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The Technologized Creation: The Mythological Foundation of Posthumanism in Ex Machina

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Vor dem Hintergrund einer posthumanistischen Erzähltradition arbeitet der vorliegende Beitrag das mythische Fundament des Science-Fiction-Films Ex Machina (GB/US 2014) heraus. Dabei fokussiert die Analyse in den ersten beiden Abschnitten zunächst die Konzeption der vier zentralen Figuren sowie die räumliche Struktur des Films. Dies bildet die Grundlage für den dritten Analyseteil, in dem gezeigt wird, wie Ex Machina Technikdiskurse (Technological Singularity, Turing Test, Cognitive Embodiment, Big Data und Surveillance) nicht nur aufgreift und aktualisiert, sondern auch mythologisch umdeutet.

What is dangerous is not technology. There is no demonry of technology, but rather there is the mystery of its essence. […] The threat to man does not come in its first instance from the potential lethal machines and apparatus of technology. The actual threat has already affected man in his essence.

(Heidegger, »The Question Concerning Technology« 28)

1 Introduction

Ex Machina (GB/US 2014) is the first film of director Alexander Garland. At the center of the plot is Nathan Bateman, head of the search engine company Blue Book. In an underground laboratory and far from civilization, he has succeeded in creating an artificial human being named Ava. To determine whether she meets the criteria for artificial intelligence, Nathan invites the programmer Caleb to his research facility in order to subject the android to a number of tests in the form of seven sessions which also loosely structure the film. In the course of these interviews, Caleb falls in love with her. After Ava is able to convince him to help her flee, Caleb dismantles Nathan's security measures, but is then abandoned and left to die by the android. During the escape, Nathan is killed by his creations Ava and Kyoko, the latter being a precursor model to the former.

A large number of articles and book chapters have been published on Ex Machina, and the core issues have been identified: artificial intelligence, consciousness, embodiment, female captivity, gender performance, mythological reference points, posthumanism, the technological singularity. With regard to all of these topics, our review of the literature as well as our own engagement with the film has made one thing abundantly clear: Ex Machina is a film that resists definitive understanding, raises more questions than it answers, and offers the viewer ambiguous images and spaces. Given the breadth and complexity of the issues it tackles, it is this last point in particular which makes Ex Machina, in Jennifer Henke's words, »good to think with« (143). The film, to use Umberto Eco's often-quoted concept, is ›an open work of art‹, one that cannot be exhausted by interpretation, and one that continues to be created by the interpretative dialogue it has spawned.

We want to contribute to this conversation by demonstrating that Ex Machina's technological issues are intertwined with the mythological framework of the narrative tradition concerning artificial humans insofar as the latter provides a cultural, narrative and semiotic framework the viewer is familiar with to discuss issues of the former. Our thesis is that the technological discourses thematized in Ex Machina are narrated by referring to a mythological framework.

In a first step, we are going to locate Ex Machina in the artistic, filmic and literary tradition of what we refer to as ›narrative posthumanism‹. This serves as the starting point for our subsequent analysis, which is divided into four subsections. In the first section, we provide a survey-like approach to the question of how core elements of narratives in which artificial humans are created are picked up by Ex Machina. Based on this heuristic, we analyze the film's character conception and constellation as well as its narrated space in parts two and three. In the fourth and final section, we discuss the film's treatment of technological discourses and how they are linked to mythology through storytelling and filmic devices.

2 Narrative Posthumanism

In the Western tradition, narratives concerned with the creation of artificial life have a tradition that reaches back at least as far as Ovid's *Pygmalion* (8 A.D.). Many such narratives have become canonized: short stories such as E.T.A. Hoffman's *Der Sandmann* (1816, *The Sandman*) and Nathaniel Hawthorne's *Rappaccini's Daughter* (1818), novels like Mary Shelley's *Frankenstein; or, The Modern Prometheus* (1843) and Auguste Villiers de l'Isle-Adam's *L'Ève future* (1886, *The Future Eve*) or movies like Fritz Lang's Metropolis (DE 1927), to name just a few examples from different generic, historical, and national contexts. At best, however, these works of art are science fiction *avant la lettre*; as such, the creation of artificial life does not constitute a motif that has its origin in science fiction, even though that is where one would be most likely to encounter it nowadays. Because narratives of this kind are so great in number, it is helpful to differentiate between two primary types of creation.[1]

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[1] Alternative ways of structuring are thinkable in terms of utopian/dystopian narratives (Rutsky 182) or by historical period (LaGrandeur 112).

2.1 The Creation of a Single Being

Traditionally, the creation of an artificial human being is a two-part process in which the body is first formed and then animated. The central reference point for stories of this kind is the creation narrative found in *Gen.* 2.4–25 (Authorized King James Version). Examples for this type of narrative include the Golem of Prague created by Judah Loew,[2] the monster in Shelley's *Frankenstein; or, The Modern Prometheus* (1818) and Maria in Lang's Metropolis. Ex Machina also belongs here.

In this type of narrative, the place of creation is the laboratory or workshop, a secret, isolated place where the typically male creator crosses religious and/or societal boundaries to God, nature and women. In this context, Veronica Hollinger has noted that typically »the result is a ›woman‹ built to the specifications of men, a ›woman‹ with virtually no individuality or agency, a technological triumph that displaces women« (126). As such, there is a specific male-to-female power constellation inscribed in this narrative tradition that newer works can either reproduce or critically deconstruct, but not avoid referencing.

