

Representations of robots in science fiction film narratives as signifiers of human identity

Recent science fiction has brought anthropomorphic robots from an imaginary far-future to contemporary spacetime. Employing semiotic concepts of semiosis, unpredictability and art as a modelling system, this study demonstrates how the artificial characters in four recent series have greater analogy with human behaviour than that of machines. Through Ricoeur's notion of identity, this research frames the films' narratives as typical literary and thought experiments with human identity. However, the familiar sociotopes and technoscientific details included in the narratives concerning data, privacy and human-machine interaction blur the boundary between the human and the machine in both fictional and real-world discourse. Additionally, utilising Haynes' scientist stereotypes, the research puts the robot makers into focus, revealing their secret agendas and hidden agency behind the artificial creatures.

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1. Introduction

Fictional narratives do not necessarily borrow their ontologies from the actual world, but they may provide ‘reasonably familiar’ *sociotopes* to enable relatability to the story (Ekelund and Börjesson 2005). Science fiction films and books depict robots that behave like humans and, sometimes, come into conflict with them. The earlier robot protagonists are easily distinguishable from humans (such as C-3PO and R2-D2 in *Star Wars*, or Cylon Centurions in *Battlestar Galactica*) or quickly reveal their robotic nature when working to achieve their goals (T-800 and Rev-9 from the *Terminator* franchise). The earlier storyworlds are often located in considerably different spacetimes, such as in far-future, interstellar space as is the case of *Battlestar Galactica* and *Star Wars*. *Terminator* is grounded in an imaginary far-future depicting apocalyptic events in the present. In contrast, the past decade has provided several highly popular films and television series where artificial, intelligent characters are the main protagonists and the narrative revolves around robot–human interaction or presents societies where humanoid robots are common household and industry devices, such as *Humans* (2015–18, UK) and *Westworld* (2016–) or the films *Her* (2013), *Ex Machina* (2014) and *Jexi* (2019). In these representations, the machine is placed in a closer opposition to and juxtaposition with the human through its external and behavioural similarity or its attempt to be accepted on equal grounds or even pass as a human. Additionally, the given sociotopes are closer in time and space to the actual, extra-textual reality. This is especially apparent in how, with the exception of the robots, the rest of the technology presented in these sociotopes tends to be reflective in each case of the year in which the film was created.

Existing studies concerning the reception of robot characters in culture typically either focus on fiction reflecting societal issues (Hellstrand 2015; Haynes 1994, 2003, 2017) or critically compare fictional accounts with real-world technology (Goode 2018), often finding the fictional descriptions lacking in accuracy. The consequent blurring of boundaries between fictional and non-fictional objects, as well as between science and fiction, fails to reveal that, in its entirety, the fictional robot is a creature of simulacrum, specifically one referring back to the flexible internal rules of the intra-textual storyworld and not accurately modelling the known objects, facts and concepts of the extra-textual universe. Recent developments in real-world technology combined with the realistic ontologies of television seem to bring fictional robots from futuristic interstellar space into present human sociotopes. The variations of robots are associated with the generic concept of Artificial Intelligence (AI). Meanwhile, media debates on real-world algorithms, data and humanoid robots further increase this confusion. Therefore, it is necessary to take another look at robot characters as possible composite signifiers referring to multiple extra-textual domains.

The goal of this article is to analyse the signifiers of fictional AI characters and their relationships with human characters and determine the aspects of

referential reality for each signifier. The analysis is based on a selection of recent science fiction series featuring one or more intelligent, artificial creatures passing as human: television series *Humans* (2015–18), *Westworld* (2016–), *Are You Human?* (2018) and *Better than Us* (2018). All selected series are from the past five years, popular and highly rated by viewers (with an average rating higher than 7/10 in Internet Movie Database (IMDb) and scores over 80% in Rotten Tomatoes). In their general mood, most of the selected films and shows are dystopian, dark and bloody, with the exception of the South Korean *Are You Human?* which is markedly optimistic and shows the AI in a more positive light.

An overview of the research objects, their characters and storyworld locations is explained in Table 1. The study follows the qualitative method, focusing on the general world-building rules of fictional narratives rather than specific scene descriptions (the latter are used as illustrations). Visual analysis is not part of the study as all observed characters are portrayed by human actors and pass as humans at some point in the plot. All episodes available as of 2020 were viewed while taking notes on the aspects of human–machine oppositions and other points of analysis.

