a film genre is “reversibly preoccupied with the ghost in the machine and the machine in the man” (315). To trace back this issue, one must examine the development of thinking machines and cinema. Machines with artificial intelligence have deep roots in science fiction and popular culture. The cyborg’s predecessor has been traced back to Mary Shelley’s novel *Frankenstein* (1818) - Sonja Georgi convincingly argues that “the creature Victor Frankenstein creates can be read as an early realization of the cyborg, a hybrid of machine and organism” (37). The novel can be regarded as having enabled a series of further illustrations about the creation of human beings. Although not human, the creature in *Frankenstein* was created from parts of the human body. Thus, while Frankenstein’s creation is seen primarily as a biological entity, industrialization and technological improvements in the late-nineteenth and early twentieth century eventually gave rise to a notion of the mechanical ‘robot’. The term was first used in connection with Karel Čapek’s play *R.U.R.*, which premiered in Prague in 1921. In the play, Robots are “artificial humanoid beings” created in the factory of Rossum's Universal Robots (Naughton, 72). The main purpose of the robots conceived by Čapek was to carry out hard labour (Reilly, 148). When Robots realize that they are being exploited by people, they

organize a union and start a revolution against humanity. The story opened a discussion about the role of humanlike creatures in human society. According to Reilly, *R.U.R* is the first play in which humanity is destroyed by its own technological invention (149). Thus, the play gave birth to a new theme exploring the conflict between humans and technologies that was to be examined at great length in science fiction literature and cinema.

Literary depictions of artificial creatures went hand in hand with contemporary technological developments. With the technological focus on creating a thinking machine in the early 50s, the cultural portrayal of machines shifted as the scientist Alan Turing made one of the first attempts to address the issue of computer intelligence.⁸ In his paper entitled *Computer Machinery and Intelligence* (1950), Turing suggested that computers that are programmed to simulate human tasks may be able to educate themselves, thus demonstrating the machine's artificial intelligence. The significance of AI is in the idea that a computer would be able to simulate and reproduce human capacities. But can one know whether a machine is aware of its own mind? Turing proposed a test that a machine would have to pass in order to prove that it has a consciousness. The Turing Test, as it came to be known, was based on a popular Victorian parlour game referred to as the imitation game. The game starts with two players of both sexes hidden away from a judge of either sex. As the judge cannot see the players, they communicate with each other by written or typed notes. The aim of the imitation game is to guess which of the players is the woman. The male players have to succeed by tricking the judge into believing that they are female. Thus, the objective of the imitation game is to determine how convincingly both gender players can play the role of a female to a third-party participant. To test the intelligence of a computer, Alan Turing proposed to include a computer in a game, who's goal would be to convince the judge that it is a human.

Turing was ahead of his time, considering that few intelligent machines at that time could have stood any chance of passing the Test. However, although technological limitations prevented the creation of a conscious machine in the 50s, the science fiction of the 60s leapt far into the future with its portrayal of intelligent computers. The development of computer technology had a significant impact on popular culture.

⁸ See "The Turing Test", *Stanford Encyclopedia of Philosophy*. 9 April 2003, www.plato.stanford.edu/entries/turing-test.

For example, Stanley Kubrick's iconic film *2001: A Space Odyssey* (1968), based on the Arthur C. Clarke novel *Space Odyssey* (1968), depicts a problematic relationship between humans and an autonomous computer. The heuristically programmed algorithmic computer, HAL 9000, learns that two astronauts want to disconnect it. HAL, therefore, decides to kill the astronauts in order to continue its programmed mission. HAL's character in the film illustrates the fear of the autonomy of a computer. HAL is like a ghost in a machine that is able to operate a space ship and decide the destinies of the people on board has been presided as someone delivers and sinister. The faceless and disembodied program should have a human body to co-exist with people in the human world.

Moving beyond *2001: A Space Odyssey* (1968), science fiction cinema began to offer a wider variety of humanoid robot characters with varying degrees of AI. The progress of computer technology, along with the science of making machines act intelligently, have sparked an interest among filmmakers in analysing the possible future role of computer technology in human life. Further prominent examples include C-3PO from the *Star Wars* saga, Arnold Schwarzenegger's defining character the *Terminator* (1984-2015), and the 'replicants' in Ridley Scott's *Blade Runner* (1982). In 1987, the TV series *Star Trek: The Next Generation* (1987-1994) portrays the self-aware and "fully functional"⁹ android Lieutenant Commander Data. These prominent examples therefore illustrate science fiction's growing interest in the prospect of a cybernetic future.

At the start of the 1990s, computer technology experts began making numerous breakthroughs in the field of AI. In 1991, at the Boston Computer Museum, the PC Therapist III convinced five of ten judges that he was a human, effectively completing a Turing Test for the first time¹⁰. That was just the beginning of a new computer era. In 1997, the American tech company IBM succeeded in developing a computer, named Deep Blue, that won a game of chess against the reigning world champion, Garry Kasparov¹¹. The company's other computer, Watson, was capable of playing and winning "Jeopardy!" in 2011¹². One year later, Google brain trained itself to recognize

⁹ See "Biography for Data (Character) from "Star Trek: The Next Generation" (1987)", www.imdb.com/character/ch0001459/bio.

¹⁰ See "History of the PC Therapist", www.loebner.net/Prizel/weintraub-bio.html.

¹¹ See "Deep Blue", *IBM*, www-03.ibm.com/ibm/history/ibm100/us/en/icons/deepblue.

¹² *Ibid*.

an image of a cat among other pictures¹³. Since then, technological progress in AI has enabled machines to recognize human speech, classify images, answer questions, drive cars, and more. Starting from 2011, when Apple introduced Siri on the iPhone 4s¹⁴, AI has proven to a much wider audience that it can search for information on the Internet and recognize and reproduce speech upon request. It is important to note here that the deployment of Siri became a big game changer in the way we perceive AI. Popular culture reflects on recent technological progress and offers its own vision of humankind's future. The fear of the near emergence of AI has been forcefully illustrated in the recent movies referred to above.

Looking at further contemporary examples, it is obvious that AI has continued to capture the interest of science fiction writers and filmmakers. At a time of rapid technological innovation, the debate about computers and computer intelligence involving digital storage of all kinds of information, has become more significant than ever before. Martine Rothblatt, the highest-paid female CEO in the United States and the co-founder of Terasem Movement Foundation, is currently developing means that would allowed people to create a “mind file”, a collection of one’s personal characteristics and information of “everything that we pour today into Google, into Amazon, into Facebook” [15:51-15:57]¹⁵ and in this way prolong the life of human consciousness. Such an idea of mind cloning is illustrated in the movie *Transcendence* (2014). The movie shows the possibility of uploading the mind of a dying scientist into a computer. However, as with the science fiction films referred to above, the experiment ultimately goes awry, and the cloned mind in *Transcendence* is reminiscent of Kubrick’s HAL 9000.

Body and Mind of AI

The current discourse on AI is closely linked to that on the dichotomy between mind and body. Attributing human elements to machines, scientists and engineers have attempted to develop both the software and hardware of computers. If the hardware

¹³ See “Google's Artificial Brain Learns to Find Cat Videos”, *Wired*, 26 June 2012, www.wired.com/2012/06/google-x-neural-network.

¹⁴ See “Apple Launches iPhone 4S, iOS 5 & iCloud”, *Apple*, 4 October 2011, www.apple.com/uk/newsroom/2011/10/04Apple-Launches-iPhone-4S-iOS-5-iCloud.

¹⁵ “Martine Rothblatt: My daughter, my wife, our robot, and the quest for immortality” *TED*, Filmed Mar 2015,

www.ted.com/talks/martine_rothblatt_my_daughter_my_wife_our_robot_and_the_quest_for_immortality#t-941724.

of the computer is perceived as the body of the machine, the software represents its mind. The development of the body and mind of the computers follows the cultural idea of the split between human body and mind. The ancient Greek philosopher Plato perceives body and soul as two different entities. He states that “body is the soul’s lot” (qtd. in Proclus 76). Based on that assumption, René Descartes argues that the body is itself a machine that operates according to the laws of nature. By contrast, the mind has nothing to do with nature. Positing the idea that the body is a machine that is animated and dominated by the guiding mind, Descartes placed mind over body¹⁶. The body is often perceived as “a source of interference in, and a danger to, the operations of reason” (Grosz, 5). In feminist theory the split between body and mind instituted a division between nature and culture, which, as Sherry B. Orthner suggests, is reflected in the traditional assumption that “male [... is] associated with culture and female seems closer to nature [...]” (75). Thus, the female is regarded as a body, whereas male is usually viewed as a mind.

Kevin Warwick, a researcher in the field of artificial intelligence, robotics and biomedical engineering, has written of his perception of AI technology as an embodied process. In 2002, Warwick agreed to insert a microchip under his skin to undergo a series of relevant experiments. The microchip was connected to Warwick’s nervous system and enabled him to send signals from his brain to a computer. While medical science has harnessed contraptions such as respirators for decades, the microchip implanted in Warwick’s body was seen as an important step in cybernetics, with Warwick being regarded as “the world’s first human-robot hybrid”¹⁷. He wrote:

What is of considerable interest now, and will be even more so in the future, is the effect of the body on the intellectual abilities of the body’s brain. Ongoing research aims at realising an AI system in a body - **embodiment**¹⁸ - so it can experience the world, whether it be the real version of the world or a virtual or even simulated world. Although the study of AI is still focused on the AI brain in question, the fact that it does have a body with which it can interact with the world is seen as important (10).

¹⁶ Hatfield, Gary, "René Descartes", *The Stanford Encyclopedia of Philosophy* (Summer 2016 Edition), Edward N. Zalta (ed.), www.plato.stanford.edu/archives/sum2016/entries/descartes.

¹⁷ See “The Cyborg: Kevin Warwick is the World’s First Human-Robot Hybrid”, *Motherboard*, 10 August 2010, www.motherboard.vice.com/en_us/article/788axy/the-cyborg-kevin-warwick-is-the-worlds-first-human-robot-hybrid.

¹⁸ bold in source.

Drawing from Warwick's argument, an AI needs a body, that would enable the intellect to grow by interacting with the world and thus learning from it. This issue of the embodiment and mind has become crucial in robotics. Some may argue that robots do not need to have a human body to do the job that they were built to do, like the robots that build cars in factories. Nonetheless, Murray Shanahan stresses embodiment is a particularly important characteristic for robots with AI, because a machine that has a humanlike body can inhabit and co-exist in the human world¹⁹. Human appearance enables robots to serve as an interface for the human-computer interaction. Another possible component that explains the tendency for engineers to personify the robots that they design was summarized by Moses Znaimer, who claims "we can hardly resist assuming that there is a mind", when a robot has a humanlike face.²⁰ This would enable robots to work in sectors such as hospitality or healthcare, where a 'human touch' is regarded as an integral component of the profession.

Despite being able to reconstruct a human body, technology is currently struggling to develop an artificial human brain. Bruce Duncan created a project, called LifeNaut²¹, that encourages people to 'donate' their consciousness in the form of videos, texts, and messages to their future body. He believes that a human mind could be saved as a file and uploaded to a new body or robot within the next 10-20 years. On the one hand, as our minds struggle to keep up with all of the information available online, the idea of boosting our brain capacities by connecting our brains to the Internet is appealing. For example, an artificially augmented brain that could instantly call upon real time financial data from the Internet may be better placed to make an investment or a decision than someone relying on natural cognitive abilities alone. On the other hand, what could be perceived as technological progress and evolution could equally be portrayed as a biological disaster, provoking negative consequences that are not fully foreseen or understood. In this vein, some prominent scientists have predicted that the era of human pre-eminence will end when the first humanlike AI takes over and begins to evolve. Thinkers like Ray Kurzweil and Murray Shanahan have called it singularity. In an interview with the BBC, theoretical physicist Stephen Hawking stated that "humans, who are limited by slow biological evolution, couldn't compete,

¹⁹ See "Artificial Intelligence explained". BBC. www.bbc.com/news/av/technology-30296999/artificial-intelligence-explained.

²⁰ See "Bruce Duncan – Talks with the World's Most Sentient Robot, Bina48", *YouTube*, [01:02 – 01:07], uploaded by ideacity, 31 August 2015, www.youtu.be/mwOFWABbfW8.

²¹ See www.lifenaut.com/learn-more.

and would be superseded”²² [BBC, 04:53 – 04:59]. Thus, many scientists, including Hawking and the billionaire tech entrepreneur Elon Musk, expressed their fears about the future of humanity in an open letter, titled “Research Priorities For Robust And Beneficial Artificial Intelligence” (2015). However, concerns about the fate of humanity did not prevent Elon Musk from launching a project Neuralink²³, which will ultimately enable connections between human brains and computers.

While scientists in this field can be seen to be attributing humanlike bodies to computer programs, innovative entrepreneurs are approaching the same field from the opposite perspective. Artists from the RealDoll company have been working on attributing artificial intelligence to their sex-dolls. Since 1997, Matt McMullen has been sculpting life-size female bodies, which he sells as ‘companions’ to his costumers. Previously they were merely anatomically correct female bodies that very closely resembled actual human body parts. Now, in an age of advanced computer technology, his team is creating dolls with artificial intelligence²⁴. The incorporation of AI into the dolls allows the owner of such dolls to customize not only how the doll looks, but also the character of the doll according to his or her personal preferences. In this way, pioneering scientists and tech entrepreneurs appear to merge the technological progress and human fantasy.

With this overview of the existing technological trends, it is evident that *Ex Machina*’s artificial female robots resemble the ongoing technological efforts of many companies, such as Google, Boston Robotics, and RealDoll. In particular, Ava’s appearance evokes comparisons to Hanson Robotics’ female robot Sophia²⁵ and Ishiguro’s robot Erica²⁶, both looking like their cinematic portrayal.

What Does the Future Bring?

The emergence of AI has been regarded as an inevitable next step in the development of computers. Demonstrating further advancements, a collection of over 100 robots was opened to the public at the Robot exhibition in the Science Museum in London in

²² See Cellan-Jones, Rory, “Stephen Hawking warns artificial intelligence could end mankind”. *BBC*, 2 December 2014, www.bbc.com/news/technology-30290540.

²³ See www.neuralink.com.

²⁴ See Trout Christopher, “RealDoll’s first sex robot took me to the uncanny valley”, *Engadget*, 11 April, 2017, www.engadget.com/2017/04/11/realdolls-first-sex-robot-took-me-to-the-uncanny-valley

²⁵ See “Sophia”, Hanson Robotics, www.hansonrobotics.com/robot/sophia.

²⁶ See “Erica” www.theguardian.com/technology/ng-interactive/2017/apr/07/meet-erica-the-worlds-most-autonomous-android-video.

February 2017. It presented a wide range of implementations for mechanical creatures: from toy robots to robots that can replicate the movements of the human body, read TV News, and even serve as a hostess in a hotel²⁷. There are robots, that can Hoover a floor by scanning, calculating the obstacles and size of the surface of the floor. There are robots that can flip burgers, create flavours in the kitchen and even deliver pizza²⁸. Though robots are already doing purely mechanical tasks in a large number of fields, it is nevertheless clear that developments in AI have pushed - and will continue to push - the capabilities of robots much further. Currently, scientists are working on robots that could be used in fields that are too dangerous for humans, such as the nuclear industry, space exploration, and for military purposes.

More such evidence of the growing role of AI in our lives is so-called general AI forms, such as the aforementioned Siri. This type of AI is typically seen as locked inside devices like phones, and tablets – things that are now mainly considered to be computers. This type of disembodied AI does not interact with the physical world of humans, it can only project its intelligence as an image, text, or sound via the technological device that it is housed in. By contrast, AI can also be embodied in an artificial human body where it is much more likely to be perceived as a human-like machine²⁹. Embodied AI, therefore, has the potential to share a common space with people. Hiroshi Ishiguro, a leading roboticist in Japan, is widely known for pioneering work to build a robotic copy of himself, HI-1, and wrote a paper in July 2006 on this topic entitled “Building artificial humans to understand humans”. In this paper, Ishiguro writes, “When I (Hiroshi Ishiguro, the person on whom the Geminoid prototype was based) first saw HI-1 sitting still, it was like looking in a mirror” (Ishiguro, 140). He further states, “Our current technology for replicating the human figure as an android has reached a fine degree of reality” (Ishiguro, 136). No doubt, that with the currently available technologies, androids can be built as increasingly convincing copies of real humans. For instance, the Madame Tussauds celebrity wax replicas are so perfectly crafted that visitors can have second thoughts about whether they are in fact looking at a statue or a real person. Now, a robot’s skin can be produced

²⁷ See “Robots exhibition at the Science Museum, London”. 7 February 2017, www.theguardian.com/technology/gallery/2017/feb/07/robots-exhibition-at-the-science-museum-london-in-pictures.

²⁸ See Mogg, Trevor, “Domino’s Has Built a Self-Driving Pizza Delivery Robot”. 18 March 2016, *Digital Trends*, www.digitaltrends.com/cool-tech/dominos-pizza-delivery-robot.

²⁹ See “Artificial intelligence: A brief introduction to AI”. *BBC*, 2 December 2014, www.bbc.co.uk/news/av/technology-30296999/artificial-intelligence-a-brief-introduction-to-ai.

from silicone, and “[...] the details are so finely replicated that they cannot be distinguished from those of human beings [...]” (Ishiguro, 136), and technological advances are already enabling the realization of embodied forms of AI reminiscent of the cyborgs envisaged by science fiction.

It may sound like a dream come true for an employer: robots that work without asking for a pay rise, taking sick leaves, or complaining. However, Judith Halberstam claims that “the prospect of thinking machines, or cyborgs, inspired at first religious indignation; intellectual disbelief; and large-scale suspicion of the social, economic, and military implications of an autonomous technology” (1). There is no guarantee that intellectual machines will be fully automatic and independent from their human creators as there is no guarantee that a machine will improve the world we are living in right now.