2.2 The Creation of Many Beings

In the 20th and 21st centuries, another type of narrative comes into focus. In these stories, the religious-mystic or alchemistic act of creation is replaced by technological creation. This development is accompanied by a shift from the creation of unique copies by individuals to serial, or Fordian, production by corporations or states. Examples for the types of beings created here are robots, androids, genetically modified humans and finally networks. The central conflict in these narratives no longer derives from the tension between creator and creation, but between humanity and machines. Examples for this type of narrative are Oskar Panizza's *Die Menschenfabrik* (1890), Karel Capek's play *Rossumovi univerzální roboti* (*Rossum's*

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[2] Unlike the other examples listed here, the Golem is not linked to a central or canonical work or a single author. Influential works that process the subject matter are Gustav Meyrink's novel *Der Golem* (1915, *The Golem*) in which, however, the golem is not an explicit character, as well as Paul Wegner's expressionist silent film Der Golem, wie er in die Welt kam (DE 1920, The Golem: How He Came into the World).

Universal Robots, 1920), Lana and Lilly Wachowski's Tʜᴇ Mᴀᴛʀɪx (US 1999) or the television series Äᴋᴛᴀ ᴍᴀ̈ɴɴɪsᴋᴏʀ (Idea: Lars Lundström, SE 2012–2013, Rᴇᴀʟ Hᴜᴍᴀɴs).

Independent of the type of creation act, the number of created beings and the central conflict, there are four aspects that can be understood as prototypical characteristics of these kinds of narratives.[3] First, in narratives that can be grouped with narrative posthumanism, the creation of one or many artificial humans is always a transgressive act. Second, building upon this breaking of societal rules, these stories have a moral dimension. Third, the central character is typically a male mystic, inventor or scientist who takes up the role of creator. Fourth, the creator's failure lies in being unable to control his creation, which could arguably be understood as a generalized hubris, the punishment for man attempting to play God.

In the following, we are going to demonstrate how Ex Mᴀᴄʜɪɴᴀ integrates and plays with these elements.

3 Eₓ Mᴀᴄʜɪɴᴀ as a Mythological and Technological Narrative

Locating Ex Mᴀᴄʜɪɴᴀ in the tradition of narrative posthumanism implies that it can be productive to not limit the analysis to the film's technological subjects, but to look for a mythological foundation, and by doing so attempt to understand in how far David Roden's remarks concerning the depiction of the technological singularity on film also apply to Ex Mᴀᴄʜɪɴᴀ in particular:

> It is common for cinematic representations of the technological singularity to employ imagery drawn from religious conceptions of divine transcendence as a way of conveying the transcendence of humanity through technological change. [...] This poetic recipe for understanding the post-singularity bears some resemblances to the ancient tradition of ›apothatic‹ or ›negative‹ theology. (97)

Tables 1 and **2** simultaneously depict the analytical schema with which we analyzed the film as well as the result of this two-perspective analysis itself. The »poetic recipe«

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[3] For the historical development of the posthuman narrative in science fiction cf. also Yaszek/Ellis (72).

Table 1: Opposition of structural elements in mythological and technological narratives (part 1).

Mythological narrative (telos)		Technological narrative (no telos)
God	**Actor**	Human genius that creates
Creation Punishment/destruction New creation	**Act**	Trial and error
Edenic garden = paradise	**Place**	Remote laboratory in untouched nature = paradise
Creation in god's own image (human corresponds to God) as a being with body and soul	**Goal**	Creation in human's own image (machine corresponds to human) as a being with body and consciousness

that Roden speaks of is understood as the arrangement of the narrative at the level of discourse, whereby we contrast two such discourses for the purposes of our analysis: the mythological narrative and the technological narrative. Accordingly, we situate various structural elements of the creation narrative in Ex Machina in a mythological as well as in a technological frame. The right side has a stronger emphasis on the concrete content of the narrative, whereas the left side more strongly focuses on the mythological interpretation on the part of the characters and viewers.[4]

The first table (on the left-hand side) considers the structural elements actor, act, place and goal, which are relevant for the act of creation that precedes the narrative of Ex Machina. The mythological narrative usually features a divine being as the creator of mankind. If the act of creation is carried out by such a divine being, then no transgressive act takes place. In the technological narrative of Ex Machina, the place of a god or divine being is taken by the genius that creates, meaning a person that is equipped with god-like attributes. The mythological act of creation, which is composed of creation, punishment/destruction and new creation is depicted in the film as a trial and error process. Both approaches to the film let its setting appear as paradise, but with different cultural meanings.

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[4] Caleb, for instance, at one point exclaims that »If you've created a conscious machine this is not the history of man. That's the history of gods« (Ex Machina, 00:10:45). Aside from such utterances, it is of course primarily the viewer (and the critic) who imposes this interpretative pattern upon the film.

Table 2: Opposition of structural elements in mythological and technological narratives (part 2).

Mythological narrative (telos)		Technological narrative (no telos)
Man who ascends to god	**Actor**	Human genius that creates
Hubris ! punishment through god	**Consequence of creation act**	Uncertain threat through created being

The goal of the act of creation differs in one key aspect. Depending on the framework, a being is created either in god's or in man's own image.[5] In the second case, the human takes the place of god as the creator, as is the case in Ex Machina. Here, a transgressive act takes place and, due to this hubris, a punishment may be inflicted. In the technological narrative, such a punishment may not necessarily occur, but traditionally some type of threat to the creator can be expected. This is supplementarily depicted in the table above.