In literary fiction, monsters are typically used to reflect on problems of identity, hierarchy and power, belonging, acceptance, social inequality and/or gender. A well-known example is Mary Shelley’s *Frankenstein*, which has inspired large amounts of secondary literature, both in fiction and in research on the topics of human values, alienation, feminism and culture (see Schor 2003 for an overview). The legacy of *Frankenstein* in the 20th and 21st centuries includes fictional cyborgs, androids and other artificial beings (Clayton 2003). The first story of mechanical robots by Karel Čapek was meant as a commentary on the increasing mechanisation and dehumanisation of the industrial workplace (Goode 2018). Artificial creatures have a long history in mythology, starting from the ancient Greek legends of Talos and Prometheus (Mayor 2018), the derivatives of which have become cultural base narratives alongside the stories of Frankenstein and Golem.

At the same time, real-world developments in intelligent technologies are accompanied by frequent comparisons to human intelligence, upon which the machines are modelled, and futuristic predictions where, as pointed out by Daniel Dinello (2005, 274), ‘techno-scientists advocate posthuman technologies as sources of omnipotence, immortality, and transcendence’. Science fiction is a genre that often drives common understanding of technology and science, and fictional storyworlds are in turn inspired by contemporary technological developments (Haynes 1994; Noble 1997). Therefore, the representations of technologies in science fiction become part of the general discourse on technology. Characters portraying AI offer compelling imagery of the possible properties and functions of an ‘intelligent robot’ in society. The anthropomorphic, hypersexualised and extremely dystopian, or utopian, depictions of AI in fictional narratives have been deemed somewhat problematic in relation

to the public understanding of the actual technologies (Cave et al. 2018). Using visual representations of the *Terminator* and other anthropomorphised imagery to illustrate real-world technologies draws an immediate metaphorical parallel and prompts automatic, uncritical comparison between the fictional and the non-fictional robot.

Among other things, fictional narratives may refer to ideas, hypotheses and theories from the extra-textual reality (Ekelund and Börjesson 2005). The interactions between robot and human characters in the storylines may also reflect the imaginaries and expectations of real-world interactions with intelligent technology, in addition to the issues concerning real-life social or power relations among human beings. Thus, the meaning of the fictional robot and its interactions becomes questionable when seen from the perspective of real-world ontologies: does the machine refer to typical problems of human society and interhuman relationships, shown as an extremely marked Other, or does it represent the reality or future of the developing technologies and human-machine interaction?

Section 2 focuses on the historical use and interpretations of robot, cyborg and other monster characters in science fiction. These characters can be read as critiques of the issues concerning human society and relationships. Alternatively, Paul Ricoeur describes such characters and science fiction in general as literary and thought experiments with human identity (Rasmussen 1995, 166). The identity is construed in a dialectic with alterity, and science-fictional monsters offer ample freedom to take such Otherness to the extreme. In Section 3 follows Roslynn Haynes' interpretation, positioning the fictional robots as signifiers of their makers — the scientists. Usually performing in supporting roles, these characters exist in most of the observed series and largely correspond to Haynes' scientist types and value models.

From the viewpoint of Tartu-Moscow cultural semiotics, any kind of art is a form of modelling activity, the result of which (a model) can be taken as an analogue of an[other] object that it substitutes for, provided that the model corresponds to certain rules of analogy (Lotman 2011, 249–50) or is reasonably recognisable. Models can be observed at different levels of detail. In this sense, the sociotopes of the observed series correspond to models of the world that contain other models — the robot characters. A model stands for an(other) object of perception (ibid.) and here the question becomes: what does the fictional robot stand for? Despite its mechanical nature, it can be a model of a human being, with its relationships modelling interhuman relationships, or it can be taken for a model of a machine, or both. In this manner, multiple aspects relating to the social and cultural construction of human identity become visible in the observed narratives. Section 4 focuses on three such aspects that emerge from the material and relate to the semiotic concepts used as analytical tools. It shows the analogues at work at the levels of emotions, embodiment and decision-making in the observed characters, demonstrating that there is more human and less machine in the fictional robots. In par-

ticular, Section 4.3, concerning reasoning activities, employs the notion of semiosis as a living sign process and an action of choice as defined by Tartu biosemiotician Kalevi Kull (2018) to show that these characters have greater analogy with humans than machines. Juri Lotman's (2009) notion of (cultural) unpredictability further helps to assess the fictional decision-making and prediction skills of the robots.