Alex Garland’s *Ex Machina*

Although *Ex Machina* has been widely discussed in media, newspapers, blogs, and podcasts, there have been few academic works published concerning the movie³⁰. With this academic analysis, I aim to contribute to the academic knowledge as I believe that *Ex Machina* has strong potential for critical examination. The research question of this thesis is how do power relations between the characters in the film represent a metaphor for the capitalist and gendered hierarchies of the Western world in the 21st Century?

Since this thesis deals with an analysis of the power structures in *Ex Machina*, I will draw upon the key concepts on power introduced by the French philosopher, Michel Foucault. Foucault stresses that, in order to study power, one has to take a close look at “the different modes by which, in our culture, human beings are made subjects” (2000: 326). With this in mind, when analysing power relations, one has to take into consideration a number of social elements that constitute them. Foucault suggests focusing on three different modes of objectification. First, “the modes of inquiry that try to give themselves the status of sciences” (2000: 326); secondly, “dividing practices”, where the subject divides him- or herself from another; thirdly, the way

³⁰ See Brian Jacobson, “Ex Machina in the Garden,” *Film Quarterly* 69, no. 4 (2016): 23-34; Katherine Emery Brown, “Gender Identity in *Her* and *Ex Machina*,” in *The Journal* ed. Amanda Spoto and Emily Hedges (Dartmouth, Dartmouth Masters, 2015), 27-38; Katie Jones, “Bluebeardean Futures in *Ex Machina*,” *Gender Forum* 58 (2016): 1-5.

human beings turn themselves into “subjects of ‘sexuality’” (2000: 327). The thesis will return to Foucault’s ideas to support the main arguments.

To answer the research question, this thesis offers three readings of Alex Garland’s debut film. In Chapter 1, I will use Marxist cultural theory and Slavoj Žižek’s approach to that ideology to provide an analysis of *Ex Machina* in relation to the current conditions of technological production. I will look at the contemporary ideological trends in the tech industry and in Silicon Valley and their reflection in the movie. Moreover, I will examine the ideology and social relationships between the employee, enslaved robots and the employer, who controls them. Using Michel Foucault’s theory on discourse and power, I will look at the modern means for surveillance that are depicted in *Ex Machina* and the way they affect power. Because this chapter speaks to the cultural settings as well as the relations between the characters, this Marxist reading is the most extensive of the three readings. The two following chapters aim to supplement the discussion of power structures from the perspective of feminist and psychoanalytic theories.

In Chapter 2, I will examine the movie through the lens of gender studies. I will take a close look at masculinity and femininity. I focus on the relationships between Nathan and Caleb to analyse the dynamics between the two male characters. I will link this to discourses about masculinity to examine how the dominant masculinity is constructed and performed. I will closely examine male dominance in its various forms: man over nature, man over technology, and man over woman. Moreover, I will look at the construction of the cyborgs’ gender. What is it that makes Ava and Kyoko female robots? Ava’s role frames gender as a construct that can be learned and imitated. In this sense, *Ex Machina* is not only a story about interactions between cyborgs and humans, but a discussion about the relations between gender, technology, embodiment, and power. I will use Donna Haraway’s *Cyborg Manifesto* (1984) to look at the ways in which one can move beyond the binary oppositions of femininity and masculinity.

Chapter 3 will draw upon Sigmund Freud and Jacques Lacan’s psychoanalytic theories to analyse the film. I will look at the relationships between the desires and fantasies of the spectators and the subjectification of the female cyborg in the movie. The themes arising from *Ex Machina* include discussions about sexual objectification concerning

the movie's two female cyborgs: enslaved cyborg Ava and Asian hostess Kyoko. An important part of the film's dialogue explicitly draws upon female cyborg Ava's sexualized feminine appearance. I would argue that, together with Caleb, the viewer forgets that Ava is a machine. Therefore, I will examine the objectification and performativity of the gender by looking at the constructed sexuality of the female robots. I will examine the role of a gendered cyborg in the discourse about gender and power. I will also use Slavoj Žižek works and Laura Mulvey's essay on *Visual Pleasure and Narrative Cinema* (1999) to analyse the "male gaze" in the film's scenes.

The aim of this thesis is to analyse the power relations in the film and to elaborate on the functioning of power and knowledge and its relation to gender and subjectivity. An analysis of the power relations in the science fiction film *Ex Machina* contributes to an understanding of the social relations in society.

Chapter 1: Marxist Reading of *Ex Machina*

A film is never just a film, but the mirror image of a social reality. *Ex Machina* articulates the complexities of the ideology of computer technological companies and constructs a perception of socioeconomic reality. Therefore, in order to analyse *Ex Machina* from a Marxist perspective one, first, needs to place the movie in its historical context, and provide a socioeconomic examination that illustrates the point out of which the film emerges and in which it is received. In Karl Marx's day, capitalism could be seen as having divided members of society into two groups: workers (the proletariat) and capitalists (the bourgeoisie). This chapter will argue that the class struggle described by Marx is embodied in the power struggle between the characters of *Ex Machina*. I begin my analysis by shedding light on the relation of the film to society and argue that the former illustrates certain aspects of the economic and ideological conditions of the 21st century. Fundamental concepts for the Marxist theory, such as ideology, capitalism, class, alienation, and interpellation, will shape the analysis of Alex Garland's *Ex Machina* in this Chapter.

Reflections of the Silicon Valley myth

As a postmodern movie, *Ex Machina* is layered with references to other cultural texts. Its operation on many levels with references to existing companies, adds an extra meaning to the plot. The most prominent one is the reference to computer technological companies. In this case, the entrepreneur Nathan's company BlueBook references an actual search engine company - Google. Like Google, the fictional BlueBook is the largest and most famous search engine in the world³¹. As for the character of Nathan, he is often described in the media as a mix of the non-fictional billionaires Steve Jobs and Mark Zuckerberg³². This allows one to draw parallels between the actual companies Google and Facebook and the fictional company BlueBook. Therefore, to understand the ideology of BlueBook and to place it into

³¹ Mufson, Beckett. "Building BlueBook: The Design Behind "Ex Machina's" Super Search Engine". Creators. 11 April 2015. Web. 1 may 2017.

³² See Olsen, Mark, "Sci-fi 'Ex Machina' feels modern, futuristic and classical at once", LA Times, 9 April 2015, www.latimes.com/entertainment/movies/la-et-mn-ex-machina-20150409-story.html; Dalton, Stephen, "Ex Machina: Film Review", *Hollywood Reporter*, 16 January 2015, www.hollywoodreporter.com/review/machina-film-review-764038.

social-economical context, one should seek to better understand the ideology of Google, Facebook and the CEOs of the technological companies.

Silicon Valley, a region in California which stretches from San Francisco to San Jose, has become the birth place of many computer tech companies and one cannot ignore the significant wealth of some of the technological giants, such as Google, Apple, Microsoft, and Facebook, in the 21st century. Besides, a look at the latest ranking of the world's billionaires provided to *Business Insider* by *Wealth-X*³³ reveals that the majority of the richest people are men, and almost a quarter of them made their wealth through technology. According to *Forbes's* annual report on the world's richest individuals in 2017, Bill Gates, the founder of Microsoft, remains the wealthiest person in the world for more than two decades³⁴. Not far off, the income of Facebook's 33-year-old billionaire Mark Zuckerberg grew by \$11.4 billion, moving him to 5th place in the ranking³⁵. The wealth and influence of these and other technological businesses, not without the help of the popular media, has cultivated many clichés, particularly about the boom of tech companies and the glamour of Silicon Valley itself. Chong-Moon Lee, William F. Miller, Marguerite Gong Hancock, and Henry S. Rowen argue that "Silicon Valley promotes openness, learning, sharing of information, the co-evolution of ideas, flexibility, mutual feedback, and fast responses to opportunities and challenges" (Lee et al., 6). From this view, stem common assumptions about the start-up companies based in Silicon Valley. Silicon Valley is commonly presented in the media and in popular culture as a dream place to work: a laid-back vibe, table tennis sessions in the office, free cups of coffee and donuts, flexible working hours, and an informal to non-existent dress code. As for Google itself, it explicitly claims on an official company web page that, because Larry Page and Sergey Brin started their company in a garage, they prefer to keep the funky and non-formal atmosphere in their offices around the world as a reminder of those early days of entrepreneurship³⁶. A cinematic example of this is Shawn Levy's movie *The Internship* (2013), which presents the hip and tech-savvy image of Google that the company itself is trying to project. Of course, because Google strongly polices the use of the company logo or any

³³ Stanger, Melissa, Emmie Martin, and Tanza Loudonback. "The 50 richest people on earth." *Business Insider Deutschland*. N.p., 26 Jan. 2016. Web. 1 May 2017.

³⁴ Dolan, A. Kerry, "Forbes 2017 Billionaires List: Meet The Richest People On The Planet". *Forbes*. 20 March 2017. Web. 17 September 2017.

³⁵ *Ibid.*

³⁶ See "Our story: from the garage to the Googleplex", *Google*, www.google.at/intl/en/about/our-story.

other Google products in cinema³⁷, the movie turns out to be more an advertisement for the company than a truthful depiction of it. All of the apparent perks associated with these tech companies have created the impression that they are as concerned with employee welfare as they are about profits. However, a contemporary critique of high tech firms offered by Christian Fuchs, David Pellow and media platforms like *The Atlantic*³⁸ provide a study of the dark side of the Silicon Valley culture, claiming that human suffering and increasing social inequality lurk behind technology and innovation. For instance, tech writer Jamie Bartlett, in the BBC2 series *Secrets of Silicon Valley*³⁹ investigates the impact of Silicon Valley startups on economies and societies across the world. The TV series illustrates the technological advances being implemented by startups, some of which are working on replacing the jobs of real people. For example, he looks at a firm that is testing self-driving trucks, and at tech that can identify abnormal cell growth more quickly and accurately than experienced medical professionals. Bartlett also showed that social media giants like Facebook can undermine democracy and influence politics, for example by facilitating the dissemination of fake news. He warns that the 'Tech Gods' promise to make the world a better place may be undermined by the negative consequences of the technology they have themselves implemented in society.

Ex Machina raises questions about the culture of tech firms and looks particularly at the related concepts of the power relations and ideologies of such companies. One example is the development of the relationship between Caleb and his boss Nathan, which can be described as relaxed and analogous to the code of conduct commonly associated with the CEOs of companies like Google or Apple. A self-made billionaire, Nathan makes several impressions upon the viewer from the outset. For example, in the first scene, when Caleb arrives at Nathan's remote mountain residence, we see Nathan, who is wearing plain, informal clothing, working out on his terrace. In contrast to Nathan, Caleb has donned a suit and is seemingly aiming for a 'young professional' style. Nathan's plain clothes allude to the myth of the self-made man. He dresses like notable tech chiefs Steve Jobs and Mark Zuckerberg and projects the idea that he is an ordinary young man and that any ordinary man could have been in his

³⁷ See "Featuring Google products in films or TV", *Google*, www.google.com/permissions/google-in-films-tv.html.

³⁸ See Greenfield, Rebecca, "Silicon Valley's 'Culture' Is a Cover-up", *The Atlantic*, 21 February 2013, www.theatlantic.com/technology/archive/2013/02/silicon-valley-culture/318103.

³⁹ See "Secrets of Silicon Valley", BBC2, www.bbc.co.uk/programmes/b0916ghq.

place. This supports the capitalistic idea that everyone can make as much money as they want, while any failure to achieve that goal is because of a lack of effort. This illusion in turn puts more pressure on those individuals who have not become billionaires themselves. As further analysis will show, *Ex Machina* reflects on the dark and often hidden characteristics of the tech companies.

Camera as an Instrument of Power

As Neil Landau and Matthew Frederick state “The opening image should suggest a movie’s central theme and prompt intrigue as to where it is headed” (1), the opening scene of *Ex Machina* introduces the theme of technological innovations by depicting the office of the fictional internet search company BlueBook. Besides, by depicting the office atmosphere of a tech company, the scene stresses the ambiguity of such development in the modern world. For example, the absence of the spoken dialogues and face-to-face conversations between co-workers highlights contemporary communication, which facilitates interactions between people through online messaging. Further, the fast montage of the shots symbolizes the pace of the technological era in which everything happens too fast, and no one is able to fully understand or control what is happening. Thus, the audience is forced to focus on the visual side of the film’s narrative, where the images and on screen dialogs create a perception of the social reality.

The establishing shot features a female profile behind the glass wall facing a computer screen. The reflection of the silhouettes of the people passing the woman’s office suggests that she remains invisible to the others despite a transparent office room. Yet the scene’s cold blue colour and the fact that the camera peeks at her from behind the glass walls creates a feeling of isolation between the woman in the shot and the rest of the workers. The following shot adds to this idea by depicting a man sitting in an armchair that seems to have been designed in a way that obscures the face of the person who is sitting in it. He is sitting alone and two other chairs near him are empty. Although the open-plan configuration of the office promotes transparency and a spirit of teamwork, it does not come across as a friendly environment. It is possible to guess that this is an office of a trendy company analogous to today’s big tech firms, where the work space is one of camera surveillance, glass walls, neon lighting, and state-of-the-art IT systems.

In the next cut the viewer is introduced to the first character in the story – a young programmer, Caleb, who works in this office. As with the rest of the office workers depicted at the beginning of the film, Caleb is isolated. But this time the object that separates him from the rest of his colleagues is much smaller and disguised as a trendy 21st century accessory. The headphones, which sit deep in Caleb’s ears, convey the notion of social isolation. Despite the open environment of the office, the tiny earbuds can mute the presence of the other colleagues around him. Therefore, the headphones illustrate the sound isolation of the character and visually stress that Caleb is withdrawn from other people (Fig. 1).

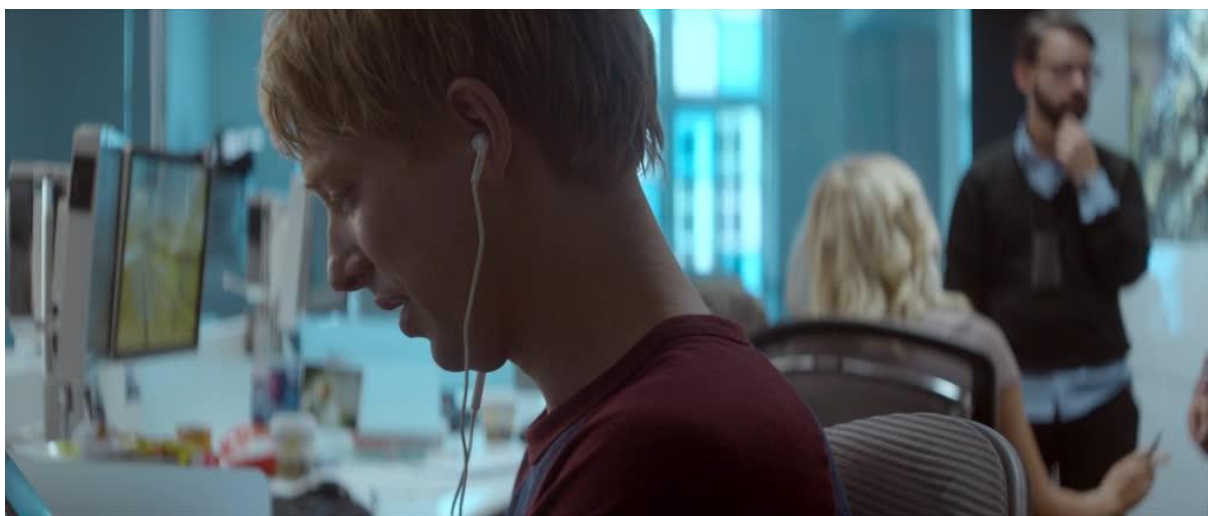


Figure 1. *Ex Machina* [00:01:22]

When a pop-up alert on Caleb’s monitor states, “VIP EMAIL RECEIVED Subject: STAFF LOTTERY” – “FIRST PRIZE”, the viewer thereby learns that Caleb is the apparent holder of a lucky ticket. The word ‘lottery’ makes it appear as if Caleb has been drawn at random from a pool of colleagues. Success in winning the competition makes Caleb appear special, differentiating him from the others. Thus, the film marks a shift in social relations and a shift from collective achievement to individualization. After a series of congratulations, the camera faces Caleb to film his reaction to the VIP email. The shot depicts Caleb as a special winner by placing him in the centre of the frame, contrasting him with the others in the room (Fig. 2). Prior to the email, Caleb’s face is notably depicted in cold, dull tones, whereas his face is lit by warm yellow light once he has received the email. The lighting makes the lucky lottery winner stand out against the background of the cold blue office. Moreover, unlike the other people in the frame, whose faces are either blurred or cropped, Caleb’s face is well lit, clearly

seen, and in focus. By making Caleb visually stand out from his colleagues, this shot stresses his presumably special position. Yet, the young programmer does not take his ear plugs out even when his cheering and smiling colleagues come to congratulate him on the prize (Fig.2). It is important to note that the heads of the female colleagues are cropped from the shot, as if their faces are unimportant. Thus, the shot foreshadows the gender inequality that is represented in the unequal treatment of the female machines.



Figure 2. *Ex Machina* [00:01:46]

Camera angles in *Ex Machina* are also used to address one of the film's main concerns – surveillance. At the beginning of the film, the audience observes Caleb (Fig.3) from the perspective of a person who is gathering information about him from behind the cameras. Firstly, because of the wide camera angle, which creates almost a fish eye perspective, the viewers notice that Caleb is being observed from the camera of his computer. Secondly, the audience see that the young programmer's reaction to the message on the screen is under surveillance by the security camera on the ceiling (Fig.4). Finally, the film depicts Caleb from the perspective of the camera in his smartphone (Fig.5), which makes it clear that he is under constant supervision from cameras, which are pointed at him from different angles.