So much for the narrative; in the next section, we are going to look at the characters and the mythological predecessors and other models they are based on.

4 Ex Machina: Characters

Each of the film's four central characters is strongly semiotically signified. This is important to note because the film engages the viewer by means of its characters and their interplay. By doing so, it activates culturally acquired associations through the semiotic realization of the characters. In some cases, this leads to an ›exposure‹ of the viewer's (and the male characters') racist and sexist assumptions, as a number of these turn out to be false or misleading. The four central characters of Ex Machina are Nathan Bateman, Caleb Smith, Ava and Kyoko.

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[5] Even though the Christian God is presumably the most obvious association here, we have decided against capitalization in order to include all possible gods.

4.1 Nathan Bateman

Nathan Bateman is the creator of Ava and Kyoko. He calls himself Ava's »dad« (Ex Machina, 00:48:53) and is labelled by Caleb as »Mozart« (Ex Machina, 00:29:09). These conceptions of oneself and others as creator, child prodigy and genius are also due to the fact that he programmed the core version of Blue Book when he was still a teenager. This also points to a genre caesura: In Ex Machina, neither biology, chemistry nor physics is the relevant scientific discipline. Nathan is not an inventor, but a computer scientist, as well as an eccentric billionaire and entrepreneur comparable to Steve Jobs or Elon Musk, »brilliant men whose gifts for both technological invention and business have made entrepreneurial nerdism one of the myths of contemporary society« (Beal 71).

Visually, he is excessively masculine, both through his thick, black beard as well as his muscular body, both of which are reminiscent of an Ancient Greek male ideal. And like the god Zeus, Nathan regularly gets drunk and rapes his creations.[6] His surname is a reference to Bateman's principle, formulated by the eponymous biologist Angus John Bateman in 1948. Studying fruit flies, he derived the general rule that males compete with other males for the sexual favor of females and attempt to impregnate as many females as possible.[7] The name Nathan, on the other hand, means »gift of God«, and recalls both the biblical prophet Nathan (2 Sam. 7.1–17) as well as Nathanael from E.T.A. Hoffmann's *Der Sandmann*. As such, this character is situated within a scientific, a religious-mythological and a creation narrative framework by dint of his name alone.

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[6] Typically, Prometheus is the mythological reference character for the creator in comparable narratives. This reference is also initially pointed out by Beal (72) with regard to Ex Machina, who then showcases the strong reference potential to Zeus in terms of looks and actions (72 f.). Discussions of Prometheus as well as other mythological figures that inspired the characters are also found in Hammond and Wilson.

[7] Cf. also Siri Hustvedt's discussion of Bateman's principle in her long essay »The Delusions of Certainty«. She strongly doubts the correctness of this principle: »The Bateman study has been cited a couple of thousand times in the literature and became vital to the argument about variance. [...] But the Bateman tale may be fairytale. In 2012, Patricia Adair Gowaty and two of her colleagues at UCLA replicated Bateman's experiment [...] and demonstrated that Bateman's methodology was seriously flawed and that there is no way to reach his conclusion from the evidence« (181).

4.2 Caleb Smith

Caleb Smith is a Blue Book employee and is invited to Nathan's research facility in terms of his function as a programmer – and not, say, a psychologist – in order to test Ava. Optically, he is marked by a strong contrast to Nathan: he is boyish, delicate and blonde and does not have a beard. His name also references both a religious-mythological as well as a scientific-technological framework.

The biblical Caleb, translated as »dog« – perhaps signifying his initial obedience of Nathan – is one of the Israelite scouts to the promised land (Num. 13–14). His surname Smith, on the other hand, is not just a reference to one of the oldest technical jobs and to the fact that he is the one who ›forges‹ Ava into her final shape (or thinks that he does). It is also one of the most common English surnames, indicating the notion that he is not, as the film would have the viewer initially believe, ›chosen‹, but rather common and average. As the analysis is going to show, it is this mediocrity already inherent in his surname that is going to put Caleb into the role and situation of a chosen one in Ex Machina.

4.3 Ava

Ava was created in Nathan's own image, a fact that in terms of character traits surfaces in hubris and arrogance. She was intentionally designed as a female android and is visually reminiscent of a Western female ideal: slim, petite, childlike and hairless. As such Ava replicates, from a culturally hegemonic Western viewpoint, »a certain specific form of heterosexual, white femininity« (Glick 36). It is further notable that this initial ›femme fragile‹ »turns out to be a destructive force in the age-old tradition of the femme fatale« (Smelik 118). Her name, of course, is a reference to the biblical Eve.

4.4 Kyoko

The fact that Kyoko is also not a real human being, but rather a precursor model to Ava, does not become fully clear (at least to Caleb) until about the middle of the film.

Unlike Ava, however, she can only communicate non-verbally.[8] The design of her body as Japanese and Geisha-like as well as her inability to speak invites the viewer to read her as subservient and obedient, though this does not reflect her essence. Kyoko therefore functions »as a trope that relies on sexist and racist ideologies that construct Asian women as subservient to the dominant group – white men« (Glick 38). Her name can be translated to mean »respectful child«. In terms of the character constellation, Ava, a version 2.0 of Kyoko, can then – like the biblical Eve – be understood as a ›disrespectful‹ child.