Title	Storyworld spacetime location	Human characters	Types and names of artificial characters	Extra-textual references
<p><i>Humans</i> (2015–18)</p> <p>Channel 4, UK</p> <p>3 seasons</p> <p>Based on <i>Real Humans</i> (<i>Äkta människor</i>), Sweden, 2012–14</p>	<p>Near-future</p> <p>UK society where 'synths' perform different service jobs</p>	<p>David Elster – creator of synths, deceased</p> <p>Leo Elster – programmer, cyborg (half-synth), David's son</p> <p>Mattie Hawkins – teenager programming prodigy from the family owning 'Anita' synth</p> <p>Dr Athena Morrow – AI scientist, develops a virtual AI 'V' based on her dead daughter's memories</p>	<p>Synthetics or 'synths' – moderately intelligent androids performing various service work in the society (Odi, Peter, Hester)</p> <p>Conscious synths – androids with additional consciousness code (Mia/Anita, Niska, Fred, Max, Beatrice/Karen)</p> <p>'V' – virtual AI program created by Dr Morrow</p>	<p>Asimov's Laws of Robotics</p> <p>Singularity</p>
<p><i>Westworld</i> (2016–)</p> <p>HBO, USA</p>	<p>Undefined future</p>	<p>Robert Ford – lead developer in Delos parks</p>	<p>'Hosts' – complex programmed androids populating historical theme parks as characters (Dolores, Maeve) or posing as humans (Bernard, Ashley)</p>	<p>Data privacy</p>

Seasons 1–3 (ongoing)	Isolated Delos island – historical theme parks (Seasons 1–2) Human world with advanced technology (Season 3)	Arnold – lead developer in Delos, the assumed creator of consciousness in Dolores, deceased Engerraud Serac – creator and manager of Rehoboam James Delos – owner of Delos Inc. William or Man in Black – son-in-law of James Delos, the living owner of Delos parks	AI system(s) running prediction algorithms governing human society – Rehoboam, Solomon	Internet of Things
<i>Are You Human?</i> (<i>Neodo Inganini</i> , 2018) Netflix, South Korea 1 season	Contemporary world South Korea and Europe	Nam Shin – human boy/man, corporate businessman Oh Ro Ra – AI developer, mother of Nam Shin Kang So-Bong – bodyguard of Nam Shin (III)	Nam Shin III – an android with AI	Data privacy
<i>Better than Us</i> (<i>Лучше, чем люди</i> , 2018) Netflix, Russia 1 season	Near-future (2029) Russia	Sonia – little girl who finds Arisa Egor – Sonia’s brother Georgy – father of Sonia and Egor Alla – Georgy’s separated wife, has custody of the children	Arisa – an android with advanced emotional programming, bonds with Sonia and her family	Asimov’s Laws of Robotics Lethal Autonomous Weapons (LAWs)

Table 1. Analysed science fiction films and their parameters

2. Science fiction monsters: Reflections on identity or technology?

In anthropology, literature and culture studies, multiple works offer analyses of machine monsters in science fiction literature (Bing 1992; Willis 2006) and films (Schelde 1993; Wood 2002), critical accounts of the myth of the technological sublime (Leonard 2003; Noble 1997; Geraci 2008, 2012), comparative accounts between technoscientific realities and futuristic or science-fictional imaginaries (Dinello 2005; Cave et al. 2018) as well as the genealogies of human–machine comparison (Thomson 2010; Mayor 2018). The stereotyping of technology has also been studied in anime (Napier 2001; Papp 2011) and there are several studies about the image of the scientist in fiction (Hirsch 1958; Tudor 1989; Haynes 1994, 2003, 2017; Després 2012).

The correspondence between fictional characters and storylines and real-world technologies and expectations of future (scientific) developments is addressed in research by Luke Goode, who traces the depictions of apocalyptic AI and machine uprising in science fiction literature back to the early 20th century (Goode 2018, 187). He also points out that the first of such stories (Karel Capek's play *R.U.R.*, 1921 and the film *Metropolis*, 1927) were meant as 'sociological commentaries on contemporary society' (Goode 2018, 188). This can be read as criticism of the industrialisation and Taylorist organisational model that treated industrial workers as slaves or mechanical parts of a huge machine. In order to replace the human worker with a robot, the work first needs to be mechanised. The development of AI as a concept and technology from the 1950s facilitated ongoing fictional imaginaries of what Isaac Asimov later named the 'Frankenstein complex' (see Goode 2018; McCauley 2007)—essentially, the fear of human-independent machine evolution. 'Yet such stories can and do serve also as more direct speculations and provocations around the potential future scenarios opened up by real-world advances in A.I., something underscored by the prevalent use of these SF texts as reference points and metaphors in non-fictional coverage' (Goode 2018, 198). Overall, Goode makes a convincing argument for why science fiction should be considered as part of the discourse on technology.