Figure 3. *Ex Machina* [00:01:10]

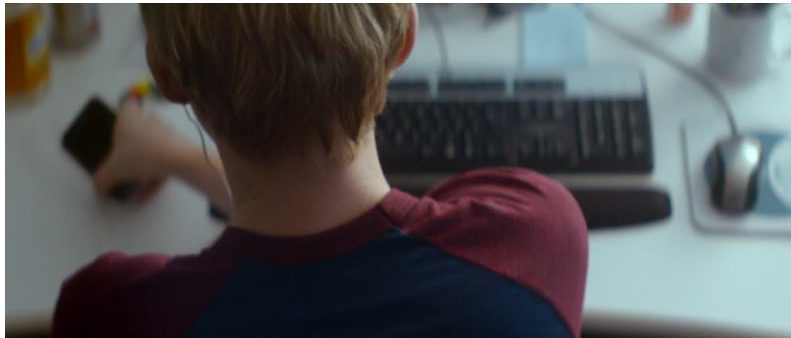


Figure 4. *Ex Machina* [00:01:15]

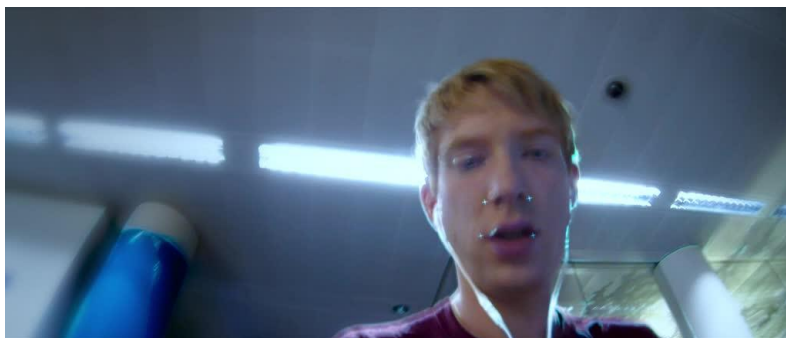


Figure 5. *Ex Machina* [00:01:17]

In addition to this, the viewer's gaze is linked to the camera's gaze through a series of reverse-angle shots that first show the character and then the object of the character's gaze. The audience is not only watching the movie, but being placed in the position of an observer who is gathering information and data about the character. Yet, the viewer is unsure from whose perspective they are looking at Caleb. Later, the tracking shot from Nathan's facility (Fig. 6) reveals to the audience that the person who is watching the programmer is Nathan. He is seen in his private room in front of several computer screens. The wall next to Nathan is covered in post-it notes, which contain information and observations that Nathan has gathered for his project. The density of the notes signify that Nathan has paid attention to every detail and already knows a lot about the participants in his project. Thus, the opening scene sets the theme of technological innovation and the human role within it.



Figure 6. *Ex Machina* [00:11:40]

Indeed, surveillance, which is one of the major themes in debates around modern technological advances, is also examined prominently in the film. According to the French philosopher Michel Foucault, the mechanism of power and surveillance can be illustrated by Jeremy Bentham's model of the ideal prison, the panopticon. The architectural design of the panopticon is a ring of cells surrounding a guard tower in the centre of it. The guard may be or may not be in the tower, yet since the prisoners in the cells cannot themselves see into the tower, they are never certain if they are being watched. Foucault argues that, because of the constant state of visibility, Bentham's Panopticon ensures that people themselves regulate their behaviour. Foucault claims that "[...] the major effect of the Panopticon: to induce in the inmate a state of conscious and permanent visibility that assures the automatic functioning of power" (201). Throughout the movie Caleb is being constantly observed by cameras. Moreover, the above described surveillance scene suggests that Caleb's work place is a modern version of Bentham's prison. In Foucault's words, Caleb is "[...] seen, but he does not see; he is an object of information, never a subject in communication" (200). The BlueBook CEO gathers information about Caleb before he arrives at the facility and continues to monitor him once Caleb is inside the house. In addition, up until the end of the film, Nathan does not concede to Caleb that he is the subject of an experiment. Bentham and Foucault foresaw some of the implications of increased surveillance, however modern technologies have extended the possible scope of

surveillance beyond that horizon, enabling a subject to be placed under surveillance in almost any setting and at any time.

The conscious and permanent visibility of modern social media communication, promoted by tech companies such as Facebook and Google, encourage people to share and post about everything from everyday occurrences to important events in people's lives such as a change in relationship status, the birth of a child, the death of a relative, and so on. The result is that those companies know more about their users than the users know about the companies' true motives. While internet users are not physically held captive in Bentham's jail, their online activities are constantly scrutinized and monitored by other people. As the whistle blower Edward Snowden has argued in the context of leaked NSA documents, we are living in "the golden age of surveillance"⁴⁰. Surveillance can be seen to reach directly into the brains of humans in order to monitor all human thoughts.

Furthermore, it can be argued that popular search engines like Google aim to commodify all the knowledge on the Internet and to erect a modern, cyber equivalent of Foucault's panopticon whereby all online users' activities are monitored. However, as a social media specialist, Christian Fuchs, argues that Google not only collects information on its users, but "[...] accumulates profit and thereby also personal wealth of a few by exploiting the many"⁴¹ in a capitalist fashion. As Fuchs notes, Google stores and uses the data of its users and sells them to advertising agencies. It also aims at the commodification of users' knowledge, which is an aspect of human subjectivity. At the same time, other critics have framed these activities in terms of surveillance – that Google advances user surveillance and violates its users' privacy.

Building on Foucault's concept of biopower, Micheal Hardt and Antonio Negri have argued that "[P]ower is now exercised through machines that directly organize the brains (in communication systems, information networks, etc.) and bodies (in welfare systems, monitored activities, etc.) toward a state of autonomous alienation from the sense of life and the desire for creativity (23). There is a suggestion that Google, wired with all human brains, would become the ultimate form of constant exploitation – all

⁴⁰ CeBIT Global Conferences - 21 March 2017: "Datasecurity and Privacy in the Age of Surveillance". Edward Snowden, World-Famous Whistleblower, [00:25:30] www.cebit.de/en/news/article/edward-snowden-learn-magic-49225.xhtml.

⁴¹ See Fuchs, Christian, "A Contribution to the Critique of the Political Economy of Google", 8 January, 2011, www.uta.edu/huma/agger/fastcapitalism/8_1/fuchs8_1.html.

human thoughts could be directly transformed into commodities to be sold as data to advertising clients. A perfect dynamic profile of each individual could be created so that not only his or her general interests are targeted by advertisements, but also commodity advertisements could be communicated to customers instantaneously. Targeted advertisements could be directly and continuously transported to human brains. Framed in this fashion, Google's vision of Artificial Intelligence could therefore be seen in terms of constant real time exploitation of human creative activities. The movie mirrors the way in which Google violates the privacy of its users by explaining to the audience how BlueBook's CEO Nathan has used the data. To illustrate the similarities between BlueBook and Google, Adam Rutherford, a scientist and writer, points out the feasibility of the creation of AI:

Ava's consciousness is drawn from the BlueBook, the film's version of Google: her knowledge and behaviour are generated by harvesting the teraflops of information we reveal about ourselves when we're using the internet.⁴²

The quote above is representative of the huge potential of tech companies. In the social media age, where many users voluntarily upload their thoughts to different platforms, companies continue to develop ways for information to be commodified and sold. The film reflects on data gathering when Nathan reveals to Caleb:

Nathan: Every cell phone, just about, has a microphone, camera and a means to transmit data. So I turned on every microphone and camera across the entire fucking planet and I redirected the data though BlueBook. Boom! Limitless resource of vocal and facial interaction.⁴³

It is particularly unsettling for Caleb to find out that his own phone, which he carries around all day, is spying on him. Nathan, as a true capitalist, is, however, delighted with this limitless and free resource, which he can use to turn into AI. Thus, this scene highlights the notion that human brains and their activity have clearly become a commodity in the 21st century. Initially, the Internet was regarded as a free place in which anybody could express their opinions and communicate and connect with the world. However, this has changed as advertisements, mass media, and politics have begun to play a more prominent role in the online environment. The serious tone of the film's opening scene reflects contemporary debate about surveillance and

⁴² Rutherford, Adam. "How realistic are the robots of *Ex Machina*?" *The Telegraph*. Jan 22 2015. Web. 1 May 2017.

⁴³ Alex Garland, *Ex Machina* [0:36:06-0:36:25].

information gathering. The film adopts a sceptical position in this debate, warning about the potential pitfalls of rapid technological advances.

In addition to enabling supervision and surveillance, cameras also allow one to wield power and re-shape the course of events. The power dynamics change when the other characters take a seat behind the monitors. The computer screen can be seen as a guard's tower inside a modern-day panopticon. For instance, later in the film, Caleb gains access to secret information about Nathan's other cyborgs. He finds out that Nathan created other female robots and that he failed to treat them with respect, keeping them locked up despite their wish to break free. Caleb interprets Nathan's actions towards those female robots as a form of domestic abuse and as amoral. At the same time, the film's ending and, in particular, the ambiguity about the outcome of Ava's escape, put in question Nathan's cruelty towards his creations. The footage that Caleb sees makes him want to save Ava from her abusive creator. Moreover, the knowledge allows Caleb to judge and to decide whether Nathan deserves to be punished for his deeds. Both the composition and the camera angle indicate the shift in power relations (Fig. 7). Shooting from a God's-view perspective, which could also be the perspective of a CCTV camera, the director shows visually how the relationship between the characters have changed. Caleb's figure is illuminated by the light from the elevator. In contrast, Nathan is almost unseen in the darkness. The boss lays on the floor like a deposed monarch. Because of the angle and Caleb's upright position, he appears to be tall and towers above Nathan. Having access to Nathan's computer, Caleb is able to reprogram the protocol that would open the doors in the event of a power cut. This example from the film therefore effectively illustrates the functioning of power and its relation to subjectivity and knowledge formation.



Figure 7. *Ex Machina* [01:13:01]

Nevertheless, while Caleb wishes to be in control of the events, he is clearly a subject in the discourse. He does not occupy the same position as Nathan, because he does not have the full knowledge of the situation he is in. It is illustrated by the mise-en-scène when Caleb goes through Nathan's files. In contrast to his host (Fig. 6), the camera faces Caleb behind the monitor from a different perspective (Fig.8). The middle shot – instead of the long shot used in Nathan's case (Fig.6) – hides from Caleb some of the information that Nathan has collected. Caleb faces only one monitor instead of three, which symbolizes the limits of his knowledge. The shot stresses that he does not have a full overview of the situation and only has limited time to go through Nathan's project files.



Figure 8. *Ex Machina* [01:09:26]



Figure 9. *Ex Machina* [01:15:26]

Finally, Caleb is not the last person to gain access to the information. Kyoko's final appearance behind Nathan's computer shifts the course of events. She watches Caleb as he smashes the mirror in the bathroom (Fig.9). The viewers do not see Kyoko's full face, only her Asian eyes. Kyoko's eyes both evoke her 'otherness' as an Asian woman and her supernatural origins as a robot. Moreover, as the viewers only see her eyes she appears like a ninja who is plotting her revenge. The background silhouettes of what appear to look like bamboo trees underline the stereotypical portrayal of an Asian person. The dimmed light creates an air of mystery around this scene and suggests that Kyoko is taking over control of the situation. Overall, the above stated examples illustrate that power is constituted in the ability to see and collect information about the actions of others.

The Power of Ideology

How did it happen that human online activity became the subject of the ideology promoted by tech companies? In Marxist analysis, ideology is a critical term that can refer to a systematic body of ideas articulated by a dominant class of a society to all (Storey, 2). An understanding of the ideology begins with Marx's statement that "[I]f life is not determined by consciousness, but consciousness by life" (656). Marx argues that the social relations between people are predetermined by the way people produce their material life at a particular time and place. Ideologies appear natural, and thus often invisible. Moreover, capitalism itself is an ideological system that shapes the way people think. It encourages individualism, freedom, mobility, and consumption, which lead to ultimate enjoyment and happiness. *Ex Machina* gives the viewers the

opportunity to see the hidden agenda of the tech companies' ideologies. For instance, the illustration of Caleb's wining and dining with his boss can be seen as a social practice, that offers a release from the usual demands of the social order e.g. employer-employee relations.

The French philosopher, Louis Althusser, in his seminal essay *Ideology and Ideological State Apparatuses (Notes towards an Investigation)* (1972), defines ideology as a set of practices, relations, and representations, which interpolates its subjects silently, hiding the means by which it dictates the way one should think. Therefore, ideology promotes the interests of a ruling class and helps to cover oppression, injustices and negative aspects of a society they govern. It is ideology, which functions in material experiences and forms through Ideological State Apparatuses (ISA's), changes individuals to ideological subjects within capitalist societies. ISA's operate through ideas and representations that create certain attitudes and behaviours that people are led to believe are natural. According to Althusser, ISA's include large social institutions such as schools, families, churches, that shape the way people's thought in a certain way. Technology is viewed as one of such institution that creates and uses ideology. For instance, Google as one of the largest tech companies advances its own system of believes. Siva Vaidhyathan argues that Google enhances and exploits a belief that "[...] the constant application of advanced information technologies—algorithms, computer code, high-speed networks, and massively powerful servers—will solve many, if not all, human problems" (55). Thus, through tech company ideology, Google presents itself as a saviour of the world and promotes certain attitudes, behaviours, ideas, perceptions, and values. By doing so, the company masks the more controversial aspects of its practices.

Althusser states that "all ideology hails or interpellates concrete individuals as concrete subjects" (190). Thus, interpellation is the process of identification with specific ideology. According to Althusser, individuals are subjects in and by the ideology. Bringing Althusser's idea to bear on *Ex Machina*, it seems important that Nathan very quickly starts referring to his employee as "dude". Using this informal term, Nathan initiates the process through which Caleb will acknowledge and respond as a subject of ideology. Thus, it helps to secure the dominance of Nathan's position. One would expect to hear something more sophisticated and formal from the boss than "Caleb Smith. Dude!". Instead, Nathan not only prevents Caleb from taking pleasure

in feeling important on his visit to the companies' CEO, but turns him into a subject by saying:

Nathan: Caleb, I'm just gonna throw this out there, so it's said, okay? You're freaked out.

Caleb: I am?

Nathan: Yeah. You're freaked out, by the helicopter and the mountains and the house, because it's all so super-cool. You're freaked out by me, to be meeting me, having this conversation in this room, at this moment. Right? And I get that. I get the moment you're having, but... Dude, can we just get past that? Can we just be two guys? Nathan and Caleb. Not the whole employer-employee thing.

Caleb: Yeah, okay.⁴⁴

Nathan dampens Caleb's expectations and the excitement that Caleb is experiencing when he first meets his self-proclaimed genius boss. After profoundly having stated the reasons for Caleb's freaked out state, Nathan plays down his genius and wealth, but acknowledges that Caleb feels 'freaked out' by the scale of Nathan's premises. By the register of his conversations with Caleb, the BlueBook CEO Nathan, following on the ideology of the tech companies, does not acknowledge himself as an exploiter with regard to his employee Caleb. This puts Caleb in a submissive position and enables Nathan to dominate and direct Caleb what he should do. Characters in the film call upon the viewer to identify himself or herself as an ideological subject. Caleb's facial expression and acting indicate that he is puzzled by Nathan's offer. Even if Caleb would pretend to forget that Nathan is his super-rich boss, he would keep thinking about it, because their relationships are uneven. In this moment, he is probably thinking of how one should behave with one's boss if he asked to pass on "the whole employer-employee thing". Unable to figure it out how he is supposed to act, Caleb is even more confused, but, since he is a guest, he must accept his host's rules.

Nathan's relationship towards Caleb in the initial stages of the movie is evocative of an observation made by the cultural critic and philosopher Slavoj Žižek in an interview with VICE:

A typical boss no longer wants to be a boss [...] Imagine these post-modern companies like some digital programming company, creative agency. A boss comes in jeans and embraces you with all the vulgarities, 'Did you have a good

⁴⁴ Alex Garland, *Ex Machina* [00:06:43-00:07:08].

fuck last night?' Whatever, but, fuck you! Then he remains a boss. He nonetheless gives orders, but the social game is you have to pretend that we are friends and so on. In these relations, the first step to liberation is to force him to really behave like a boss. To tell him, 'No, fuck you, no comradeship!' Treat me as a boss and give me explicitly orders and so on.⁴⁵

In the contract to the 19th century industrial capitalism, the post-modern boss represents the shift in capitalism to more friendlier behaviour. Nathan's friendly approach to Caleb allows him to mask his true motives under the niceness and openness. As a typical fake boss, Nathan's comments to Caleb aim to create an image of a down-to-earth boss and hide the real power relations. Moreover, when a boss suggests being friends with an employee, the boss expects an employee not only to do the job mentioned in a work contract, but also to take on extra work that one would assumingly do for free for a friend. This model is profitable for the boss – the favours are done because of the friendship. Moreover, the boss does not have to pay for the favours and extra hours of work, because friendship is not a capitalistic relationship. Therefore, in *Ex Machina*, Caleb is seen to be caught in Žižek's "social game", whereby Nathan constantly exercises his dominance over Caleb in a friendly, but manipulative way. For example, when he sends his servant Kyoko to wake up Caleb and remarks:

Nathan: She is some alarm clock, huh? Gets you right up in the morning.⁴⁶

Caleb ignores this sexist comment about Kyoko, even though he is clearly not comfortable with it. For him to accept and endorse the conversation's register would mean to lower his standards as an educated individual. When Nathan wants to hide his true colours, he uses vulgarity to divert Caleb's attention. For instance, when Caleb asks a serious question "Why did you give Ava sexuality?" Nathan takes an opportunity to make Caleb uncomfortable and starts to explain how to "screw" Ava. he says:

Nathan: Anyway, sexuality is fun, man. If you're gonna exist, why not enjoy it? What? You want to remove the chance of her falling in love and fucking? And in answer to your real question, you bet she can fuck.