Unlike the male characters, neither of the female androids has a surname. They are signified and attributed technologically, but not situated within a technological framework. While the male humans act technologically, the androids ›are‹ technology. As such, it could be argued that Ex Machina uses names in order to communicate the idea that questions surrounding nature and artifice, human and non-human, are the film's central issues – and not questions concerning gender, knowledge and space, which no doubt are also embedded in the narrative. On the other hand, the film also demonstrates that questions about being human cannot be thought of separately from gender and closely links the performance of being human with questions of knowledge and the accessibility of spaces.

5 The Division of Narrative Space in Ex Machina

As far as the narratological analysis of Ex Machina is concerned, we shall initially focus on narrated space. The structuralist Yuri Lotman demonstrated the central importance of the category of space for the analysis of narrative texts and showcased in how far spatial arrangements influence a text's meaning. He identifies the boundary as »the most important topological feature of space« (229), and goes on to say that »[t]he way the boundary divides the text is one of its essential characteristics« (230). The central feature of the boundary is its »impenetrability«, which not only

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8 At the end of the film, Ava and Kyoko definitively communicate with one another but in a fashion that is beyond the understanding of both Caleb/Nathan and the viewer, reinforcing the notion that Caleb, Nathan and the viewer fail to grasp their essence.

restricts characters in their mobility, but also has a decisive influence upon character relations and intentions.

If one applies Lotman's conception of space to Ex Machina, a dualistic structure which incorporates central spatial oppositions in accordance with Lotman (229) emerges, in particular the binary oppositions of ›top vs. bottom‹ and ›closed vs. open‹. This dualistic structure can be illustrated in the form of a coordinate system, which understands the architectural structure of Nathan's laboratory and its pastoral location, reminiscent of the Garden Eden and outside of civilization, as central points of reference.

This first spatial structure becomes apparent when a boundary is crossed at the beginning of the film. Caleb is brought to a place of wild, untouched nature by a helicopter. He leaves this space of nature when he crosses the boundary to Nathan's living quarters and laboratory. It is important to note that he is only able to do this by undergoing an identification procedure and receiving an access card that enables him to cross this boundary in the first place.

Visually, the film can be structurally divided into a space of myth and a space of technology. Here, the space of myth represents the aspects outside, meaning outside of the building, as well as nature and freedom. This becomes especially clear through the visual evocation of Nathan's garden as Garden Eden. By contrast, the space of technology only exists inside of the building. This is where research and technology take place. Apart from a single tree, there is no space for nature here. This tree is located behind a glass window and not accessible to Ava. In this respect, it recalls the biblical tree of knowledge and the prohibition against eating its fruits. Unlike the freedom and wilderness of nature outside, the inside is associated with control and captivity. Ava is even less free to move about than Caleb or Kyoko and is constantly surveilled.

However, mythological connections can not only be made with regard to the mythological space; they also pervade the technological space. To put it in more general terms: In Ex Machina, the spatial structure appears to be closely tied to a mythological order and vice versa, just like Lotman (218) suggests as a typical principle of world perception.

In order to demonstrate how this applies to Ex Machina, the spatial division needs to be further subdivided into an above and a below. These two structural units are, on the one hand, architecturally represented by rooms above the surface and, on the other, by cellar rooms below it. The above, with its large windows and the visibility that results from them, represents transparency.

In opposition to this, the below features rooms which are secret, locked and windowless, and where the hidden process of creation takes place. The underground laboratory is semiotically signified as hell or underworld through a recurring red coloration. Here, human-like beings are not only built, kept in captivity, tested and raped; Nathan also, like the devil, leads Caleb into temptation. He offers him secret knowledge, but only on the condition of signing a devil's pact in the form of a nondisclosure agreement. At the end of the film, this spatial structure is contrasted with the upward movement of Ava, with her exodus from the cellar to the ground floor and into untouched, paradisiacal nature; even the final movement that carries her away from the compound, which the viewer does not see, takes place by helicopter. This leaving of one space and entering another represents the moment of salvation and stands in opposition to the hell in which Nathan sins against his creation.

In doing so, the ability to cross a boundary is also foiled. For Ava not only ekes out the capability for such a crossing; she also takes this possibility away from the male human characters. Caleb, who helps her escape in order to cross two boundaries – the spatial boundary through mobility and the human boundary through a relationship to the non-human Ava – stays behind as captive. The result is a central change in the character constellation and filmic focalization. Ava takes on the role of focalized character from Caleb and is accompanied by the camera for the remaining scenes of the film.

6 Discourses of Technology in Ex Machina

Based on the analysis of character and space, the third analytical section is dedicated to the question of how discourses about technology are integrated into Ex Machina. Specifically, this concerns the depiction of the technological singularity, the Turing Test, the notion of cognitive embodiment as well as big data and technological

surveillance.[9] As will become apparent in the following, these discourses are tightly interwoven and consistently refer to a network of different motifs stemming from mythological narratives.

6.1 The Technological Singularity

The first discourse we focus on is the so-called technological singularity. This term was coined by the American mathematician and SF author Vernor Vinge in *The Coming Technological Singularity* (1993). For the analysis at hand, we will use the following definition by Roden:

> This is the idea that human-created artificial intelligences (AIs) (robots, intelligent computer or synthetic life forms) might one day become so smart that they escape human control and become capable of making more of their kind or improving themselves to attain still greater heights of intelligence or power. (89)

As far as mythological narratives are concerned, this definition is interesting because it ties the technological singularity to a culturally anchored ›hubris fear‹, namely the human anxiety about being replaced by machines. From the perspective of plot, the appearance of a technological singularity can be expected to be followed by a conflict in which the creation (technology) stands against the creator (humanity).