On multiple occasions, trans- and posthuman characters in science fiction have been analysed as experiments with human identity. For Ricoeur, the entire problem of science fiction (as technological fiction) is reduced to 'the mediation of identity through sameness' (Rasmussen 1995, 166), that is, *idem* — the static, disembodied self at the heart of the continental philosophy of identity. The 'reflexivity without selfhood' overlooks the temporal dimension of a person — *ipse*, the lived, embodied self (Rasmussen 1995, 162–3).

Ricoeur criticises science-fictional thought experiments for considering the brain as a substitute for a person, thus reducing the entire human identity to the totality of one's neural structure (Ricoeur 1990, 178). As an alternative, he proposes the concept of *narrative identity*. This is expressed through the dialectic of *idem* and *ipse* — the conversation between the static self and its

movement through time. However, tying these together turns the identity into a fiction-like narrative (Ricoeur 1990; Rasmussen 1995). Thus, identities are inherently intertwined with narrativity. This explains why it is so easy to borrow a sense of self from a narrated text as well as to attribute a narrated identity to an Other perceived as a possible person, such as an anthropomorphic robot.

Identity is constructed through alterity, in opposing the Self to an Other. Very often — when the self-description is lacking or missing — both categories are constructed simultaneously, dialogically. For Andreea Ritivoi, ‘narratives [about self-identity] tend to draw upon master plots that act as repositories of normality’ (Ritivoi 2009, 36). These repositories of normality are the social norms of human behaviour, and they need to be borrowed from the ontologies of the real-world societies because the observed fictional sociotopes are marked as close to the present spacetime. Thereby, science fiction narratives come to define what is human and what is socially normal by marking the abnormal, non-human or less-than-human behaviour in the storylines.

In conclusion, previous research on the intersection of science fiction and technology supports the consideration of science fiction as a necessary part of technological discourse, even when the meanings of science-fictional elements need to be first located within the domains of human identity and social issues. The two domains have developed in dialogue and continue to be linked in research and media. Secondly, the concept of narrative identity explains how a one-sided conceptualisation of identity as *idem*, common to science fiction, is problematically Cartesian and neglects the embodiment and anchoring of the identity in time (or separates the Self from spacetime). Identity is predominantly of a narrative nature and is constructed on the Self–Other scale, which helps map the repositories of normality for both human and machine as described in the analysed films. And because identity is a narrative construction, fiction naturally becomes intertwined with reality when humans make sense of the world or themselves in any manner.

3. Fictional robots as signifiers of scientists and their values

Roslynn Haynes (1994, 2003, 2017) analyses the role of the scientist in Western culture, the stereotypes attributed in fiction and how these reflect the expectations for scientists to solve societal problems. In the observed fiction, as in the real world, there is a constructive agency behind every intelligent machine: the creator, the engineer, the scientist. Haynes’ (1994) extensive analysis of fictional texts, looking at the stereotypes of the scientists, overviews the creation of monsters and robots. She remarks that robots in literature ‘have been particularly important signifiers [...] of the values and attitudes ascribed to their creators’ (Haynes 1994, 242). That is, the literary descriptions of robots in their entirety refer to the scientist characters behind them. In Haynes’ view, the

scientists are described in overwhelmingly negative terms, presuming their inabilities in addressing the societal problems both in real life and in fiction (Haynes 2003; see also Hirsch 1958; Mead and Metraux 1957; Tudor 1989). Consequently, 'the master narrative of the scientist is of an evil maniac and a dangerous man. This simplification underlies our contemporary mythology of knowledge' (Haynes 2003, 244).

Each of the observed films features one or several scientists or engineers (the makers) who have different motivations for creating the robots, most commonly the wish to represent or replace a dead, or otherwise unavailable, loved one. In *Humans*, David Elster has secretly resurrected his son Leo as half-synthetic (a cyborg) and created conscious, robot companions for him, as well as a robot in the likeness of his wife and Leo's mother, Beatrice, who committed suicide. In another synthetics production company, Dr Athena Morrow is secretly working on an AI she calls 'V', who is constructed from the replicated consciousness and memories of Morrow's dead daughter Virginia. The scientist works to build or find a suitable body for V so that she can reincarnate her daughter. One of the secret purposes of the Delos theme parks in *Westworld* is to produce a functioning host copy of their deceased owner James Delos. In *Are You Human?*, scientist Oh Ro-Ra makes AI robots of different 'ages' to replace her son Nam Shin from whom she is separated – her father-in-law, the boy's grandfather and a president of a technology company, has taken the child in order to raise him as the next leader of his corporation. In *Better than Us*, Arisa's original purpose is to fill the role of a mother in the context of China (the storyline reports a lack of marriageable women there).