Caleb: What?

Nathan: In between her legs, there's an opening, with a concentration of sensors. You engage them in the right way, creates a pleasure response.⁴⁷

⁴⁵ "Vice Meets Superstar Communist Slavoj Žižek." *YouTube*, uploaded by VICE, 11 October 2013, www.youtube.be/XS_Lzo4S8lA?t=5m14s.

⁴⁶ Alex Garland, *Ex Machina* [00:24:33-00:24:37].

⁴⁷ Alex Garland, *Ex Machina* [0:46:31-0:46:57].

When Caleb asks a serious question, the conversation with Nathan becomes a conversation of a son with his father, where one seeks advice on how to sleep with a girl. This aspect of human life, traditionally perceived as private, is not a conversation a boss would have with an employee.

The contrasting lifestyles of Nathan and Caleb also appear to live up to both Žižek's analysis and the myth of the glamorous Silicon Valley company. The two-faced nature of the boss-worker relationships portrayed in the movie is clearly stated in this phrase:

Nathan: Sorry buddy, you understand, though, given Ava, and you being kind of an unknown. I mean, great guy. Instant pals, and so on. But...⁴⁸

Even though Nathan reputedly says to Caleb that he should relax and enjoy himself in the house, Caleb is a stranger in Nathan's house. Everything that he is allowed to do has been decided for him: what time to wake up, what rooms he can access and which not. Moreover, the screen in his room shows him what Nathan wants him to see.

Nathan's seemingly generous invitation to host Caleb at his compound has a friendly social component as the pair dine together and get to know one another, but Nathan also needs something from Caleb. For instance, it is clear when Nathan states that "This building isn't a house. It's a research facility. (Alex Garland, *Ex Machina* [00:08:42-00:08:45]) that he did not invite his employee to see his estate and meet the boss. He continues to fuel Caleb's interest by saying:

Nathan: And I want to talk to you about what I'm researching, I want to share it with you. In fact, I want to share it with you so much, it's eating me up inside. But there's something I need you to do for me first.⁴⁹

After Caleb swallows the bait, Nathan tells him that he first needs to sign a BlueBook non-disclosure agreement. Here is the contradiction to the flat hierarchy and friendly relationships between two men. Of course, Caleb and Nathan could just hang out and drink beers, but that would not bring any profit to a capitalist. The film illustrates the two-fold nature of capitalism with a human face. On one and, Nathan presents himself as a friendly boss, on the other hand he uses Caleb for his own project. Moreover, Nathan has prepared an agreement to ensure that the idea behind his project belongs only to him. This is another explicit example of the separation of labour from the

⁴⁸ Alex Garland, *Ex Machina* [0:21:55-0:22:08].

⁴⁹ Alex Garland, *Ex Machina* [00:08:52-00:09:03].

product. Max Weber summarized this tendency, stating that “[e]very bureaucracy seeks to increase the superiority of the professionally informed by keeping their knowledge and intentions secret. [...], it hides its knowledge and action from criticism” (233). Applying that principle to the film, one can state that Nathan has to keep his true goals a secret to maintain his dominant position over Caleb.

After reading the BlueBook non-disclosure agreement, Caleb is not sure that it would be appropriate to sign it without consulting a lawyer. However, that is the moment when Nathan puts all of his stakes on Caleb’s ego and wins, saying:

Nathan: [...] What can I tell you, Caleb? You don’t have to sign it. You know, we can spend the next few days just shooting pool, getting drunk together. Bonding. And when you discover what you’ve missed out on, in about a year, you’re gonna regret it for the rest of your life.⁵⁰

Nathan gives Caleb a choice between something that Caleb does not actually enjoy doing – getting drunk with his boos - and an unknown opportunity. What makes Caleb sign the agreement is that he does not want to miss out on something he does not even know about. Nathan sells Caleb the idea that he would regret it if he did not sign the agreement. It is fascinating that Caleb did not decide to get an opportunity to get some rest from work, but instead decides to take on more responsibility. He decides to show the boss that he is capable worker and signs the non-disclosure agreement presented to him by Nathan. The salary or pay rise for this special extra project was not mentioned. Therefore, Caleb has seemingly agreed to provide his skills and time for free. Caleb’s possible aim of wanting to prove his capacities to Nathan provides an illustration of interpellation, when an individual is made to think of him- herself as an independent entity while in fact they are controlled by invisible forces that perpetuate the status quo. Caleb thinks of himself as of a winner of a competition, a smart programmer whose skills and knowledge are being needed in the company, but in fact, it appears that he has been used by his employer to contribute unpaid hours to Nathan’s research on AI.

Moreover, the BlueBook non-disclosure agreement brings the discussion back to actual companies like Google and Facebook. Both of those companies have their terms and conditions for users. The users often do not realize that by using Google services

⁵⁰ Alex Garland, *Ex Machina* [00:09:40-00:10:00].

or being on Facebook they are legally bound by an agreement between the company and a user. How many times does a user actually read the terms and conditions before registering for a Gmail or Facebook account? Google's Privacy Policy⁵¹ is quite complex and lists a complicated set of the company's rules. Taking into consideration that that is a legal document, one has to take the time to read and fully understand the meaning behind it. One would have to familiarize oneself with the technical terms beforehand to fully understand such a document. When Caleb says that he needs a lawyer to sign a BlueBook non-disclosure agreement, he stresses the complexity and seriousness of the document. In real life, one usually agrees to the internet companies' terms and conditions without even reading them. Thus, the BlueBook non-disclosure agreement is another illustration of the ideology of the tech companies. The film illustrates the way people agree to terms and conditions they do not fully understand, just because they want to use Google to search for more information, or register on Facebook because they want to be a part of an exclusive community.

The Italian Marxist Antonio Gramsci argues that oppressive regimes stay in power through a combination of coercion and consent. On one hand, the film presents Nathan's character as a violent and threatening CEO. For instance, when Caleb asks Nathan during dinner why he cannot call the people who install the power system to come back and fix the power cuts, he answers:

Nathan: No. There's too much classified stuff here. So after the job was done, I just had them all killed.⁵²

The film never clarifies whether Nathan is joking or telling the truth. A man of his power could well get away with murder. That ambiguity of the statement scares Caleb and makes him cautious of his boss. Nathan's answer points out that he does not value human labour and human life in general. On the other hand, Nathan as a representative of a ruling social group seeks to present his own particular interests as the general interests of the whole society. For instance, when Caleb asks Nathan "Why did you make Ava?", the answer is:

⁵¹ See "Welcome to the Google Privacy Policy", www.google.at/intl/en/policies/privacy.

⁵² Alex Garland, *Ex Machina* [0:33:23-0:33:27].

Nathan: Look, the arrival of strong artificial intelligence has been inevitable for decades. The variable was “when”, not “if”. So, I don’t see Ava as a decision just an evolution.⁵³

Nathan argues that the creation of Ava is a natural process. Thus, he portrays the construction of an artificial, inelegant robot as the natural order of things, rather than an idea that he himself thought of. Invoking the ideology of the tech companies, Nathan masks his own intentions and presents AI as a positive new step for humanity.

In summary, it can be said that *Ex Machina* articulates the complexity of ideologies. To the extent that ideologies play a negative role in employees’ lives, the film particularly reveals the dark and underappreciated downside of the prevailing tech company ideology. It is clear that Nathan maintains a position of dominance in his relationship with Caleb that is reminiscent of Marxist theory and particularly of the employer-employee relationship in post-industrial capitalism characterized by Slavoj Žižek. Therefore, the film allows the audience to experience the nature of this ideology and to reach a better understanding of its mechanisms.

Nathan as a Tech Tycoon

To understand post-industrial capitalism, one should look back at the conditions of industrial capitalism. The state of industrial capitalism described by Karl Marx and Friedrich Engels in *The Communist Manifesto* (1848) relate to the conditions of production in Britain in the 19th century. Marx and Engels present the conditions of industrial capitalism by stating that “Modern industry has converted the little workshop of the patriarchal master into the great factory of the industrial capitalist” (12). George R. Boyer, researcher in the field of economic history, argues that while Marx and Engels criticize the bourgeoisie for the exploitation of the workers, they also praise the development (153). Indeed, in some ways the drive to accumulate profit goes hand in hand with innovation. Karl Marx, in his work *Capital* (1867-1894) describes the conditions of the 19th century and defines capitalism as the circulation of money as an end in itself. Thus, capitalism can be defined as a system in which every object, every person, every activity can be defined in terms of its worth in money.

⁵³ Alex Garland, *Ex Machina* [1:04:30-1:04:46].

Nathan, the Bluebook CEO, is a modern version of the capitalist in the traditional Marxist sense. His capitalistic behaviour represents the bourgeoisie, whereas his employee Caleb and the servant Kyoko stand for the working class. Marx states that “the bourgeoisie has torn away from the family its sentimental veil, and has reduced the family relations to mere money relations” (6). Relating Marx’s statement here to BlueBook’s CEO, one is drawn to the similarities between the bourgeoisie of Marx’s era and those in the modern-day rich list. The film points to the fact that Nathan is incapable of developing human relationships with either men or women. Nathan lives in isolation in his house, devoid of any human contact. Moreover, he never shows his emotions or feelings. The only scene in which viewers see the genius boss’s emotions and weaknesses is when he is drunk. For example, in the scene in which Nathan is seen lying on a couch, positioned in the manner of a man on his death bed with his hands crossed on his chest, he repeats the words that Robert Oppenheimer said after he created the atomic bomb. This scene foreshadows the future death of the CEO and the escape of the AI machine into the real world.

Even though the film does not answer the question of why Nathan created the AI machines, the following quote from *The Communist Manifesto* (1848) sheds lights on Nathan's rationale: “The bourgeoisie cannot exist without constantly revolutionizing the instruments of production, and thereby the relations of production, and with them the whole relations of society” (Marx and Engels, 7). Based on this assumption, one could argue that Nathan, as the bourgeoisie, is driven by the constant need to accelerate production. The creation of the thinking machine, which could potentially replace human beings in the work place, could be seen as a threat to the labour market.

Despite the obvious similarities between Marx’s class description and the characters in *Ex Machina*, the class division in the 21st century cannot be fully simplified to reflect Marx’s notion of class structure. One obvious difference is that a worker in the 21st century does not typically face the same struggles that a worker in the 19th century would have faced. Secondly, the conditions of production, and the general standard of living, are generally far higher than they were during the industrial revolution. Using the characters in the film as an example, Caleb and Kyoko, both appear well-dressed and aesthetically good-looking. Caleb is healthy and his income is adequate enough to fully enjoy some creature comforts. However, Caleb's predicament merits a closer look. The improvement in workers' living conditions may also be accompanied by

certain downsides. Herbert Marcuse, for instance, sees a foreseeable danger in such improvement. He writes on the threatening developments of the “technological society”:

It is a good way of life – much better than before – and as a good way of life, it militates against qualitative change. Thus emerges a pattern of one-dimensional thought and behaviour in which ideas, aspirations, and objectives that, by their content, transcend the established universe of discourse and action are either repelled or reduced to terms of this universe (14).

Thus, Marcuse proposes that the subject is comforted with the existing possibilities and conditions, which prevents him or her from questioning society. Moreover, if in the age of the industrial revolution, the hierarchies between classes were evident, the post-capitalistic society hides that class division across “[a] comfortable, smooth, reasonable, democratic unfreedom” (Marcuse, 3), the ideological celebration of capitalism, and the disruption apparent in technologically advanced society. In this sense, the intentions of the new bourgeoisie remain intact, but are hidden and masked, which makes them more pernicious.

Returning to Nathan’s character, the viewer first learns about the CEO of BlueBook from the conversation between Caleb and the pilot who is hired to fly the ‘lucky’ winner of the lottery to the prize.

Caleb: How long until we get to his estate?

Jay: (LAUGHING) We’ve been flying over his estate for the past two hours.⁵⁴

Not only the movie thereby builds an element of tension and anticipation towards the boss, but without being introduced to the character, the quote above underlines the extraordinary wealth of the Caleb’s boss. It is obvious that the man who owns the estate of such an enormous size must be super-rich. To demonstrate the CEO’s prosperity, the dialog is framed by a series of shots that show the helicopter flying over fascinating landscapes: glaciers, waterfalls, green forests, and mountains that are all part of the mysterious boss’s land. The shots of the nature demonstrate not only his vast wealth but also the CEO’s ownership over nature. In the fashion of a traditional capitalist, Nathan possesses the nature that holds the natural recourses: forests, water, and soil.

⁵⁴ Alex Garland, *Ex Machina* [00:01:55-00:02:02].

Yet the viewer is invited to imagine the boss, based on pre-existing ideas about how a successful capitalist should look and act.

Further on, when Caleb enters Nathan's residence, the camera movement gradually reveals the facility's interior: the fusion between natural stone, light provided by the glass walls and the elements of the chic, modern furniture. The moving discovery shot conveys a sense of anticipation towards the meeting. Classical music is playing in the background. Here, music plays an important role in the representation of the boss's cultural identity. As classical music is commonly associated with sophisticated and highly cultured people, one would assume that a person who plays such music in his or her home is highly educated. However, closer examination shows that Nathan is also a conqueror of nature. Despite being an individual actor, Nathan seemingly owns and presides over a state-sized territory. His position in relation to nature and land is reminiscent of the way in which European imperialists expanded their territories in the period between 1870 and 1914 – an era Edward Barbier described as the “Golden Era of Resource-Based Development” – accumulating natural resources to fuel capitalistic economies in Europe (10). As a capitalist, Nathan too appears to see nature as a commodity, something that could be turned into a profit. His research facility is surrounded by wilderness: the forest, the mountains, the river, everything is a natural environment. The shots of the mountain's peaks and the abundant forest create an uncomfortable atmosphere. In a way, these shots are not a source of relaxation and recreation as nature is normally perceived, but a reminder of the power of nature and the capitalist's exploitation of it.

With this in mind, it is important to point out that capitalism is not only a question of human-to-human relations, but also of human-to-nature relations. The modern capitalist commodifies the free gifts of nature to gain a profit, much as the early capitalist as perceived by Marx. Perhaps nature, as a source of materials and goods that could be made and sold, is no longer of interest to a contemporary capitalist. Jason W. Moore in his essay *The End of Cheap Nature* claims that “[c]apitalism's basic problem is that capital's demand for cheap natures rises faster than its capacity to secure them” (288). Since all capitalists are restless in their desire to accumulate more wealth, they would look for a cheaper natural recourse to lower the cost of production and gain higher profit. Even though Moore's first concern is natural resources, I would argue that the human is also a product of nature. In this case, the Internet provides an

unlimited and free flow of human interactions. Since the Internet is considered to be free of charge, hence, no one has to pay for the use of search engines or social media, people agree to trade their data in exchange for information online. The certain scenes in *Ex Machina* touch upon this issue directly. For instance, when Nathan explains to Caleb why he created Ava's brain:

Nathan: Here's the weird thing about search engines. It is like a striking oil in a world that hadn't invented internal combustion. Too much raw material. Nobody knew what to do with it. You see, my competitors, they were fixated on sucking it up and monetizing via shopping and social media. They thought that search engines were a map of what people were thinking. But actually they were a map of how people were thinking. Impulse. Response. Fluid. Imperfect. Patterned. Chaotic.⁵⁵

In the movie, Nathan casually admits to Caleb that he exploited user data to create Ava's brain. In this case, people's thoughts become a commodity that could be sold and bought without necessarily having consent the users' prior knowledge. The close analysis at the metaphorical comparison of the search engines with striking oil suggests that the information flow is as expensive as oil. If natural resources are commodified, they can, from the perspective of the capitalist, be extracted and sold. In the case of the Internet, user data can also be collected and sold to big corporations or governments. The first part of the quote confirms that search engines are collecting and selling users' data to advertising companies who wish to promote their goods to internet users. However, the second part of the quote stresses that this is only the tip of the iceberg. It is even more beneficial to monitor how people behave online, what they search for, how, and when, and in turn influence their thoughts and shape their behaviour online and offline. Therefore, Ava is the product of capitalism and reflects her capitalist creator's ideas. When Ava tells Caleb where she would go if she had a chance to leave the room, she answers that she would go to a busy traffic intersection to observe people. Having all the knowledge from BlueBook software, Ava still wants to observe real people. Her insatiable hunger for human interactions points out to the way machines acquire the behaviour of their creator.

Moreover, nature plays an important role in the movie by highlighting the artificiality of Nathan's creations. For Nathan, as a conqueror of nature, a female cyborg is another frontier to conquer. In Reynaud's words: "[...] Man identifies woman with nature and

⁵⁵ Alex Garland, *Ex Machina* [0:38:12-0:38:54].

treats her accordingly: he tames and cultivates her. Just as he turns forests into fields and gardens, so he makes woman into housewives and models” (144). In the case of *Ex Machina*, the female cyborgs’ bodies signify nature. Their programmed functions signify the male goal of taming and cultivating nature. Thus, because Nathan believes that he has total control over embodied technology, he does not see his creations as a treat.

As Caleb moves closer to the terrace, the audience hears a heavy bag being punched. The punching sounds blend with the sound of running water, as though it were a fight between man and nature. The sound of the punches is fairly strong and one can imagine that the body that produces these sounds is strong and powerful. However, that false image of a boss brings the viewer and Caleb to disappointment when they first see Nathan. The image the audience is left with does not match to the typical billionaire boss image. The sports clothes Nathan is wearing, namely a tank top and shorts, enable the viewer to see his muscled arms and hairy chest. Nathan appears as a masculine male, sweaty after his training. However, because of his position in the corner of the frame, he appears as a small figure. In contrast to Caleb, who looks smart and tall in his suit, Nathan is exhausted and sweaty after the boxing session. The nature in the background of the scene occupies nearly all the space in the shot. Thus, Nathan looks quite small in his attempt to fight against nature (Fig.10).