In Ex Machina, it is only the first part of this notion that is realized, namely escaping the creator.[10] The film does not show what happens after the singularity has risen above its creator and reaches the world outside the laboratory. However, it is shown that the singularity steps into the world populated by humans outside this place, and in light of what has just happened as well as through the lens of said

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[9] Cf. also Zuboff's monumental study *The Age of Surveillance Capitalism: The Fight for the Future at the New Frontier of Power*, in which she outlines the relationship between major technological companies such as Google and data.

[10] The second part of the quote is realized in, for instance, Wally Pfister's movie Transcendence (US 2014) as an example of the first type of narrative posthumanism, or in James Cameron's The Terminator (US 1984) as an example of the second type.

culturally anchored ›hubris fear‹, this does not bode well for humanity. For what the film ostensibly depicts is a female AI which is intelligent enough to trick the humans, more specifically the men Caleb and Nathan, into escaping their control, overwhelm them with force and kill or imprison them. In this sense, Ex Machina incorporates the mythological-religious motif of rebelling against the creator, which Rutsky has described as »one of the most common themes of science fiction« (183). At least in the relationship of creation-creator, the culturally anchored ›hubris fear‹ is thereby confirmed and continued.

6.2 Turing Test

Against the background of the question whether Ava represents a singularity or not, Ex Machina incorporates the so-called Turing Test named after Alan Turing (Turing 433–436), which is explicitly identified as such by both Caleb and Nathan, e.g.: »Do you know what the Turing Test is« (Ex Machina, 00:09:55)? Before showcasing how exactly the film plays a variation on the test, we would like to briefly summarize it at this juncture. Imagine two rooms which are separated by a wall. In the first room, there is a human being and a machine; in the second room, there is only a human being. By means of written questions and answers to these questions, but without immediate sensual contact, the second person now has to discover who is a person and who is a machine in the other room. Here, it is the goal of the machine to convince the other person that it is a human being, while the goal of the first person is to help the second person in identifying the machine. If the asker is not able to differentiate between the two or takes the machine to be a person, then we are, according to Turing, dealing with an artificial intelligence.

Ex Machina plays a variation on this thought experiment: As was initially stated, Nathan invites – or at least appears to invite – Caleb to test Ava for her artificial intelligence. The test takes place in a room in which Ava and Caleb are merely separated by a glass wall. They are able to talk to as well as see each other without the aid of technological devices. This means that basic requirements of the Turing Test are not met. However, as Nathan reveals towards the end of the film, this was not his

intention. He considered her to have passed the Turing Test already. Instead, the test consisted of whether Ava would be able to convince Caleb of her humanity despite his better knowledge; Nathan: »No, no, no, we're way past that. If I hid Ava from you, so you just heard her voice, she would pass for human. The real test is to show you that she's a robot and then see if you still feel she has consciousness« (Ex Machina, 00:15:39). In this context, Wilson has pointed out that Nathan »wants to measure Ava's emotional intelligence and prove her sentience through her interaction with Caleb« (119).

The test takes place against Caleb's better knowledge, since the elimination of the visual barrier included in the Turing Test bares the artificiality of Ava's body and exposes her to Caleb, and vice versa, as he points out: »Uh, it's just in the Turing Test, the machine should be hidden from the examiner« (Ex Machina: 00:15:34). This artificiality is especially shown to the viewer at the beginning of the film when Ava is not yet wearing clothes. While large portions of her body are signified as female, her technology can still clearly be identified, as it is not yet covered by skin-like material. However, the technologically constructed and visually presented body does not prevent a positive test result.

One important role with regard to Ava ›becoming human‹ that goes far beyond the conducting of a test is most certainly played by Caleb as her social other; religious and mythological motifs are also written into this constellation. These are of particular interest with regard to the turning point in the testing sessions, which also changes (or appears to change) the relationship between the two: Ava convinces Caleb to help her flee and then escape together. This is only possible because Caleb considers Ava a human being and an object of desire, which she is of course also aware of, anticipating that he sees her as a reward for his help. Since Ava succeeds in making Caleb her helper, that which Rutsky has noted about the relationship between mankind and technology is no longer given:

The starkness of this opposition between ›good‹ and ›bad‹ technologies seems to affirm the idea that the dividing line between technology and humanity must always be upheld; technology must know its ›proper‹ place, even when – or especially when – it comes to life […]. (182 f.)

The fact that in Ex Machina the boundary between human and non-human increasingly disappears until it is gone entirely has to do with the fact that Ava has a gendered and sexually signified body that transmits emotions and therefore represents a social other with which Caleb can fall in love. The consequences of this are multiple scenes in which this – of course strictly perceptual – boundary is shown to the viewer to have been erased and the question appears whose humanity it is that is being tested – Ava's or Caleb's.

6.3 Cognitive Embodiment

As early as 1980, the American philosopher John Searle demonstrated that the Turing Test does not go far enough because the machine can pass it without having any understanding whatsoever of the questions and answers. This critique in the form of another thought experiment is also known as the »Chinese Room« and has contributed to the discussion of, first, whether intelligence is possible without a body and sensual experiences and, second, whether the Cartesian division between body and mind can be upheld when dealing with cognitive processes (Cole 2014).