For Haynes, the stereotypical scientists are male, lonely and isolated in their labs, both in fiction and in studies of real-world attitudes (Haynes 1994, 1; see also Mead and Metraux 1957). Most of the original creators of the robots in the observed series conform to Haynes' stereotype: Robert Ford; Engerraud Serac; David Elster. The storylines also make space for female scientists Oh Ro-Ra and Athena Morrow, as well as the clever teenage girl Mattie (*Humans*) who hacks synthetics and eventually releases the consciousness code.

The concept of the scientist further blurs and transgresses the human–non-human border in the idea of 'self-replicating AI', apparent in Leo fixing the programming of synths in *Humans*, or Bernard, Dolores and Maeve of *Westworld* having the skills to make, condition and even control other hosts. The storylines touch upon everyday problems in science and research, such as the necessities and motivations for funding. James Delos is interested in funding the parks not only for their potential amusement value but also for data, covertly gathered from all park visitors, that is expected to give insights into the secrets of the human mind so that the mind can be reincarnated in a host body – the promise of immortality. Athena Morrow secretly uses the resources of her employer to host and develop a personal AI project.

Generally, the developments of the scientists rely heavily on the idea of mind–body dualism (following Ricoeur's critique of science fiction for focus-

ing only on the *idem* part of identity, and the examples analysed). Consequently, science fiction also functions as a reflection on the role of science in society, further reinforcing the comparison between fictional and real-life technoscience. The stereotypes of fictional scientists resemble real-world ones and vice versa. Diverging from Haynes' lonely male stereotype, the series introduce some female scientists; however, they are still lonely in their laboratories and doing secret alchemy behind society's back. Additionally, the most innovative science is very secretive in the stories (for example, James Delos' host copy and Rehoboam).

4. Identity, normality, humanity: Oppositional construction of Self and treatment of Other

The following section observes how the characters and identities of the robots are constantly expressed in juxtaposition with the behaviour of human character(s). Certain characteristics are deemed appropriate for a human or a machine, respectively, but the line between the two is blurred by attributing the features to one or the other alike. Three types of issue become apparent in the narratives: the possession of emotions as a distinctive characteristic of human beings, intelligence as allowing for advanced decision-making, and the role of the body as the carrier for the mind which enforces the dualism. Taken together, these aspects also reflect the depiction of the wider problem of consciousness in the narratives, describing certain behavioural and introspective qualities ascribed to the human as a conscious being.

4.1 Emotion as the essential difference between human and non-human

Human identity is constructed as an opposition to the Other. For Hellstrand, 'emotional or affective capacity is at the heart of the ontological divide between humans and non-humans' (2015, 89). In the context of artificial characters, acquiring affect becomes the first example to demonstrate their transgression of the human-machine divide and excuse the emergence of 'consciousness' in the machine. Concerning the repositories of normality for either category, preferences are made clear: emotions are human weakness, and rationality is machine strength. In all storylines, the 'conscious robot' characters immediately start to violate this rule.

Emotions form a large part of the character development in the narratives. Maeve's entire *raison d'être* after gaining self-awareness hinges on her trying to locate the daughter from her previous storyline – not a very rational behaviour considering that the daughter-host has long since been assigned a new 'mother' and has no recollection of Maeve. Such affectionate obsession makes Maeve vulnerable to manipulation – Serac is able to enlist Maeve's help in

fighting Dolores by promising to reunite her with the daughter in the digital sublime in return. Dolores, in turn, is driven entirely by her cold, detached hatred of humankind, fuelled by thirty years of physical and emotional abuse at the hands of William, the Man in Black. Arisa's psychopathic behaviour in killing humans who verbally or behaviourally threaten her adopted family is based on her 'advanced emotion programming' that also makes her extremely protective of the little girl with whom she has bonded.