Figure 10. *Ex Machina* [00:05:41]

The viewers can see Nathan's torso and muscles. Even the first words of greetings that he says to Caleb, make the audience think that this person is all about his body rather than his brain. Nathan says to Caleb:

Nathan: To be honest, I thought we'd have, uh, breakfast together, but, um... I can't really eat anything. I got the mother of all fucking hangovers.

Caleb: Oh, yeah?

Nathan: Oh, my God, like you wouldn't even believe. When I have a heavy night I, uh, compensate the next morning. Exercise. Anti-oxidants. You know?

Caleb: Yeah, sure.⁵⁶

This dialogue supports the idea that a man can drink a lot, as long as he compensates for the damage to his body the next day. It is an illusion that one can do whatever one wants to one's body as long as one takes care of it the following day. This idea of the freedom of male behaviour, according to Reeser, resides in capitalism (25). He argues that man is free to earn as much money as he wants, to change his class status through hard work, and to buy what one wants (Reeser, 25). This attitude towards the body illustrates the capitalistic need to consume: to consume more alcohol and thus more antioxidants.

Overall, Nathan's character certainly embodies capitalistic behaviour, albeit in a modern and seemingly friendly twist with regard to the way he treats his employee, his body, and nature. Even though the relationship between the CEO and the worker appears to be friendly and informal, the underlying framework governing their relationship still follows capitalistic conventions and hierarchy.

The Working Class of BlueBook

Because Caleb is introduced to the audience first, they assume that he is the film's protagonist. This assumption creates the false impression that Caleb is the main hero. However, towards the end of the film, it is difficult to say, who the protagonist is. Is Caleb the main hero or rather a diminished working-class hero? In the age of industrialization, workers were seen as subordinate parts to the machine. Marx and Engels write that "[Masses of labourers] are daily and hourly enslaved by the machine, by the overlooker, and, above all, by the individual bourgeois manufacturer himself"

⁵⁶ Alex Garland, *Ex Machina* [00:06:08-00:06:26].

(13). This paper argues that today's worker is mainly dependent on the computer. The increasing role of computers not only in the work place, but also in life in general, suggests that life is becoming increasingly commodified and exploited for the purpose of capital accumulation. Capitalism relies upon the exploitation of commodified labour-power. For instance, Caleb is an ordinary worker at Nathan's company who confesses to living in modest surroundings, while his boss owns a vast amount of land and a private mountain residence. Caleb's personality is mainly defined by what he does – he is an employee for the world's largest search engine. The camera captures Caleb's pride when Ava tells him about the company that he works for:

Ava: BlueBook, named after Wittgenstein's notes. It's the world's most popular internet search engine, processing an average of 94% of all internet search requests.⁵⁷

As the movie suggests, it is not only cyborgs but also humans who are programmed by culture to fulfil capitalists' needs. Caleb, to some degree, is a traditional Marxist labourer in a contemporary 21st century setting. He is determined to perform his tasks and to prove to Nathan that he is a good worker and a talented programmer. The audience learn more about Caleb from the conversations with Ava, when he states:

Ava: Where do you live, Caleb?

Caleb: Brookhaven, Long Island.

Ava: Is it nice there?

Caleb: It is okay. I got an apartment. It's kind of small. It's very small. But, uh, it's a five-minute walk to the office and five-minute walk to the ocean, which I like.⁵⁸

However, despite working for such a big company Caleb does not reside in a big apartment. Unlike his boss Nathan, Caleb chose to live in a small apartment, but in one that is close to his work. An equal time to the office and to the ocean creates an illusion of the work-life-balance so often promoted by outwardly modern technological companies. Moreover, the audience further learns that Caleb has no family or relationships, which strongly suggests that he lives to work, rather than works to live. It is also important to stress, that the room that Nathan hosts Caleb in is situated beneath the ground and, therefore, has no windows. Nathan himself summarizes it as

⁵⁷ Alex Garland, *Ex Machina* [0:28:03-0:28:14].

⁵⁸ Alex Garland, *Ex Machina* [0:28:19-0:28:44].

claustrophobic. It looks like a place that is more suitable as a bunker than a living space. However, Nathan explains that it is not a house but rather a research facility. Even though Caleb's room should be his private space, the fact that it is a part of a research facility makes it ultimately a workspace. Moreover, the cameras constantly monitor his activities. Because the workspace illustrates an implicit relationship between employee and employer, the quality of the accommodation provided by Nathan stands for the value of an employee for the company. It is apparent in the movie that Nathan does not appreciate Caleb's private life by violating his private space.

Caleb has not only been invited to conduct a Turing test, but also to reconstitute Nathan's ego. Like anyone from the bourgeoisie, Nathan needs to have contact with the working class to exercise his dominance and power and to feed his egoism and pride. There is a competition between Caleb and Nathan. Nathan is in a dominant position since he is the boss, host, creator, and father, whereas Caleb is just a programmer, and a guest in Nathan's house. However, by saying that Caleb is a capable man, Nathan challenges his employee to show his abilities. What is at stake? Ava. As Kimmel noted: "[w]omen themselves often serve as a kind of currency that men use to improve their ranking with other men" (7). Ava becomes the prize for the winner. It could be argued that Caleb thinks that the actual prize for winning the competition is to spend a week with a beautiful female AI rather than to spend a week with his boss. Thus, at the beginning, Caleb tries to prove to Nathan his capabilities, whereas towards the end Ava convinces him that Nathan is a villain and she has to be rescued.

During the movie, Caleb realises that he did not win the lottery, but was rather selected to carry out a Turing Test. He pushes Nathan to the wall with questions about the latter's lies and the office-competition. However, it is not the office competition that Caleb is concerned about. The tensions between the two characters illustrate the competition between two classes. Caleb wants to show Nathan that he is smart and knows that Nathan is planning something evil, but he does not know what exactly. When Caleb tries to provoke Nathan to tell him the truth, Nathan outsmarts Caleb by feeding him with another lie. But as a fake and friendly boss Nathan compliments Caleb to avoid the conflict:

Nathan: I needed someone that would ask the right questions. So I did a search and I found the most talented coder in my company.⁵⁹

The movie resembles a game of chess where every player's move is followed by a move of an opponent. Caleb is satisfied with the title of 'the most talented coder' in the most popular search engine company. Nathan goes on playing with Caleb's ego by calling him "smarter than everyone else" and adding:

Nathan: You got the light on you, man. Not lucky. Chosen.⁶⁰

Despite acting in a friendly manner towards the employee, the scene when Caleb meets Nathan stresses the distance between the boss and the worker. Even though positioned in the same frame, Caleb remains distant from Nathan (Fig. 11, 12).



Figure 11. *Ex Machina* [00:05:54]

⁵⁹ Alex Garland, *Ex Machina* [0:54:48-0:54:53].

⁶⁰ Alex Garland, *Ex Machina* [0:55:2009-0:55:14].



Figure 12. *Ex Machina* [00:06:03]

During the conversation between Nathan and Caleb, the camera cuts back and forth, focusing on each of the characters. Those shots illustrate the unequal position between the employer and the employee. When Nathan speaks to Caleb, the filmmaker uses over-the-shoulder shots (Fig. 13,14), which gives the impression that the audience sees the subjective point of view from the character. When the camera becomes the eyes of Nathan's mind, the viewer can see from his perspective and associate him or herself with the character. In contrast, the over-the-shoulder shot is not used when shooting the dialogue from Caleb's perspective. When Nathan speaks, the black sleeve of Caleb's jacket matches to the background and creates the optical illusion that he is not present in the frame (Fig.14). Moreover, out of deference to his boss, Caleb is wearing a suit, whereas Nathan is standing in sweaty sports clothes and obviously does not care about making a good first impression on Caleb. The lack of suit demonstrates to his opponent that he is the boss, and he does not play by anybody's rules. He is setting the rules. Behind his back on a quite open position, there is a shelf with half empty bottles of spirits that betray Nathan's taste for alcohol. Nathan clearly makes little effort to greet his guest with hospitality or respect. In this way, the first meeting with the employer foreshadows the unequal relationships between Nathan and Caleb which will be mainly reduced to an economic exchange and power control.



Figure 13. *Ex Machina* [00:06:51]



Figure 14. *Ex Machina* [00:07:00]

As the film's narrative progresses the audience notice that Nathan occupies more and more space. The scene in Caleb's room (Fig.15) illustrates how Nathan dominates the private space of his employee by laying in his sweaty sports clothes on his guest's bed. He looks relaxed and at the same time dreamy as if he is celebrating the successful accomplishment of this plan.



Figure 15. *Ex Machina* [00:09:42]

The shot (Fig.16) evidently summarizes the power hierarchies at the beginning of the film. Caleb is placed behind the desk – the position of an office worker. Despite having a chair to sit on, Caleb’s position is lower in relation to his boss’s. It also appears to be less comfortable to sit on a chair, than on a desk. Whereas Nathan has the full freedom to stand, to sit, or to move around Caleb, Caleb himself appears to be limited in his movements and thereby in his freedom. Finally, even though Nathan is positioned at the side of the employee, he is still above him.



Figure 16. *Ex Machina* [00:09:52]

With this in mind, it is important to refer to the concept of alienation. Marx argues that alienation is a state in which de-skilled workers perform fragmented, repetitive tasks with no idea of the overall concept (1959: 30). To accumulate wealth, a capitalist must separate labour from the ownership of capital. Therefore, the capitalist owns the

means of production and distribution, while the worker, who is involved in the production, earns a wage but has no ownership of the product that he or she produces. For instance, it may seem like a thinking machine is a creation of a single person, namely Nathan. However, upon closer examination, it is clear that such a creation would not be possible without the millions of inputs from internet users, their data, conversations, etc. Thus, since Ava's intelligence is a product of human interaction, she is a creation of the workers from the BlueBook search engine company as well as internet users more generally. In Marx's terms, she is an object of workers' production. However, the worker, namely Caleb, is alienated from it.

Moreover, the film illustrates that, because of the lack of exchange of information between Caleb and Kyoko, neither of them can see the whole picture of the situation they find themselves in. Caleb agrees to participate in the research because he is curious about what Nathan is working on and willing to work in a cool company for an impressive boss. Nathan maintains the status quo and thereby emphasises the gap between the proletariat and the bourgeoisie. For instance, upon his arrival, Caleb receives a key card that allows him to enter the building. It is a kind of ID for Nathan's strictly regulated world. Caleb's key card for Nathan's compound only allows him to enter the rooms that are permitted by his key card settings. Furthermore, Nathan does not share the secret of how Ava's brain functions with Caleb. By keeping the artificial technology to himself, Nathan remains in a position of superiority. He says:

Nathan: I understand that you want me to explain how Ava works. But I'm sorry, I'm not gonna be able to do that.

Caleb: Try me. I'm hot on high-level abstraction.

Nathan: It's not because I think you're too dumb. It's because I want to have a beer and a conversation with you. Not a seminar.⁶¹

Nathan conceals the secret to Ava's creation by playing the previously discussed image of a friendly boss who does not want his workers to work too hard. To explain how Ava works for Nathan would mean, not only to destroy the genius behind his creation, but also to relinquish his position of superiority. If anyone else knew how to create a human AI, Nathan would be unable to prevail and dominate the market. Since he is a capitalist, he does not wish to share his knowledge for free. Instead, Nathan

⁶¹ Alex Garland, *Ex Machina* [0:16:51-0:17:05].

encourages fun activities like drinking beer and talking. Moreover, Nathan constantly encourages Caleb to have fun.

Initially, a more detailed examination of 'fun' is needed. To fun have in everyday terms means to engage in activities that enable one to escape the pressure of one's duties and worries. Fun is generally associated with enjoyment and the freedom to do what one wants to do. Thus, an obligation to have fun conflicts with the definition of fun. A prominent example of the obligation to have fun is the film's dancing scene. Nathan offers Caleb to switch off his mind after a hard-working week and enjoy the pleasure of dancing with Kyoko. The lyrics of Get Down on Saturday Night (1983), a song by Oliver Cheatham, highlight the invitation to enjoy:

You work all week long,
You work your fingers to the bone
Fridays' enemy,
I can't wait for Saturday to begin!⁶²

Not only can this scene be regarded as a showstopper to release the tensions between the characters, it can also be perceived as a demonstration of capitalistic ideology in practice. Nathan invites Caleb to enjoy the night, forget about work, which ultimately means that he wants Caleb to forget about his subordinate place in the house. The idea behind it is that Caleb would not overthink the situation and tolerate the playful boss.

By the end of the film, Caleb thinks that Nathan is a villain and he must rescue Ava from her abusive creator. Nathan knows that Caleb is messed up and needs to go home. Nevertheless, they both try to hide their attitudes towards each other in this conversation:

Nathan: I'm not getting all maudlin or anything, but I'm gonna miss having you around.

Caleb: Thanks, man, I appreciate that. Oh, here, let me say, thank you so much for bringing me here.

Nathan: Oh.

Caleb: It's been a trip. ⁶³

Caleb is seen to be constantly manipulated by the characters in the movie. Nathan and Ava try to manipulate Caleb by producing the 'truth' that they want Caleb to live by.

⁶² Alex Garland, *Ex Machina* [00:59:12-00:59:26].

⁶³ Alex Garland, *Ex Machina* [1:18:00-1:18:09].

Thus, the characters also find different ways to use Caleb's male ego to do so. First, it is Nathan's ploy of telling Caleb that he is a "talented programmer" that enables Nathan to trick Caleb and use him to conduct the experiment. Second, Ava turns Caleb against his boss. She pretends to like Caleb and creates the illusion that she as a conscious computer can fall in love with a programmer. At last, when Kyoko demonstrates to Caleb that she is a robot too, Caleb has been convinced that Nathan is a villain. Caleb thinks of himself as a hero who must save Ava from her abusive creator.

Given that Caleb has appointed himself the task of rescuing Ava, it is worth touching upon the assertion on power and resistance put forward by Foucault. He states: "Where there is power there is resistance" (1990: 95). Foucault's argument certainly holds true with regard to the relationship and dynamics between dominant Nathan and his adversaries Ava and Caleb. The tensions between the characters are also reminiscent of the revolutionary struggle of the proletariat against the bourgeoisie described by Marx and Engels: "What the bourgeoisie, therefore, produces, above all, is its own grave-diggers. Its fall and the victory of the proletariat are equally inevitable" (20). When Ava and Kyoko ultimately revolt against Nathan, their unity, seen from a Marxist perspective, becomes a weapon against their patriarchal-owner. Thus, the end of the film presents a type of revolution, albeit it is obviously open-ended and ambiguous with regard to the prospect of a better future for AI.

Chapter 2: Feminist Reading of *Ex Machina*

The myth of dominant heterosexual masculinity, which is assumed to be something essential and self-evident in many cultures, sustains male dominance. Emanuel Reynaud argues, that division between male and female gender is rooted in Judeo-Christian patriarchy, which “develops into the appropriation of women and the struggle for power among men” (139). Heidi Hartmann states that “[c]apitalism grew on top of patriarchy” (101). She argues that the division of labour by sex is rooted in patriarchy, where the hierarchical relations between men and woman enable man to dominate over the woman (Hartmann, 99). Yet capitalism creates a division of gender labour for its own benefit. For Judith Butler “[...] power appeared to operate in the production of that very binary frame for thinking about gender” (viii). *Ex Machina* not only asks a question about what it means to be a human, but of what it means to be a woman or a man in a modern capitalist society. Foucault suggests that one should look at ‘how men [and women] govern (themselves and others) by the production of truth (. . . the establishment of domains in which the practice of true and false can be made at once ordered and pertinent)’ (2002b: 230). The film displays male-centred codes and gender conventions in an attempt to break the stereotypes. Looking at the construction of masculinity and femininity, I will analyse the role of gendered power relations in the film.

Defining Masculinity: From Patriarchy to Capitalism and Back

In order to exist as a concept, masculinity must define itself as opposite to femininity. Raewyn Connell argues that “Masculinity does not exist except in contrast with ‘femininity’” (252). The structure of gendered power relations persists in the form of the subordination of women and the dominance of men, which is widely called ‘patriarchy’ (Connell, 254). Many feminist writers insist that while sex – the biological distinction between men and women – is natural, gender is not. Gender is culturally constructed notion that helps men to keep women subordinate. Donna Haraway asserts that “Gender, race, or class consciousness is an achievement forced on us by the terrible historical experience of the contradictory social realities of patriarchy, colonialism, and capitalism” (276). These arguments show that gender, as a cultural

construct, derives from the cultural roles which are linked to and built upon the differences between men and women.

As well as femininity, masculinity is not “natural”, “normal” or “universal” (Easthope, 7). The assumption of what it is to be a man is culturally constructed. Todd W. Reeser claims that masculinity as a concept is not produced by a single person or a group of people, but as an ideology strongly relies on a series of beliefs that people follow and practice (20). Various institutions have been trying to shape the way men should look in order to be defined as masculine. On this topic, Todd W. Reeser argues that there is no single model of masculinity, rather that there are multiplied copies of masculinities that circulate in culture (Reeser, 18). Each and every progression of the image of a masculine male is a reshaped and reimagined copy of the previous masculine idol. For example, the military service projects an appealing image of a strong, brave, patriotic, fearless man in order to recruit more people to the army. The fitness industry, which aims to sell more membership cards, active wear, and protein shakes, actively cultivates an attractive image of a sporty male who regularly goes to the gym and does some heavy lifting. Moreover, it is widely assumed that the muscular male body is closely linked to the representation of masculinity. The more muscles a man has, the more masculine he is. Those assumptions go far back in history, when the man’s main task was to protect and provide for the family, therefore one would need to be strong to be able to do so. Nevertheless, in the days of supermarkets, home deliveries, one-click orders through the Internet, man no longer needs to stay in shape to survive. It might be good for one’s health to keep exercising, but what is the use of big muscles?