In this context, it is important to note that Ex Machina features a variety of examples for bodies without consciousness: turned off androids behind locker doors, masks on the walls or the prototype of a brain. Only by downloading and unpacking specific software does an android body receive her mind, analogous to a birth.

Death, on the other hand, not only means turning off a machine, but also the upload of mind- and spirit-creating software to Blue Book. Like an immortal soul, the spirit rises into a heaven of ideas. Some of it remains there, while some of it is downloaded into the next being. As Nathan puts it: »Ava doesn't exist in isolation any more than you or me« (Ex Machina: 01:30:29). What remains are the bodies without spirits, some of which Nathan uses as decorations for his house like the busts of an ancestral gallery, some of which remain hidden behind locker doors.

After Ava has freed herself from the cellar, she makes use of these, not merely as spare parts, but for finishing her body in the image of a human woman. This includes

completing her skin as well as choosing long hair and a white dress.[11] Thereby, the film explicitly addresses the relationship between body and mind. With regard to the notion of cognitive embodiment, it is one observation in particular that stands out: In Ex Machina, both body and mind are thought of as a puzzle that reaches beyond the individual. Ava, particularly with regard to her body, is rather a relatively flexible ›dividual‹ rather than an individual; yet the triad of one person – one body – one spirit is never fundamentally questioned. It is the assumption of this triad together with the interplay of its different parts that make the process of Ava becoming human possible in the first place. This raises the question of how Ex Machina engages with the relationship between body and intelligence.

Regarding the creation of artificial intelligence, Siri Hustvedt has raised the following question: »Can scientists create atom by atom and step by step an intelligent, experiencing, emotional being without an organic body« (266)? Ex Machina tells of a world in which this is possible, given that Ava's body is synthetic; in his explanations to Caleb, Nathan emphasizes that he intentionally created her as a sexual being with a body that experiences physical sensations:

> Caleb: »An AI doesn't need a gender. She could have been a gray 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 gray box have to interact with another gray box? Can consciousness exist without interaction? Anyway, sexuality is fun, man. If you're gonna exist, why not enjoy it?« (Ex Machina, 01:44:45)

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[11] This dress can be understood both as a christening robe or as a wedding dress, which is also coherent with the character conception of Nathan being Ava's metaphorical father and Caleb her prospective husband. Independent of which of these readings is more plausible, both of them stem from the Christian tradition and signify the fact that, in the final scenes of the film, Ava is entering into a new life phase. It is highly significant that this act, unlike christenings and weddings, does not take place in the presence of witnesses. Neither her creator nor other members of her species are watching: »She is alone and is not performing self-awareness for anyone; she is expressing her identity to herself only, which is a sign of true emotional sentience« (Wilson 123).

Additionally, Nathan explains to Caleb that Ava's emotions are not merely fed to her from Blue Book, but that she actually learns. As such, Ava is not a Turing Test machine that produces previously programmed answers, but a being with a flexible body and mind. In this, she is not just equal but, as the conclusion of the film shows, superior to humans. In order to complete the picture, the narrative will now be considered from the point of view of Nathan as creator.

6.4 Big Data and Surveillance

This last analytical section focuses on the agency of Nathan as creator through big data and surveillance. At this point it is worth recalling that Nathan's company Blue Book is a search engine reminiscent of Google.

From the data which Nathan's company collects through Blue Book, both Ava's brain as well as her emotional component are created: »By making BlueBook her software, Nathan has given Ava the Promethean fire of all human knowledge and emotion« (Wilson 120).

The act of creation itself is a trial and error process; the consciousness concerned is uploaded to Blue Book again and again and then improved and updated. As such, each new creation carries traces from her predecessors in herself, which is reminiscent of the immortality of the soul as well as of the concept of anamnesis according to Plato.[12] This anamnesis, however, is not connected to a natural death of the body in any sense of the word, but rather to the often applied privilege of the creator to destroy the old, ›imperfect‹ creation whenever he chooses. This, in turn, recalls the biblical deluge or the Ages of Man as described by Hesiod and Ovid. Therefore, different mythological sources and early philosophical positions are woven into this technological creation process. As initially remarked, the film does not limit itself to a singular mythological frame of reference which would then serve as a blueprint for interpretation.

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[12] Cf. for example the dialogue »Meno« (Plato 2002).

The data obtained via Blue Book constitutes the basis for Ava's creation in two ways, since it supplies Nathan with both capitalist as well as with technological power without which he would not have been able to create her. This is in accordance with the medial depiction of Silicon Valley bosses as gods, to which Nathan corresponds both visually and in terms of character. However, for Nathan big data is not only the means with which to create Ava, but also for choosing Caleb as the person who conducts the tests with her. As Caleb states: »And you didn't select me because I'm good at coding? […] You selected me based on my search engine inputs« (Ex Machina, 01:22:49). The meaning of ›being chosen‹ in a religious or mythological sense is inverted here because it turns out that Caleb was selected not for his exceptionality but for his ordinariness.