As an overall impression, the ability to read and display emotions makes a robot more accepted by humans. On the other hand, actually *having* emotions is perceived as a vulnerability, leading to judgement errors, as the rational mind is seen as the robot's advantage over the human. Feelings also imply trust – the robots sometimes need to collaborate with humans in order to achieve their goals or tasks; putting their trust in others adds to their vulnerability. When Dolores brings the 'pearls' of host minds from the island to the real world for her takeover plan, she makes copies of herself in a true sense of rationality: she trusts only versions of herself to remain loyal to her.

At the same time, certain emotions are portrayed as beneficial or positive. Mia empathises with Laura's worries about her shortcomings as a mother, and her decisions demonstrate how much she cares about humans and other synthetics. Where a human character has acted cold, detached or psychopathic, the robot copy may be discovered because of uncharacteristically empathetic behaviour. When the host posing as Delos board member Charlotte becomes attached to her human family, it is perceived as unusual and Serac exposes her fraud. The kind and benevolent behaviour of Nam Shin III is perceived as a significant improvement in character over the unhinged, human original. Therefore, the grandfather decides to leave his company in the hands of the robot, instead of his real grandson. This choice is also influenced by the robot's perceived rationality: Nam Shin III makes better decisions than a human because he does not have 'complicated emotions'.

The transgressively enacted emotional capacity of the robots shows how their signified establishes itself in the referential domain of human identity and social problems, which focuses on the social Other, someone different from the cultural norm. Blurred human-machine boundaries enable seeing the Other as less-than-human or a machine, excusing treating them abusively. In their behavioural aspects, some of the artificial characters mimic socially awkward or borderline autistic human behaviour, thus 'normalising' the treatment of similar groups as less-than-human or comparing them to machines in the real world.

4.2 Body as the Cartesian vehicle for mind

The powers and affordances of the vulnerable and fastidious human body are overestimated even in the most realistic action movies, for instance when the

hero keeps fighting while wounded and delirious. The bodies are central in appearance but stripped of their daily needs and functions. Thus, the body in fiction does not necessarily represent the actual human body but becomes a vehicle for the character's image, identity and intentionality. This reinforces the idea of *idem*, the timeless, disembodied self. Superhuman and robot narratives take this inherent disregard for functional embodiment even further: the body is reduced to an insignificant shell for the mind as the 'centre of operations' and can be endlessly repaired or replaced. Maeve, who in the park is regularly shot in the stomach, 'wakes up' backstage and fixes herself. Dolores receives several bullet wounds in the abdomen when stepping between a human and a machine gun, after which she simply shrugs and zips up her jacket to avoid further spooking the clueless human with several holes in her stomach. While damage to some body areas may be incapacitating for the robot, most of the body is treated as an empty carcass that can be damaged or replaced with no influence on the robot's perception or behaviour – except when such vulnerability is convenient for the storyline.

The machine-nature of the robot body is revealed in its consumption of electricity similarly to a common household device, or in its relation to server-hosted data. With few exceptions, the robots need daily or nightly recharging, like most battery-operated devices. The amount of energy needed to run an AI is generally not elaborated upon, but the analytical software for Nam Shin III is hosted in an enormous server facility, for example.

The robots in fiction seem to have human-like bodies primarily for camouflage and social engineering. For this, the robots use different tricks to pass for biological bodies. In order to pass as a human, Beatrice collects food and drink in an esophagus bag, empties it regularly and secretly charges at home. Exceptionally, *Westworld* hosts do not charge; rather, they can drink and eat alongside humans. Their intestinal functions are not explained, however. It is presumed, regarding digestion processes, that they function like a human, as Dolores or Maeve never run to throw up after eating in the human world. However, when Dolores is installed in her last back-up body, it starts with a see-through steel carcass that she covers with skin-like body surface pieces.

The described invulnerability of the robot body connects with the real-world discussions of the transhumanist concept of mind-uploading. Building intelligent machines is often shown as a way to overcome mortality, and AI technologies as a field for transhumanist experiments. In *Westworld*, the host copy of James Delos retains certain memories but never quite meets the criteria for an accurate replication and is thus destroyed and recreated over and over again.

A significant aspect of embodiment that almost never escapes attention in humanoid robot bodies is the aspect of sexuality. Only in the Korean series is it never explicitly discussed, but the robot Nam Shin III has a (platonic) relationship with his female bodyguard Kang So-Bong who is aware of his robot nature. Elsewhere, implicitly or explicitly, all robots are sex bots – this is one

of their main intended uses and affordances, whatever their camouflaging or consciousness status. Bernard has repeated intimate relations with a co-worker while both seem unaware that Bernard is actually a host. (Generally, all *Westworld* park visitors can engage in sex with hosts if they wish.) In *Humans*, Beatrice has sex with a human colleague to whom she only later reveals that she is a (conscious) synth. Niska has a sexual relationship with an unsuspecting human. Earlier in the series, she briefly camouflages herself in a prostitution club populated by synths, pretending to be unconscious. Arisa is made to be an image of an 'ideal wife' in every sense of it, from being a fiercely protective mother figure and an excellent cook to being passionately willing to cater to the carnal needs of the man she deems to be her 'husband'.