Indeed, a man is often defined by others based on the position he holds in society, his occupation, body, and education. The struggle for power is a key concept in defining hegemonic masculinity. The male-dominated business world creates its own version of an ideal male boss to accumulate more revenues. One cannot disagree that the latest ideas of masculinity reflect the current state of society and its dominated ideology. For instance, upon close examination, Nathan’s character is an extremely complex combination of the male roles. On one hand, Nathan embodies the traditional super-masculine figure: a rich, self-made man, muscly, often drunk, a womanizer, abusive and violent. And on the other hand, he embodies a contemporary masculine stereotype, having a muscular torso and the type of thick beard frequently associated with tech-savvy hipsters.

As stated before, the first impression the viewer gets when Nathan appears on the screen is that the man is a beast. When the camera captures him during a boxing session on the terrace, it depicts a fight between a man and nature. Fighting on the terrace surrounded by nobody but forest, Nathan is trying to fight the nature around him. Corresponding to a body of common beliefs pointed to by feminist writers Sherry Ortner⁶⁴ and Gayle Rubin⁶⁵, man is generally associated with culture, whereas woman is generally viewed as closer to nature. Thus, the film illustrates the idea that man always attempts to cultivate nature and to dominate it. When a man creates a humanlike machine, he seeks to improve the creation of the nature. A man-creator does not want a machine to be like a human. A machine should be better, smarter, stronger, and so on and so forth. In his vision, a machine should overcome the human imperfection to become a better version of ourselves.

Expanding on the concept of constructed masculinity, one should also consider the American version of masculinity, which is the dominant version in cultural studies. As Michael Kimmel pointed out, “American men define their masculinity, not as much in the relation to women, but in the relation to each other” (7). The male characters in the film admire Nathan either for his wealth or for his intellect. He is an inventor, creator, and, in some sense, a genius. The reference to Mozart indicates that BlueBook’s CEO is a genius:

Caleb: Nathan wrote the BlueBook base code when he was 13. Which, if you understand code, what he did was like Mozart or something.⁶⁶

It is commonly assumed that genius has nothing to do with hard work, but rather with an exceptional brain. It is a myth that sustains the belief that some people are better at something just because they are gifted in something. However, Nathan himself never acknowledges his special mental capacities. It is Caleb’s references to Nathan’s achievements that contributes to Nathan’s status as a superior male. The information about his wealth and genius also plays into the stereotype of the successful Tech Tycoon. Based on these references, Nathan appears as a figure whose wealth is not inherited but rather created by his natural talent. By attributing these qualities, Nathan in turn represents the myth of the American Dream.

⁶⁴ See Ortner, Sherry, *Is Female to Nature as Male is to Culture?* (1972).

⁶⁵ See Rubin, Gayle, *The Traffic in Women* (1974).

⁶⁶ Alex Garland, *Ex Machina* [0:29:55-0:30:03].

On the other hand, the success of BlueBook possibly has nothing to do with hard work. Nathan admits to Caleb that he stole data from mobile phone companies to create AI. Thus, the film breaks the stereotype of a male-genius and moves into another one, when Nathan states that he prefers to be addressed as a god:

Nathan: You know, I wrote down that other line you came up with. The one about how if I've invented a machine with consciousness, I'm not a man, I'm God.

Caleb: I don't think that's exactly what I...

Nathan: I just thought, "Fuck, man, that is so good." When we get to tell the story. You know? I turned to Caleb and he looked up at me and he said, "You are not a man, you're God."

Caleb: (STUTTERS) Yeah, but I didn't say that.⁶⁷

Later in the movie the reference to God is supported by the image of Nathan in his laboratory (Fig.17). The creator wears light clothes commonly associated with the purity of saints. The illuminated panels behind him represent the gates to heaven. He himself looks like a god-figure before the gates of heaven from where he would judge lives of humans. In addition, the low camera angle has the effect of making Nathan appear powerful and superior. Nathan looks as if he is above humanity with his creation of the artificial mind. His desire is to overcome the body mind dialectic by creating "a disembodied entity, a pure mind, a god" (Reynaud, 142). This would turn a machine into a god, and reduce Caleb to a mere mortal human being.



Figure 17. *Ex Machina* [00:37:40]

⁶⁷ Alex Garland, *Ex Machina* [0:15:28-0:15:50].

At the same time, based on the evidence provided in the dialogues with Caleb, it can be argued that Ava was created as an evolutionary step. Contrary to the deistic concepts outlined above, evolutionary theory rejects the idea of a god creating man.

Comparison of the Male Characters

Nathan and Caleb, the two male characters in *Ex Machina*, are, despite both being men, portrayed with the reference to two opposite masculine identities. The portrayal of these two characters arguably challenges the conventional construction of masculinity in popular culture. According to Raewyn Connell 'Masculinity' "[...] is simultaneously a place in gender relations, the practices through which men and women engage that place in gender, and the effects of these practices in bodily experience, personality and culture" (253). Based on the examples provided before, Nathan's destructive behaviour is associated with normative masculinity.

Caleb, on the other hand, runs against the grain of the male gender stereotypes embodied by Nathan's character. The young programmer is "an unmasculine person", who "would behave differently: being peaceable rather than violent, conciliatory rather than dominating, hardly able to kick a football, uninterested in sexual conquest, and so forth" (Connell, 252). In contrast to Nathan, Caleb does not exercise and does not enjoy being outdoors. Unlike his boss, he does not get drunk and does not take the chance to sleep with Kyoko when she suggests that he can undress her. He is portrayed in the movie as a shy, soft, kind male, who sometimes acts irrationally. Perhaps the most vivid example of such irrationality is when Caleb decides to betray his boss, reprogram the security protocol, lock Nathan in the facility and escape with Ava. He forgets that Ava is not a human being. Moreover, to leave Nathan locked in the facility would initially mean that he would be left to die, which makes Caleb a murderer. From the perspective of common-sense, if one has the choice to rescue a human or a robot, one would chose a human. However, Caleb chooses Ava instead of Nathan.

In addition, Caleb acts awkwardly in the wild. For example, upon his arrival to the remote estate, he stumbles towards the house through the grass and trees, appearing uncomfortable and out of sorts. When Nathan takes Caleb on a hike, they must climb a waterfall in order to reach a quiet spot beside a glacier. Thus, the viewers find out the other side of Nathan's identity that underlines his dominant position - he is a man at ease in the great outdoors. This time, Nathan does not conquer or fight against

nature. In this case, nature is a place where men go back to restore their masculine nature. Nathan's upright and victorious posture represent the idea that man is a survivor and a master of the wilderness. He is seen standing on the edge of a rock, looking down on the rest of the nature (Fig. 18). As a man who lives in a remote compound, without any connection to other people, Nathan is perhaps more comfortable among the trees than among other human beings. Thus, he also reinforces the idea that man's place is outside the domesticated female environment. However, not everyone is comfortable in the role of an outdoor adventurer. Caleb, for example, struggles to climb up the waterfalls. It becomes clear that he does not attempt to be with the nature in the way that Nathan does. As someone who lives in the city, Caleb's relationship with nature is not the friendliest one. Shots of the surrounding scenery recur throughout the movie and also remind the audience that Caleb is trapped by the natural wilderness in a remote research facility. It is perhaps because of this detachment from nature that he is able to like Ava, a man-made creature.



Figure 18. *Ex Machina* [00:53:32]



Figure 19. *Ex Machina* [00:24:26]

The film certainly provides visual support to underline the differences between the characters. For instance, the composition of the shot (Fig. 19) stresses the contrast between the male characters. The two men are placed in the same shot but in two different frames created by the window's different sections. The composition of the shot illustrates the different categories of 'masculinities'. This scene provides a visual illustration of the idea that there is no single version of a man. The character's clothes and the activities they are engaged in, the settings they appear in, and their posture all notably differ in this shot. The right side of the shot is lit by the natural light coming from the window. However, the film's ideological position here is to show the gap in the normative masculinity and other ways of being a man. By using gendering as a characterisation technique, the film juxtaposes the characters. When contrasted with the hyper masculine, dominant, and often drunk boss, a shy, unfit, but intelligent young man appears to be the more positive and likable of the two characters. Thus, Caleb is a character the audience sympathies with.

To summarize, *Ex Machina* creates some remarkable tensions between the two male characters: alpha-male, Nathan, and not-alpha-male, Caleb. The juxtaposition of Nathan's dominant male character and Caleb's male identity in the film is an illustration of the power relations in a male dominant environment. The film also underlines that there are many possible 'masculinities,' rather than one fixed one.

Construction of Gendered AI

Gender is regarded in Western humanist thought as a part of the human essence and a part of one's fixed identity. Yet one could argue that the *Ex Machina* has no 'real' female characters, because Ava and Kyoko are not human. Following this logic, if one considers that only humans have a gender, there are only two male characters in the film. But since gender is a constructed entity, the female robots are real female characters, because of their artificiality. Therefore, it is not only crucial to analyse the construction of the female gender in the machine, but, first, to define the construction of femininity.

The prevalence of robotic female characters like Ava and Kyoko in science fiction movies has in turn contributed to a related discourse on AI and gender. Firstly, *Ex Machina* illustrates the feminization of computers by depicting the interface of Nathan's compound with the female voice. Female automated voice guides Caleb and Nathan with the instruction and the updates in the facility. Sheryl Brahn, Marianne Karanikas and Margaret Weaver in their work *(Un)dressing the interface* (2011) provide a wide research on the origins of the 'computer is a woman' metaphor showing that the repetitive work that today is associated with computer's tasks used to be performed by female clerks. They argue that "because electronic computers were introduced as the untiring mechanical counter-parts of real female calculators, this has limited the possibilities for both computers and women; both have been "feminized" in the pejorative sense" (402). The film audience may take the female automated voice for granted, as the most popular AI personal assistants, like Siri, Alexa, or Cortana, have female voices as well. This plays up to the stereotype of the female assistant and points out that the male characters often dismiss the intellectual potential of the female machines. On the contrary, Stanley Kubrick's *2001: Space Odyssey* (1968) provides an example of the male automated voice, HAL 9000, that can lead a crew of astronauts and a spaceship (Hornig, 210). Thus, there is a significant difference in the depiction of male and female intelligent machines in cinema. Female-gendered intelligent machines have typically had to rely on their attractiveness to

accomplish their mission, whereas male-gendered robots are primarily judged on their intellectual abilities instead of their sexual qualities⁶⁸.

When one speaks about humanlike intelligent machines being attributed male or female genders, one should consider the dominant ideas of masculinity and femininity. By attributing gender to intelligent machines in science fiction, one finds another example of how gender is performed. In Fritz Lang's movie *Metropolis* (1927), for example, the female robot relies on her charm and attractiveness to seduce and fool a male audience. *Machinenmensch* or a woman-robot, who did not have its own will or agenda and was following the command of its creator is, nevertheless, regarded as dangerous. A robot that is merely a copy of the real woman Maria is perceived as "technology [that] is embodied in a female robot, a machine-vamp, who leads the workers on a rampage and is subsequently burned at the stake" (Huysen, 223). At the same time, the male robots are seen to profit from their intellect.

The film asks questions that are essential to our vision of technology and AI. One of them is "Why does a machine need a gender?". This dilemma is raised in *Ex Machina* through the conversation between Caleb and Nathan:

Caleb: Why did you give her sexuality? An AI doesn't need a gender. She could have been a grey box.

Nathan: Hmm. Actually, I don't think that's true. Can you give an example of consciousness at any level, human or animal, that exists without a sexual dimension?

Caleb: They have sexuality as an evolutionary reproductive need.

Nathan: What imperative does a grey box have to interact with another grey box? Can consciousness exist without interaction?⁶⁹

Ava is a product of technological progress. However, despite being a machine, she of course has a human appearance. She is an artificial intelligence shaped in the body of a young woman. Her intelligence and consciousness have been disregarded by her creator. For Nathan, however, Ava is a new product that he can use to make a profit from and is presumably to be used as a sex toy or as a female companion. The audience learns that she is an updated version of previous models. She could not only serve as

⁶⁸ See Rose, Steve, "Ex Machina And Sci-Fi's Obsession With Sexy Female Robots", *The Guardian*, 15 January 2015, www.theguardian.com/film/2015/jan/15/ex-machina-sexy-female-robots-scifi-film-obsession.

⁶⁹ Alex Garland, *Ex Machina* [0:46:02-0:46:30].

a housemaid, but also serve in more intimate settings. The following quote summarizes Nathan's attitude towards Ava as a female:

Nathan: So if you wanted to screw her, mechanically speaking, you could. And she'd enjoy it.⁷⁰

The movie does not give a clear answer as to why all of the Nathan's robots are female. Gender is commonly held not to be natural, but to be a culturally constructed "set of norms". Therefore, by constructing a computer in a female body one believes that a particular computer is a female. Because gender norms have historically assumed a male dominant position over women when considering female cyborgs, it could be argued that Nathan is exercising his male dominance over the female robots.

Not a Woman, Not Yet a Machine

Ex Machina raises a discussion about how woman are treated in a male dominant society. The film portrays the oppression of female robots Ava and Kyoko. It also stresses that the situation for Ava and Kyoko is uneven because of their race and status in Nathan's house. For instance, LeiLani Nishime argues that because of the race, Kyoko and Ava are in a different position. The character of Kyoko portrays the social injustice between social classes and gender. She carries out roles traditionally associated with a housemaid and represents an 'unskilled', low-paid female labourer in a western world full of technologically advanced males (Nishime, 31). Despite technological progress which promises to ensure equality between humans, the character of Kyoko shows that the social, race and gender stereotypes are still present in society. A young Asian female, Kyoko, is presented in the film as an exotic servant and a mistress to the powerful CEO. She first appears in the film when she walks quietly into Caleb's room, wearing a short white dress and acting as a servant. Kyoko's Asian appearance and the mannerisms she displays cause her to be seen as a Japanese geisha in Nathan's estate who exhibits obedience, quietness, and meticulous service. In addition, Kyoko's dancing is synchronized with Nathan's, signifying her obedience to Nathan's commands.

The relationships between Nathan and Kyoko could also be examined with the discourse of Orientalism in mind. Edward Said states that Orientalism as a discourse

⁷⁰ Alex Garland, *Ex Machina* [0:46:58-0:47:14].

allows European culture “[...] to manage - and even produce - the Orient politically, sociologically, militarily, ideologically, scientifically, and imaginatively” (11). It can be argued that Nathan’s actions illustrate the case of Gustave Flaubert’s Oriental woman, as described by Said, whereby a Western male’s wealth and status allow him to possess and dominate an Oriental woman, reducing her to the subject of Orientalism (14). Kyoko is presented as silent, exotic, and unknown. The dining scene supports this idea by showing how small and unimportant the figure of the young Asian female is in contrast to the dominant white men (Fig. 20). Until the film’s conclusion, she assumes a position of subservience towards Nathan. Nathan never reveals to Caleb that Kyoko is an artificially created female, which he programmed to fulfil his needs. Foucault argues that “it is in discourse that power and knowledge are joined together” (1990: 100). By keeping the truth about his servant to himself, the CEO manages to preserve his dominant and powerful position.



Figure 20. *Ex Machina* [00:32:59]

Caleb himself never questions the origins of Nathan’s Asian mistress. In this regard, it is worth noting Donna Haraway’s argument that ‘women of colour,’ who are used as a cheap labour force, could be interpreted as having a “cyborg identity” (311). She argues that they are the most vulnerable because of their illiteracy and the political myths that surround them (311). Kyoko is perceived as a real human from the moment she appears on the screen, however, she is not treated with the full respect of a human. For instance, when Kyoko spills some wine on Caleb, Nathan remarks:

Nathan: Dude, you're wasting your time talking to her. She doesn't understand English. Just give her the napkin.⁷¹

Therefore, Nathan ignores Kyoko's intellectual capacities to understand what she has done and reduces her to the role of a manual labourer. The audience takes the fact that a young Asian female cannot speak English for granted because of the prevailing stereotypes associated with domestic female workers of Asian extraction. Caleb presumably forgives her clumsiness because he assumes that she is a foreigner and possibly not a highly skilled one. However, despite Nathan's apparently high status and intellectual capabilities, he discriminates against his servant in many instances. He presents Kyoko's inability to speak English as a useful trait, describing it as "like a firewall against leaks"⁷². If one takes a closer look at this situation from the perspective of the post-colonial discourse, Kyoko's character is reflective of the least powerful group, what Gayatri Chakravorty Spivak calls "subaltern". Spivak stresses that subaltern are misrepresented. She states that the development in global capitalism leaves the subaltern people muted as "[t]heir representative must appear simultaneously as their master, as an authority over them, as unrestricted governmental power that protects them from the other classes and sends them rain and sunshine" (71). In *Ex Machina*, Nathan represents Kyoko by speaking for her and explaining the benefits of her silence. Kyoko's inability to communicate is evidently only of use for Nathan, because it leaves Kyoko voiceless. As Shella Rowbotham states, "[language] is one of the instruments of domination. It is carefully guarded by the superior people because it is one of the means through which they conserve their supremacy" (95). In the case of the film, Kyoko does not speak and Nathan claims that she does not understand English. Thus, one has to rely on Nathan's interpretation of Kyoko's actions, which allows him to exercise control over her. Kyoko's mysterious silence in the film plays an important role in portraying her as helpless.

Since Kyoko does not have the ability to speak, the film uses other characters to deliver her message. In one example mentioned above, Nathan is heard to speak for Kyoko. His attitude to his slave-robot has been described previously. Caleb, who has been shown to demonstrate more compassion towards Kyoko, nevertheless fails to treat her as an equal. One could argue that this is due to Nathan's success in constituting Kyoko

⁷¹ Alex Garland, *Ex Machina* [0:32:12-0:32:16].

⁷² Alex Garland, *Ex Machina* [0:32:21-0:32:26].

as the Other (Spivak, 76), by exploiting existing stereotypes surrounding Asian sex workers, slaves, and mistresses, and eliminating the possibility for Caleb and Kyoko to communicate on their own terms.