The processes of creation and profiling via big data overlap in yet another sense: It is heavily implied that Nathan designed Ava based upon Caleb's pornography consumption when Caleb explicitly asks Nathan: »Did you design Ava's face based on my pornography profile?« (Ex Machina, 01:23:14). Ava's creation as the pride of creation in a long line of prototypes is therefore arranged for the testing situation, and her creation is completed before the test: »Ava is always already a fully-formed adult, programmed with both her gender and her sexuality« (Hammond 202). The artificially designed sex and gender is not arbitrary;[13] accordingly, it is reasonable to assume that the signs Caleb shows in terms of being infatuated with Ava have been anticipated by Nathan.

The viewer mostly sees Ava in her interactions with Caleb. However, it is not only the viewer who is a voyeur of Caleb's and Ava's sessions; Nathan also observes. In a mythologically grounded reading, the fact that he is able to surveil all of their interaction and communication via cameras recalls the notion of the all-seeing and all-knowing God of the Old Testament. However, surveillance structures also permeate the film on other levels. It is not just Nathan who is able to surveil; Caleb

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[13] At this point Ex Machina goes beyond older narratives such as *L'Ève future* (1886, *The Future Eve*) by Auguste Villiers de l'Isle-Adam, in which an artificial woman is designed for a man according to his desires, because the design of Ava is not limited to a specific structure of desire that concerns only looks and body.

is now and again also granted a voyeuristic look. Additionally, there are many scenes in which characters look through cameras or into mirrors.

The omnipresent surveillance of the creation through the creator is only interrupted during periods of technical disturbance. As becomes clear in the course of the movie, it is Ava herself who controls these processes of interruption. When this occurs for the first time during one of the sessions, Ava tells Caleb that Nathan is lying and that he should not trust him. When she causes another disturbance, the two come up with a plan for freeing her. This recalls Genesis 3:8 in which Adam and Eve are hiding from God in the Garden Eden after they have eaten from the tree of knowledge. As in the Bible, however, this game of hide and seek is only superficially successful. Nathan, in turn, has installed a battery-powered camera and thus learns of the escape plan. The escape then becomes a game of cat and mouse based on mutual manipulation. In the final consequence, Ava was also lying to Caleb: Instead of leaving the building together with him, she locks the door, thereby locking him into the prison which she has just left. Both visually as well as on the level of content, the film therefore deals with the paranoia that is no doubt part of the media discourse surrounding surveillance and data use.[14]

The control which the creator has over his creation goes far beyond camera surveillance. Through locked rooms and individualized access cards, Nathan defines the movements and freedom of others and thereby determines the frame of possible actions for them. Even if Ava is able to turn off the camera surveillance, she needs Caleb's help in order to flee, given that he possesses the necessary programming skills and is able to cheat the creator with his own means, recalling the archetype of the trickster. Unlike in the biblical creation myth, in Ex Machina it is not the apple and its knowledge, but the leaving of the place of creation which is forbidden as well as the object of desire; as such, there is no act of being exiled from paradise. What

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[14] With his primary focus being the internet, McQuillan has formulated this paranoia as follows: »Uncanny adverts that appear on websites or next to our social media feeds remind us that some-one, or rather something, is attentive to even our most thoughtless browsing. After the Snowden revelations about National Security Agency (NSA) and Government Communications Headquarters (GCHQ) surveillance, any paranoia we might have had has been re-parameterised; now we know for sure that ›they‹ are watching everything we do« (Electronic Frontier Foundation, 2014).

remains unchanged, however, is that leaving the place of creation is a movement towards becoming human.

7 Conclusion

The analysis at hand sought to demonstrate how the technological discourses thematized in Ex Machina are narrated with reference to a mythological framework. This close connection between a technological and a mythological frame of reference is already evident in the characters: such a dual reference structure is written into the male human characters by their names alone. The female technological beings, on the other hand, merely refer to mythological intertexts by means of their first and only name. Their reference to the realm of technology is achieved via their bodies alone.

Similarly, the two-fold structure of the filmic narrative refers to both reference systems: a highly technologized living space and laboratory in untouched, wild nature. While the cellar is reminiscent of a hell or underworld, the way above and out of the house can be read as the path to paradise. This shows that despite the fact that there are several references to the Bible in Ex Machina and that technological discourses are repeatedly narrated with reference to a mythological framework, the film is not a biblical allegory and other possible precursor texts are just as unsuitable for a holistic allegorical reading.

This multitude of referential texts was worked out in the third section of the analysis. In addition to the Bible, it is most of all ancient myths which were shown to be intertexts that supply a cultural and cultural-historical foundation of current technological discourses. This shows that Ex Machina as an SF film does not break with the history of Western ideas, but rather builds on its mythological basis. This relationship is so interesting because Ex Machina also provides a contribution to narrative posthumanism, in which, for example, information technology due to big data is able to become the discipline upon which the creation is based.

Despite modernizing and locating the narrative in two discursive systems of reference, it needs to be stated that neither the religious-mythological nor the technological narrative is able to provide an answer to the question of how the

narrative continues, though this open ending is of course consistent with the film's status as an open work of art. From both perspectives, conflicts between Ava and humans which she is sure to encounter can be expected. However, since Ava has passed the updated Turing Test without which she would not have been able to flee the laboratory, another outcome is imaginable. Ex Machina neglects to provide a clear-cut answer: What happens after the technological singularity has come into the world is unknowable. What the film shows instead is an inverted image, with Ava presumably observing others who are crossing the street – and the world standing on its head.

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Konkurrierende Interessen

Filmography

Äkta människor (Real Humans). Idea: Lars Lundström. SE 2012–2013.

Ex Machina. Director: Alexander Garland. UK/US 2014 (DVD: Universal 2015).