Despite the steel, wires and programming, none of the robots passing for humans are exposed because of intimate body contact. Thus, the composition and the mass of the robot body remain a mystery: it can crush walls, survive shootings and car accidents, and be a gentle lover. These robots are not being recognised as heavy, metallic, mechanical constructs when intimately lying with a human character.

4.3 Enhanced decision-making as a problem of semiotic choice

Transgression to consciousness in robots leads to them making (more) independent decisions and choices in the narratives. Overall, enhanced decision-making is the second example of identity transgression made by the robots. To a large extent, it is explained by their immanent access to the digital information sphere. It could be argued that, despite the astonishing complexity, the process of inference remains equal to data processing. However, there are elements that imply what can only be explained as semiotic activity – the characters necessarily attribute meaning to the data available, engaging in semiosis as 'the process [of] making choices between simultaneously provided options' (Kull 2018, 452). Behaviourally, they seem to be choosing between contradictory possibilities in a manner that cannot be explained with rationality or logic. The complex, analytical behaviour and choices made by the robots rather represent data salience – semiosis presumes the ability to distinguish (prioritise), choose and process the information relevant and necessary to the situation at hand, and leaves aside all other information. For instance, Arisa displays impressive inference skills when hiding the jacket that would implicate Georgy in arson. She reads very subtle cues even before Georgy is aware of the trouble, so that when a policeman suddenly shows up to search the apartment, the evidence has already been removed. Arisa's reasoning implies that she is aware of all environmental inputs and is able to prioritise and assign meaning to them beyond their immediate effects. In Lotmanian terms, Arisa skilfully reads the 'semiotic space [...] as the multi-layered intersection of various texts' (Lotman 2009, 23).

The problem is that the character's ability to accurately predict the outcome of a series of seemingly insignificant choices or actions only has meaning and value within the fictional sociotope; thus, the character simply becomes a rhetorical device for entertainment purposes. Extra-textually, predicting the future in such detail is, by definition, impossible. In Lotman's concepts, the moment of unpredictability offers 'a specific collection of equally probable possibilities from which only one may be realised' (Lotman 2009, 123). At the same time, it is not possible to precisely predict every following moment (ibid.). It is only retrospectively that the passed sequence of events becomes understood as the only possible course of events. This is a general characteristic of the dynamics of culture and society.

The cases of fictional murder provide examples for assessing the semiotic level in decision-making. Arisa's decision to kill someone for being a threat to her 'family' usually follows a verbal or physical threat toward the family members. At times, Arisa simply seems to take words too literally, but she also recognises implied or non-fatal threats as explained in the case of her hiding Georgy's jacket.

Hester's impulse to kill her human co-workers in the factory is shown as a complex series of semiotic choices that include 1) experiencing certain humans behaving in a destructive way towards her body, 2) recognising this behaviour as abusive mistreatment, 3) connecting this conclusion with a sense of her self (taking it personally) and 4) assuming human or equal-to-human identity with the entitlement and expectation of having her body treated in a respectful way. The synth body, as well as its programming, is fairly invulnerable, being repairable, replaceable and without any 'pain' sensation, of which the pre-conscious synthetics are well 'aware'. Additionally, the conscious synths are able to turn off their sensations by choice – Niska explains to Leo why she chooses not to, while working at a sex club alongside ordinary synthetics. Then, Niska kills a club visitor who asks her to pretend to be a child when playing violent games with her. In a later conversation with Elster's former colleague, the man remarks upon hearing Niska's existential age of five years: 'Oh, you're a child!' and the synth answers ominously: 'Yes, but he didn't always treat me as one.' It is implied that the history of sexual abuse inflicted upon a 'child mind' provokes Niska's choice to eliminate the assumed paedophile. Similarly, Dolores' revengeful monologues and misanthropic choices are tied to her 'memories' of decades of abuse at the hands of park visitors in her role as an innocent ranger's daughter. But later, Dolores' detailed plan of revenge upon the human world implies an understanding of ideologies and meanings, as well as teleology and a subversion capacity to levels not explainable without semiotic choice.