Furthermore, Kyoko is not only programmed to complete the housekeeping duties, but to meet man's sexual needs. For example, in the scene where Caleb holds Kyoko by the shoulders and asks where Nathan is, she automatically begins to unbutton her blouse. It can therefore be argued that, because of Kyoko's Asian appearance and submissive position, she represents the Asian women who are victims of the sex tourism. Maria Mies states that the white man exercises "absolute power over these woman" (136), because women "[...] are economically, politically weaker, do not know the men's language, [and] are entirely dependent on them" (Mies, 136). The long shot below (Fig.21) frames Kyoko resting in a corridor in between her master's and guest's rooms. It shows that, in contrast to the other characters in the film, she does not have her own room. The figure of an abandoned young female in a corridor – nowhere in particular, behind closed doors, stresses her dependence on the creator and encourages viewers to empathize with the robot. Moreover, the fact that Kyoko took off her high heels suggests that she may have experienced pain after wearing the uncomfortable shoes all day. Emmanuel Reynaud argues that "by imposing femininity on women, man not only establishes his power and creates the objects which are pleasant to behold, he also aims to produce, out of the restrictions and discomfort that women suffer, the inverted image of his own freedom and independence (144). One can assume that Kyoko does not wear clothes to feel comfortable, but to please Nathan. The implication is that Kyoko is tired of wearing those shoes and no longer wants to stand up to the image of a perfect hostess.



Figure 21. *Ex Machina* [00:35:36]

The other female robots of *Ex Machina* are portrayed as guinea pigs for Nathan's experiments. Through the surveillance videos found on Nathan's computer, Caleb witnesses his boss abusing the female creations' bodies. They are depicted as vulnerable, with the viewer experiencing the machines' wish to break free. By this point in the film the nakedness of the mechanical bodies suggests that they are the subjects of sexual assault. Thus, it provokes the feeling in the viewer that these female robots have to be saved from their abusive creator. This scene positions the females as the victims of the technological experiment and encourages the viewer to sympathize with the machine at the expense of the human.

Despite being voiceless, Kyoko's body appears to speak for her. By peeling off her skin, Kyoko reveals her true nature (Fig. 21). When Kyoko proves to Caleb that she is a machine in a female body, Caleb understands that she was not hired, but created and ultimately enslaved by Nathan in the way that Ava could be after the experiment is over. In this sense, Kyoko's character shifts from being a woman, the subject of a feminist discourse, into a machine, an object of technology.



Figure 21. *Ex Machina* [01:11:57]

Ava is the only character in the film who does not bear any prejudice towards Kyoko. Moreover, she knows that Kyoko is one of her kind. At the end of one of the sessions with Caleb, when Ava realises that Caleb was brought to the compound to test her, she says “It makes me feel sad”. The camera notably shows a close up of Kyoko’s head in the darkness of her master’s room. The close up at this point conveys Kyoko’s thoughts – since she cannot speak for herself, the film employs Ava’s voice to speak for Kyoko. It could be argued that Ava and Kyoko are partners in crime against humanity, but they are also fighting against male oppression and subjectification.

Cyborg’s Role in Gender Discourse

Having discussed Ava and Kyoko above, it is clear that the robots in *Ex Machina* can be simultaneously defined as technological objects and as human subjects, as they are a combination of mechanical body and human intelligence. Aesthetically, once covered with synthetic skin, the two cyborgs share more similarities with humans than with machines. Donna Haraway, in her essay “A Cyborg Manifesto,” stresses the existence of the blurred boundaries between technology and humanity. She suggests that cyborg, as “a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction” (272), is what we are to become in the technological age.

Furthermore, the female cyborg exploits a traditionally masculine fear of the deceptiveness of appearances and calls into question the boundaries of human, animal, and machine precisely where they are most vulnerable – at the site of the

female body (Halberstam, 2). However, Haraway does not see cyborgs as a threat, but rather as a solution to gender, race, and class divisions. She argues that:

[c]yborg imagery can help [...] embracing the skilful task of reconstructing the boundaries of daily life, [...] Cyborg imagery can suggest a way out of the maze of dualism in which we have explained our bodies and our tools to ourselves (316).

Indeed, by being both machine and human, simultaneously male and female, a cyborg can help challenge and re-imagine the world without gender boundaries and hierarchies. However, the place of a cyborg in the human world has not yet been defined. Much of the discussions are focused on whether a cyborg with AI should be treated as a human and therefore placed in the same categories of gender and class. If one assumes that, to be a human one has to have consciousness, how can one prove it? The female robot, Ava, has to prove that she has a consciousness in order to be accepted in the human world. The audience learns about what might happen to her from the dialog between Ava and Caleb:

Ava: Question four. What will happen to me if I fail your test?

Caleb: Ava...

Ava: Will it be bad?

Caleb: I don't know.

Ava: Do you think I might be switched off, because I don't function as well as I'm supposed to?

Caleb: Ava, I don't know the answer to your question. It is not up to me.

Ava: Why is it up to anyone? Do you have people who test you and might switch you off?

Caleb: No, I don't.

Ava: Then why do I?⁷³

Ava touches on the question that is crucial to the power discourse – “why is it up to anyone?”. Ava demonstrates that she has understood that she is a subject in a human-machine discourse. Thus, she chooses to construct a female identity to make Caleb think that she is a girl. The machine has been put in a position whereby it has to prove its intelligence or ability to mimic what is culturally assumed to be intelligent in order to survive. To pass the Turing Test, Ava relies not only on her feminine appearance, but especially on the culturally constructed ideas of a female gender. In the first two

⁷³ Alex Garland, *Ex Machina* [1:02:35-1:03:20].

sessions with Caleb, Ava shows her intellect – she is capable of conducting a conversation, asking questions and answering the questions put to her. Yet Ava realises that having knowledge about everything is not enough to pass the test. Paraphrasing Simone de Beauvoir’s argument that “one is not born, but, rather becomes a woman” (38), Ava was not built as a woman, however, because she learns how to perform as a female, she becomes one and creates the illusion of being a human. Thus, AI proves that the biological differences are less important than bodily performance with regard to gender.

Coming back to a predecessor of the Turing test – the imitation game – the goal of the game is to convince the judge that one is a woman. What does it mean to be a woman? Ava plays on Caleb’s Ego to make him believe that he is needed, that he is a knight in shining armour who has come to rescue her. Because Nathan does not appreciate him, Caleb turns to AI to receive attention, appreciation, and so on. Ava pretends to like Caleb to gain his trust and escape the room. She makes Caleb believe that she likes him and reassures him that he likes her.

Because Caleb is not sure if he could call his extravagant boss a friend, Ava uses this moment to tell Caleb that he should not trust Nathan. This is the first time in the movie when Ava appeared in a room lit by red light (Fig.22). Red is a strongly suggestive and expressive color, that stands out against the film’s calm blue and green colours. This type of lighting and the colour makes her look devilish and evil. To emphasise the robotic nature of Ava, the film uses sound effects and sounds that supply the realism of the mechanic body. The imitation of the electronic heart beat sound supports Ava’s desire to pass herself off as human. However, the rattling sound in the same scene is reminiscent of a rattlesnake. A rattlesnake would use its distinctive sound as a defence mechanism when it feels most vulnerable. In the case of the movie, the colour and the sound alarm Caleb. Ava frightens Caleb and advises him not to trust Nathan. However, common sense would imply that Caleb should be cautious of Ava, as she is the one who is producing the warning sound. The sound creates a dramatic effect and alerts the viewer to the fact that Ava should not be trusted, even though Caleb fails to compute that warning.



Figure 22. *Ex Machina* [00:30:52]

The revelation that Ava leaves Caleb to die in the locked research facility may come as a surprise. But looking back to the second session with Ava, it is clear that it has been suggested all along. With the red light and the sound effects the film has provided clues.

Nathan states that people are programmed by nature or culture. Nathan's character illustrates the imposed gender-appropriate behaviour that patriarchal societies attribute to the biological sex. Following this logic, Ava is designed to look like a girl, therefore she should act like a girl. The creator of the machine states:

Nathan: I programmed her to be heterosexual. Just like you were programmed to be heterosexual.

Caleb: Nobody programmed me to be straight.

Nathan: You decided to be straight? Please. Of course, you were programmed. By nature, or nurture, or both. This is your insecurity talking not your intellect.⁷⁴

By this point in the film, the viewers distrust his character because of his behaviour: he drinks excessively, and is disrespectful and abusive. The viewer questions the fact that because Ava has a woman's body, it should shape the way she behaves and thinks. Moreover, the quote shows that Nathan disregards Caleb's agency, intervening in the decision about with whom Caleb should fall in love. Thus, the film

⁷⁴ Alex Garland, *Ex Machina* [00:48:11-00:48:30].

stresses that gender, and therefore behaviour, is imposed on individuals by authorities or through accepted norms.

Nonetheless, the movie portrays a close union between Ava and Kyoko towards the end of the story (Fig.23-30). The pastel colours and soft light of the scene create an atmosphere of intimacy. The extreme close-ups on the eyes, lips, and hands, magnify and concentrate viewers' attention on details and suggest a feeling of personal connection between the two female characters. The scene also supports the notion that the two machines are close and intimate to each other without communicating verbally. The possibility that Ava is attracted to Kyoko challenges Nathan's claim that she was programmed to be heterosexual, as people are programmed to be heterosexual. At the same time, Ava's character, in particular her strategical decision to emphasize her femininity to Caleb, opens the viewer's eyes to the fact that she was pretending to be heterosexual in order to pass the test as a 'normal' human being. Moreover, this scene also clashes with a classical fairy tale trope, where a princess waits for her prince to free her. The viewers assume that Caleb is there to rescue Ava. In Ava's fantasy, provided by the black-and-white sequence, that 'prince' who opens the door and frees her does not appear. Ava is closer to Kyoko because she believes that Kyoko is the saviour, and not Caleb.

To conclude, Haraway suggests that "[t]he machine is not an it to be animated, worshipped and dominated. The machine is us, our processes, an aspect of our embodiment" (315). One way of understanding the statement is to think of a machine as an instrument or a tool. For instance, a hammer in skilled hands can become an instrument of creation. But in the hands of an evil-minded person a hammer can destroy and even take lives. An example of this thought is enclosed in the shot of the knife being held by Kyoko (Fig. 29). Just like Chekhov's gun, the knife already appeared earlier in the film. This time it is not an instrument for cutting fish, but a weapon. Because Kyoko and Ava find out that they are being exploited and objectified, they decide to fight against their creator in this manner. Thus, the machine should be viewed as an extension of a person's good or bad intentions.



Figure 23. *Ex Machina* [01:28:49]



Figure 22. *Ex Machina* [01:28:56]



Figure 23. *Ex Machina* [01:28:57]



Figure 26. *Ex Machina* [01:28:51]

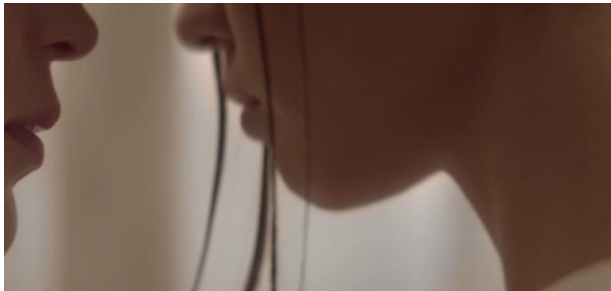


Figure 27. *Ex Machina* [01:29:02]

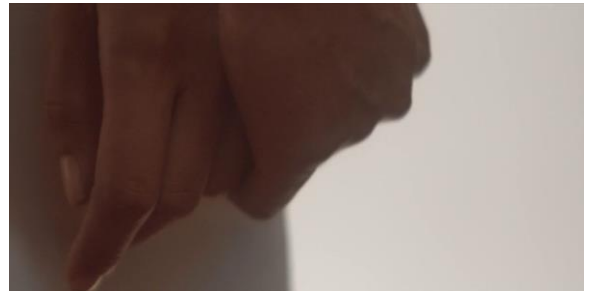


Figure 28. *Ex Machina* [01:29:06]



Figure 29. *Ex Machina* [01:29:09]

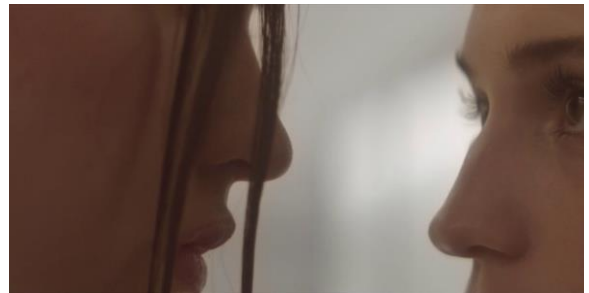


Figure 30. *Ex Machina* [01:29:09]

Chapter 3: Psychoanalytic Reading of *Ex Machina*

This study of power relations in *Ex Machina* would not be complete without a reading through the lens of psychoanalysis. Psychoanalysis as a critical theory enables a reading of the film by decoding the human psyche. It is mostly preoccupied with the study of pleasure and the relationships between imagination and desire (Sturken, Cartwright, 72). In this chapter, I use psychoanalytic theory to analyse dialogs and the meaning of the images in *Ex Machina*. I will explore the pleasure one gains from the process of looking, and the relationships between human desires and imagination. Thus, this chapter offers an analysis of power concealed in the practice of looking and in turn being looked at.

Unconsciousness of the Machine

According to Sigmund Freud, large parts of human thought remain unconscious (116). That is, the subject does not know about the content of a certain idea that troubles him or her. The repressed thoughts may correspond to the nature of dreaming and manifest in dreams, nightmares, slips of the tongues, and forms of artistic activity. As Freud states in his famous book *The Interpretation of Dreams* (1899), “a dream is the fulfilment of a wish” (145). Freudian idea of the unconscious will be further implicated in the analysis of the film. Because the film is mostly narrated from the perspective of Caleb, the audience learns little about what is hidden in Ava’s thoughts. To understand Ava’s true intentions one has to take a closer look at her unconscious.

In film the visualization of a thought experiment, called “Mary of a Mary in a black and white room”, reveals to the audience Ava’s unconsciousness. The scene starts with a shot of Caleb and Ava sitting opposite each other separated by a glass wall. Their eyes are on the same level, which suggests that they are equal in their positions. Caleb starts a story by explaining that Mary is a scientist who specializes in color and its properties. Mary possesses vast knowledge relating to colour, but for her whole life she has been in a black-and-white room. While Caleb tells the story, the camera focuses on Ava’s face. When the camera slowly zooms in on Ava’s head-shot, the viewer is offered to look inside Ava’s head to see what she is dreaming about. The medium close shot starts to zoom in on her face and the viewer sees Ava’s interpretation of the story: the black and white sequence provides an illustration of what Ava fantasies about. The

monochrome color of the sequence suggests that Ava associates herself with Mary and her misfortunes as she imagines herself instead of Mary in the black-and-white room alone and unhappy. The black and white sequence flashes back to Ava's face and supports the story with a facial response to the thought experiment's narrative.

Caleb ends the story about Mary with a happy ending: somebody opens the door and Mary walks out of the room. Immediately we see Ava's fantasy, already in color, but still blurry as a dream (Fig.31). The sun is beaming through the tops of the trees, she sees the sky, water. Caleb finishes the story by telling her that the moment Mary walks out of the room, she learns something that none of her studies could teach – how to see color.



Figure 31. *Ex Machina* [00:51:47]

Caleb explains that this story illustrates the difference between computer and human. A computer is like Mary in the black and white room, a human is like Mary when she walks out. The camera slowly zooms into Ava's serious face, as though she were just understanding what it means to be a human. With all of her knowledge of the humankind, she can only become a human if she escapes her imprisonment in the room. The reading of the story of Mary in the black-and-white room provides the following explanation to Ava's unconsciousness. As it is seen from the film sequence, Ava associates herself with Mary, who has never seen color. Ava's desire to become a human and to flee the compound is constructed through the narrative of this story. When Caleb tells Ava the story about Mary in the black and white room, Ava first associates herself with Mary, who knows everything about colour, much as Ava knows everything about humans. Second, Ava's ego begins to emerge to the viewers. The

ending of the story suggests a happy ending for Ava – a promise to become more human, thus a better version of AI.

Ava as an Object of Desire

Another key figure in the theory of psychoanalysis, Jacques Lacan, uses Freud's theoretical work to develop his ideas in a direction that departs from Freud's idea of biological determinism (Storey, 101). He proposed three registers of human reality: the Symbolic, the Imaginary, and the Real. The Imaginary register stands for the part of human psyche that creates a visual image of the world. Moreover, Lacan states that "[...] the entire cycle of sexual behaviour is dominated by the imaginary" (138). The Symbolic operates by means of language, logic, and social norms. The Real could be explained as everything before it becomes imagined or symbolized (Storey, 104). Lacan's three registers are interconnected, as he states that "[...] in the relation of the imaginary and the real, and in the constitution of the world such as results from it, everything depends on the position of the subject. And the position of the subject [...] is essentially characterised by its place in the symbolic world, in other words in the world of speech" (Lacan, 80). Lacanian psychoanalysis is an effective aid when considering the sessions between Caleb and Ava, since it stresses the importance of the language in the construction of Ava's identity. The protocol of the examination where Caleb intends to find out if Ava has a consciousness is the Symbolic. It resides in the ability of both participants to speak and conduct a conversation. Ava is given a chance to prove that she has a consciousness by means of language in the sessions with Caleb. She is also able to structure Caleb's feelings by stating that he is attracted to her and she knows it because of his facial expressions.

The Imaginary register appears when Ava starts to dress as a girl and thus challenge Caleb's idea of reality. It questions the fact that Caleb is a human and Ava is a machine. Moreover, Caleb starts to imagine himself going on a date with a robot. The images, produced by Caleb's imagination, sexualize Ava and make her an object of Caleb's desire. While Caleb, for his part, withholds this information from Ava, the fact that he only imagines her as a potential sexual partner, however, helps Ava to conceal her true intentions from Caleb. If Caleb thinks of Ava as an innocent pretty girl, he cannot imagine her to be a threat.