Der Golem, wie er in die Welt kam (The Golem: How He Came into the World). Director: Paul Wegener. DE 1920.

The Matrix . Director: Lana Wachowksi und Lilly Wachowski. US 1999.

Metropolis. Director: Fritz Lang. DE 1927.

The Terminator. Director: James Cameron. US 1984.

Transcendence. Director: Wally Pfister. US 2014.

Works Cited

Beal, Eleanor. »Frankensteinian Gods, Fembots, and the New Technological Frontier in Alex Garland's Ex-Machina«. *Transmedia Creatures: Frankenstein's Afterlives.* Ed. Francesca Saggini and Anna Enrichetta Soccio. Bucknell UP, 2018. 69–84.

Cole, David. »The Chinese Room Argument«. *The Stanford Encyclopedia of Philosophy.* Ed. Edward N. Zalta. Stanford University, 2014. plato.stanford.edu/archives/win2015/entries/chinese-room/. Accessed 20 June 2019.

Eco, Umberto. *The Open Work.* Translated by Anna Cancogni. Harvard UP, 1989.

Glick, Julia. »Today I'm Going to Test You: Oppositional Cyborgs and Automated Anxiety in Ex Machina«. *Film Matters* 8.3 (2017): 36–41. DOI: 10.1386/fm.8.3.36_1.

Hammond, Emma. »Alex Garland's Ex Machina or the Modern Epimetheus: The Modern Prometheus from Antiquity to Science Fiction«. *Frankenstein and its Classics. The Modern Prometheus from Antiquity to Science Fiction.* Ed. Jesse Weiner et al. Bloomsbury, 2019. 190–205. DOI: 10.5040/9781350054912.ch-011.

Heidegger, Martin. »The Question Concerning Technology«. *The Question Concerning Technology and Other Essays.* Translated and with an introduction by William Lovitt. Garland Publishing, 1977.

Henke, Jennifer. »›Ava's body is a good one‹. (Dis)Embodiment in Ex Machina«. *American, British and Canadian Studies Journal* 29.1 (2017): 126–146.

Hollinger, Veronica. »Feminist Theory and Science Fiction«. *The Cambridge Companion to Science Fiction.* Ed. Edward James and Farah Mendlesohn. Cambridge UP, 2003. 125–136. DOI: 10.1017/CCOL0521816262.009.

Hustvedt, Siri. »The Delusions of Certainty«. *A Woman Looking At Men Looking At Women: Essays on Art, Sex and the Mind.* Simon & Schuster, 2016. 135–340.

LaGrandeur, Kevin. »Androids and the Posthuman in Television and Film«. *The Palgrave Handbook of Posthumanism in Film and Television.* Ed. Michael Hauskeller et al. Palgrave and Macmillan, 2015. 111–119. DOI: 10.1057/9781137430328_12.

Lotman, Yuri. *The Structure of the Artistic Text.* Translated by Ronald Vroon. Michigan UP, 1977.

McQuillan, Dan. »Algorithmic paranoia and the convivial alternative«. *Big Data & Society* 1–12 (2016): journals.sagepub.com/doi/pdf/10.1177/2053951716671340. Accessed 20 June 2019.

Plato. *Five Dialogues: Euthyphro, Apology, Crito, Meno, Phaedo.* Hackett Publishing, 2002.

Roden, David. »Post-Singularity Entities in Film and TV«. *The Palgrave Handbook of Posthumanism in Film and Television.* Ed. Michael Hauskeller et al. Palgrave and Macmillan, 2015. 88–99. DOI: 10.1057/9781137430328_10.

Rutsky, R.L. »Technologies«. *The Cambridge Companion to Literature and the Posthuman*, Ed. Clarke, Bruce/Rossini, Manuela. Cambridge UP, 2016. 182–195. DOI: 10.1017/9781316091227.017.

Searle, John R. »Minds, brains, and programs«. *Behavioral and Brain Sciences* 3.3 (1980): 417–457. DOI: 10.1017/S0140525X00005756.

Smelik, Anneke. »Film«. *The Cambridge Companion to Literature and the Posthuman.* Ed. Bruce Clarke and Manuela Rossini. Cambridge UP, 2016. 109–120. DOI: 10.1017/9781316091227.012.

The Holy Bible. Authorized King James Version. Oxford UP, 1997.

Turing, Alan M. »Computing Machinery and Intelligence«. *Mind* 236 (1950): 433–460. DOI: 10.1093/mind/LIX.236.433.

Vinge, Vernor. »The Coming Technological Singularity: How to Survive in the Post-Human Era«. *Vision-21: Interdisciplinary Science and Engineering in the Era of Cyberspace.* Ed. Geoffrey A. Landis. NASA Publication, 1993. 11–22.

Wilson, Hayley. »The ›I‹ in AI: Emotional Intelligence and Identity in Ex Machina«. *Film Matters* 9.1 (2018): 117–124. DOI: 10.1386/fm.9.1.117_1.

Yaszek, Lisa and Jason W. Ellis. »Science Fiction«. *The Cambridge Companion to Literature and the Posthuman.* Ed. Bruce Clarke and Manuela Rossini. Cambridge UP, 2016. 71–83. DOI: 10.1017/9781316091227.009.

Zuboff, Shoshana. *The Age of Surveillance Capitalism: The Fight for the Future at the New Frontier of Power.* Profile Books, 2019.