Killing as a response to abuse presumes understanding different layers of meanings – social norms and a level of self-awareness and self-confidence in order to act out against the perceived injustice. In many of the scenes, the robot has no rational reason to perceive anything as injustice. Such situations

are well portrayed by the peacefulness of Nam Shin III in the face of abusive or neglectful behaviour – he is at all times aware of being a robot and he does not display any personal ambition or envy when the mother decisively prefers her human son. The hosts and synths, on the contrary, go on killing sprees, or walk around aimlessly, after adding consciousness to their make-up – as if all their previously stacked digital ‘memories’ suddenly acquire meaning that they need to contemplate.

The incredible capacity attributed to AI protagonists to predict and orchestrate the desirable result of any action illustrates the trust ascribed to computational models in general. Dolores has orchestrated and prepared her world takeover in admirable detail, having acquired the funds and developed workspaces for creating host agents and using them to replace people in positions of power. Opposite her, there is Rehoboam – a data-based AI system developed by reclusive businessman Engerraud Serac. Rehoboam predicts and secretly runs the entire human world, telling people what kinds of future they have and directing them to actions via mobile applications. Dolores repeatedly compares this set-up to the pre-programmed storylines of the hosts in the park. However, Rehoboam’s system only works owing to the fact that Serac has removed or reconditioned all deviant people who do not comply with Rehoboam’s predictions and directives, thus removing the possibility for unpredictability.

In conclusion, the enhanced information-processing capabilities of robot characters compared to the humans amount to what could be described as accelerated semiosis – the process of ascribing meaning to or deriving meaning from the information or data processed – and consequently making fast decisions based on available cues. There is a difference between information processing and semiosis, and the robots in the examples seem to engage in the action of meaning-making rather than simple data processing. Such a capacity, often associated with human-level intelligence, seems to be a desirable property in the intelligent machine, promising the delegation and acceleration of semiotic activities, which is a possible motivation for real-life AI development. Whether this is at all possible beyond the fictional sociotopes remains a question of interest. The utter humanness of body functions combined with emotions and semiotic decision-making in the robots demonstrates how the fictional AI rather signifies the human Other and the pains of integrating and accepting the Other in culture, as well as addressing the issues of abuse, consent, objectification or normative behaviour.

5. Conclusion

The extra-textual domain of reference for the fictional robot signifier is composite and complex, changing with narrative situations and taking on different meanings at different moments. The signified shifts from general discussion

on human identity, values and relationships to real-world technoscientific details with their societal implications. The composite signified for the fictional, embodied robot is almost always human identity in its existential and social complexity. The artificial characters' behaviour models that of real-world humans. The way in which the robots' analytical skills are modelled refers either to in-depth semiotic activity (attributing meaning, prioritising informational units and making choices) or to fictitious abilities (for example, unusual predictive power).

Regarding the fictional model's level of correspondence to real-world technological developments, the futuristic descriptions remain strictly in the realm of fiction. When looking at situational details, relations and interactions, the narratives touch upon certain technoscientific issues such as data privacy, the vulnerabilities of technology or the ethics of algorithmic decision-making. The overall referential focus of the relationships remains on human–human interaction or addresses the dehumanisation of the Other in society. The problems of embodied identity and the function of the body are reduced to a version of Cartesian dualism where the body remains a vehicle for the mind while its functional and existential needs are overlooked. The narratives reinforce the dualist understanding of human identity and self as only a virtual, disembodied construct.

Aspects of human identity and technoscience can become conflated when overly humanised AI characters are taken for both humans and machines, as prescribed in Asimov's utopical robot stories (see Haynes 1994, 242). In literary worlds, purely artificial creatures are part of a human–non-human spectrum containing monsters, cyborgs and machines alike, as long as their appearance or reasoning is described in remotely anthropomorphic terms. From a functional perspective (that is, concerning the enhanced abilities of the fictional characters), this spectrum also includes all superhuman and supernatural beings. The total realm of reference for the fictional robot signifier contains elements of real-world technology (extra-textual material reality) as well as human identity and social problems (extra-textual purely semiotic reality). The latter forms a self-referential identity discourse. The boundaries between these segments are blurred. In real-world discourse, there is uncertainty and fragmented knowledge concerning current technological developments as well as their scientific significance. Considering also the superficial understanding of the functioning of human identity, societies and cultures, the assumptions appearing in technological discourse readily blur the boundary between the man and the machine as easily as happens in fiction.

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