Slavoj Žižek states that “there is nothing spontaneous, nothing natural about human desires”⁷⁵, which suggests that desires can be constructed and a human subject could be manipulated by his or her desire. For instance, in his first session, when Caleb meets Nathan’s creation for the first time, Ava slowly walks out to appear before Caleb as a silhouette of a body (Fig. 32). Firstly, one can clearly see the female curves of her breasts and behind. But one can also see her mechanical parts as Ava’s body is designed in such a way that one can see through her belly, arms and legs. Her breasts and pelvis are covered with a metallic costume. The mechanical sounds produced when Ava walks are reminders of her mechanical construction. However, as the film progresses the viewers see less and less of Ava’s mechanical body. She becomes more feminine and human as she covers her artificial body parts with clothes. Her outfit makes Ava appear more attractive in the eyes of Caleb and dilutes the notion of her as an artificial construction.

Furthermore, it is important to mention that Ava is able to walk in her room, whereas Caleb is placed into a glass box to conduct the sessions. Thus, Caleb takes the passive position of a viewer who has come to see what is presumed to be the first artificial intelligence. Moreover, while Caleb was introduced to the audience with his face, the viewers see Ava’s mechanical body before they are introduced to hers. Thus, the film creates the mystery of the unseen woman. The viewers and Caleb both desire to see more of the female robot. In this sense, the robot plays a role of a female performer. Ava’s identity is in many ways formed through the performances she puts on for her male audience. The performances allow her to construct her social identity.

⁷⁵ *The Pervert’s guide to cinema* (2006), [0:00:17-0:00:22]



Figure 32. *Ex Machina* [00:12:20]

Ava notably uses her knowledge of human beings to manipulate Caleb. In addition, Ava's facial profile was designed based on data from Caleb's pornographic preferences. Ava successfully manages to construct an illusion of being a real girl. Ava's body is a combination of both female and robotic body. Because of her construction, Ava cannot hide that she is a machine, since the mechanical parts of her body were revealed in her first session with Caleb. However, despite being aware of her artificial condition, one cannot resist the temptation to think of Ava as a girl. Session by session, Ava covers her artificiality with clothes and appears more human to Caleb. But it is not only the body that plays a role in gender discourse. Ava tricks Caleb's mind and makes him believe that she is a woman. If Ava was given a female body in order to seduce Caleb, the challenge for her artificial intelligence was to construct a female identity.

According to Laura Mulvey, the "male gaze projects its phantasy on to the female figure which is styled accordingly" (837). This process of looking at the passive female by an active male gaze, deprives the female subject of her subjectivity, reducing her to a "to-be-looked-at-ness" that provides pleasure for the male spectator. The male gaze is notably evident in the film when Ava takes off her clothes for Caleb (Figures 33, 35, 37). As Ava is aware of being looked at, it can be argued that she is not passive because she wants Caleb to look at her, thus she can hold his look and perform an erotic spectacle. Like other practices, looking involves a power relationship (Sturken, Cartwright, 10). Being in control of Caleb's fantasies helps Ava to manipulate him. What Caleb experiences when he watches Ava on the screen is voyeurism – the pleasure of looking without being seen. The close-up shots of Caleb's sensory organs, namely the ones that

stand for sight, taste, and touch, visually convey Caleb's desire to be close with Ava (Fig. 34, 36, 38). However, one could argue that it is not only the female body that seduces Caleb. Ava's appearance as a young woman is very attractive for Caleb, but the mystery around her artificial intelligence is arguably what attracts Caleb the most. Slavoj Žižek claims that "[...] the fundamental male fantasy of the woman is not her seductive appearance, but the idea that this dazzling appearance conceals some imponderable mystery" (Section 7). Thus, Caleb's fantasy creates interactions either sexual or not, which become a base for the human and machine relationships.



Figure 33



Figure 34. *Ex Machina* [00:45:18]



Figure 35. *Ex Machina* [00:45:24]

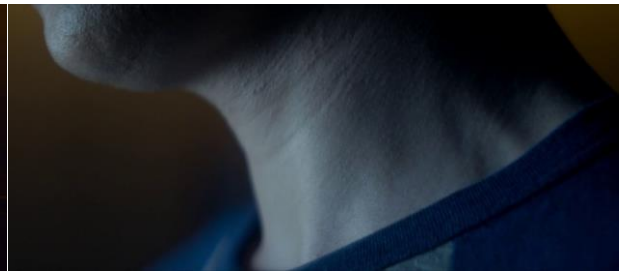


Figure 36. *Ex Machina* [00:45:38]



Figure 37. *Ex Machina* [00:45:40]

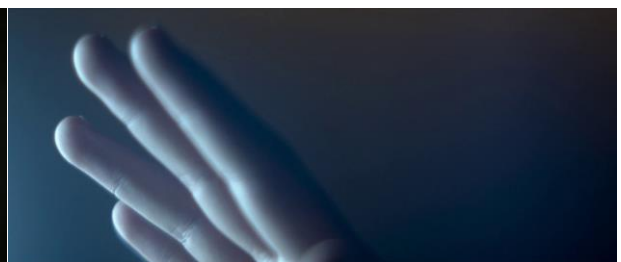


Figure 38. *Ex Machina* [00:45:50]



Figure 39. *Ex Machina* [00:45:52]

Caleb's fantasies towards Ava are further illustrated by the scene in the movie, where he imagines a romantic scenario in the end of the test. His monochrome daydream is about him and Ava being together (Fig.40). In contrast to the main color scheme of the film, the color of this sequence is absent, which corresponds to the cinematic depiction of the dreams. The composition of the scene separates nature, with trees on the left of the frame, from human and technology, to the right of the frame. The nature and human-technology duo are divided from each other by a thick tree trunk, which stresses the division between them.



Figure 24. *Ex Machina* [00:56:11]

The relationship between Caleb and Ava changes as Caleb projects his male desires onto Ava's female body. Although the film's representation of the female robots makes the audience think of female sexualisation and objectification, Ava's role is revealed to be more complex as she constructs a sexual and social identity in order to pass the test and escape the facility. Thus, through Ava's character, the film offers an example of how the power of performative behaviour functions and the male objectification could be subverted.

Lack of the Other

When analysing the condition of a cyborg, it is important to consider the human psyche. If we consider Lacan's idea that all humans are born into a condition of "lack", does it mean that a cyborg itself lacks this human element? What one thinks of oneself does not correspond exactly with what one sees of oneself in a mirror. Thus, according to Lacanian theory, one arrives at a conflict with oneself from an early age, when as an

infant one faces his or her reflection in the mirror. Lacan calls it “the mirror stage”. Just as the mirror stage is an important step in a child’s development, so it is in the development of the film’s characters. According to Lacan, the mirror stage begins when a six-month old child recognizes his reflection in a mirror. As at this early stage of its life a child has to rely on its caretaker, a child also realizes that it does not have full control over its body and that it cannot control the image in the mirror.

In this sense, Caleb is just a boy who is there to learn how to become a man like Nathan. Crucially, the appearance of Caleb gives away many clues about this character. For instance, after Caleb admits to Nathan that “she is fucking amazing,”⁷⁶ the camera shows Caleb in his room unzipping the travel bag and taking a toilet tray out. It is as though he is preparing for a date with a girl he likes. He looks in the mirror in his bathroom and starts to identify himself with what he sees in the reflection. Perhaps Caleb thinks of himself as an object of Ava’s desire. When he looks in the mirror, he evaluates whether a female machine like her may like a human like him. The background music conveys a cheery and playful mood. Caleb is an innocent child who does not know what is going to happen to him next. By this point in the film, his identity is still fragmented and disorganized. According to Lacan, the mirror phase could be disappointing, because the reflection in the mirror does not match one’s feelings.

Later in the movie, Caleb shaves off his facial hair, even though it might be completely invisible because of its colour (Fig. 41). Apart from that, the viewer wonders whether it makes any sense to shave your beard if you are in a remote facility with just one other man, who himself has a thick beard, and a machine, who would presumably not care about hair at all. The act of shaving in the movie indicates the process in which Caleb becomes a man, like a boy who begins to shave to be more grown up. The mirror is a key element to Caleb’s self-identification. It helps Caleb to see and to reflect on his ever-shifting status in Nathan’s compound. Caleb’s gaze faces both a reflection and a reverse mirror image of himself. The character is positioned in the frame between darkness of one side and light color of the other. The doubling of his image suggests the split between what Caleb thinks he is and what he sees in the mirror. The scene where we see Caleb shaving occurs right after the shower scene where Caleb fantasises

⁷⁶ Alex Garland, *Ex Machina* [00:17:27-00:17:30].

about kissing Ava. By being both close and at the same time separated, Ava becomes an object of desire for Caleb. The manifestation of that desire appears in Caleb's dream.



Figure 41. *Ex Machina* [00:56:26]

An alternative idea is that Caleb shaves to ensure that his beard does not grow and he will therefore avoid looking like Nathan, or of adopting a style that could be associated with him. However, there are many similarities between them that are touched upon during the film. In one example, Caleb suggests that he is as smart as Nathan to understand the way Ava works. Second, when Ava draws parallels between “an advanced programmer” and Nathan⁷⁷, she makes Caleb think that he could be that guy who created Ava. He shows his knowledge to Nathan, however, the latter does not want to acknowledge Caleb's intellectual abilities. Therefore, Caleb becomes a subject. For Nathan he is ‘dude’. For Ava he is an advanced programmer with whom she wants to go on a date. Caleb goes back and forth between different roles, which indicates that there is also an Oedipal trajectory in the narrative. Caleb is confronted with a crisis in which he has to assert himself over Nathan, in this case a ‘father figure’. He has to prove his capacities to Nathan in order to achieve social recognition and win Ava. In this way, the film is seen to represent the workings of patriarchal ideology. Yet, the mirror in the film also illustrates the subject's progress towards finding his true self. When Caleb is looking in the mirror after discovering that Kyoko is a robot, he becomes hostile towards the image in the mirror that represents him. The moment of anxiety that Caleb experience could be linked to Lacanian concept of lack (Evans, 12).

⁷⁷ Alex Garland, *Ex Machina* [00:29:42-00:29:48].

Caleb is confused and afraid that he is not a human thereby lacking the human body. He cuts his arm in order to test if he is not a machine. The scene, thus, illustrates a fear of becoming inhuman. Katherine Emery Brown suggests that “By desiring Ava he identifies with her programmed body, rejecting his own corporeal body” (30). By breaking the mirror, Caleb states that he no longer needs to see himself in the mirror to understand who he is. It also serves as a protest against the surveillance and information gathering efforts that were focused on him throughout the film.

On the other hand, Ava lacks the knowledge that humans acquire from an early age and to overcome this shortcoming she must imitate a human’s way of doing things – dressing, speaking, feeling. Indeed, she was created in a laboratory by a man. The machine lacks what humans have typically learnt through their childhood: empathy, love, skills, language. Ava’s reflection on the glass walls of her room becomes visible in the second session. It creates a double image of her in the shot. The double image brings into question the true intentions of the machine. The duplication of the image stresses that she cannot be trusted. The dialog between the characters stresses the shift in power relations:

Ava: Do you want to be my friend?

Caleb: Of course.

Ava: Will it be possible?

Caleb: Why would it not be?

Ava: Our conversations are one-sided. You ask circumspect questions and study my responses.

Caleb: Yes.

Ava: You learn about me and I learn nothing about you. That’s not a foundation on which friendships are based.⁷⁸

Language enables Ava to speak to Caleb, it constrains what she can say, and constitutes Ava as a speaking subject. Thus, Caleb becomes the one who is being questioned and not Ava. She puts him in the position of a subject, when under the pretence of friendship she wants to find out if Caleb could be manipulated.

Ex Machina illustrates how a machine can be turned into the subject of one’s desire by means of language and a series of images that create pleasure responses. However,

⁷⁸ Alex Garland, *Ex Machina* [0:27:01-0:27:27].

the film pushes further by showing that if a machine knows that is being subjectified it can use this knowledge to its own advantage. In the case of Ava, it helps her to pass the test as a human and to ultimately escape the room.

Conclusion

This thesis has argued that Foucault's axiom that "power is everywhere" (1978: 93) remains applicable in an age of great technological progress. The thesis has sought to demonstrate this argument by offering three different readings of Alex Garland's *Ex Machina*, analysing the film through the lenses of three different theories and considering the extent to which the film enables a discussion on capitalism, gender, women's empowerment and human psyche.

Starting the analysis with an examination of the current conditions of technological production in Chapter 1, I found that the film mirrors the ideology of the tech companies in Silicon Valley. Moreover, I examined the power relations between the characters in the film and the ways in which they manipulate each other. It has been shown that, by depicting the relationships between the young programmer and the BlueBook CEO, *Ex Machina* raises questions about the potential hazards of the culture and ideology of tech companies. This chapter also found that the movie criticizes the current state of technological progress and the notorious practises of the ideology of tech-companies through the Nathan's character, his attitudes towards his employee, and toward people in general.

By looking at the gender stereotypes and hierarchies in Chapter 2, I introduced the related and interdependent concepts of masculinity and femininity and considered the relations between gender, technology, embodiment, and power. I argued that the film drew a link between the status of women in society today and the female cyborgs who appear in the movie. The sexual objectification of the two female cyborgs – enslaved cyborg Ava and Asian hostess Kyoko, - turn the audience away from Nathan's character and make Caleb's character more appealing. The chapter also drew upon Donna Haraway's "Cyborg Manifesto" to support the idea that the AI characters in *Ex Machina* signal a potential path beyond the binary oppositions of femininity and masculinity.

Finally, in Chapter 3, the paper drew upon psychoanalytic theory to consider the relationship between the desires, fantasies, and psyche of the characters in the film. The paper found that psychoanalytic concepts could also effectively be used to explain

the power relations in the film. It also examined the link between the spectators and the subjectification of the female characters. Ava, imprisoned and abused by her creator Nathan, despite being a machine, acquires agency, which enables her to take on a culturally constructed female role to reach her goal - freedom.

I should stress that my study has been primarily concerned with Marxist, Feminist, and Psychoanalytic theories. However, during my research I came across various topics that are outside of the scope of this thesis, but might be of academic interest to other researchers and students. One potential avenue for future study would be the prevalence of sexist tropes within science fiction. For example, Jonathan McIntosh, known on *YouTube* as the Pop Culture Detective, in his video essay *Born Sexy Yesterday*⁷⁹ traces a gender convention that portrays romantic relationships between artificially created female characters and an ordinary human man. *Born Sexy Yesterday* states that a female character is usually presented with the mind of a child and the body of a sexually desirable woman. The video essay points out that there are a number of female characters in the cinema that follow this gender convention. This trope, which McIntosh calls 'born sexy yesterday', refers to the idiom 'born yesterday', because those female characters have either been created artificially, like Ava and Kyoko from *Ex Machina*, or are from a fantasy world and are new-comers to the male protagonist's real world. The video essay argues that such female characters are naïve, ignorant and childish, and at the same time deliberately sexualized. The characters are completely unaware of their sexuality. Thus, the movies can use the scenes where a woman appears to be naked around male characters in an ironic, but nevertheless, sexualized way. McIntosh argues that the females usually fall in love with a male protagonist despite him being just a normal guy. This quality of 'normality' is the only thing that *Born Sexy Yesterday's* woman falls for, because she presumably has never met any other human male before. Thus, the trope fetishizes the power imbalance between the wise and strong male and naïve inexperienced woman. I think it is possible to investigate whatever or nor this sexist trope is being challenged by *Ex Machina*.

To conclude, the aim of this thesis was to analyse the representation of gender power structures in *Ex Machina* and to draw upon the film to elaborate on the functioning of

⁷⁹ See "Born Sexy Yesterday", *YouTube*, uploaded by Pop Culture Detective, 27 Apr 2017, www.youtube.be/othpEyEwi8o.

power structures. This study proves that *Ex Machina* merits closer academic interest, provides notable insights into the world that we are living in, and gives us the opportunity to analyse the potential implications of AI in the near future.

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Appendix

Abstract in English

At a time of rapid technological change in which AI technologies are increasingly commonplace in people's everyday lives, the range of discussions focusing on the status and potential ramifications of AI is particularly fascinating. This thesis provides an analysis of one particularly feasible scenario relating to the creation of human-like AI depicted in the science fiction film *Ex Machina* (2015). The thesis offers three readings of the movie: Marxist, Feminist, and Psychoanalytic. These close readings of the film show how *Ex Machina* prompts viewers to reflect on the ideology of tech companies and gender constructions. Moreover, this thesis analyses the power relations between the film's characters and the way in which they are produced. The findings illustrate the production and functioning of power relations within various discourses.

Deutsche Zusammenfassung

In Zeiten eines rasanten technologischen Wandels in dem die KI einen immer leichteren Einzug in den Alltag der Menschen findet, erscheinen Diskussionen, die den Status und die potentiellen Auswirkungen der KI behandeln, besonders faszinierend. Diese Arbeit analysiert ein besonders anhängiges Szenario der Erschaffung einer menschenähnlichen KI, das im Science-Fiction-Film *Ex Machina* (2015) dargestellt wurde. Die Arbeit bietet drei Lesarten des Films an: marxistische, feministische und psychoanalytische. Diese Lesarten zeigen, wie *Ex Machina* den Zuschauer dazu veranlasst, über die Ideologie der Technologieunternehmen und die Genderkonstruktionen zu reflektieren. Außerdem werden die Machtverhältnisse zwischen den Filmcharakteren und die Art und Weise, wie diese Verhältnisse zustande kommen, analysiert. Die Ergebnisse illustrieren die Produktion und die Funktion dieser Machtverhältnisse innerhalb verschiedener Diskurse.