Helen A'Loy *and other tales of female automata: a gendered reading of the narratives of hopes and fears of intelligent machines and artificial intelligence*
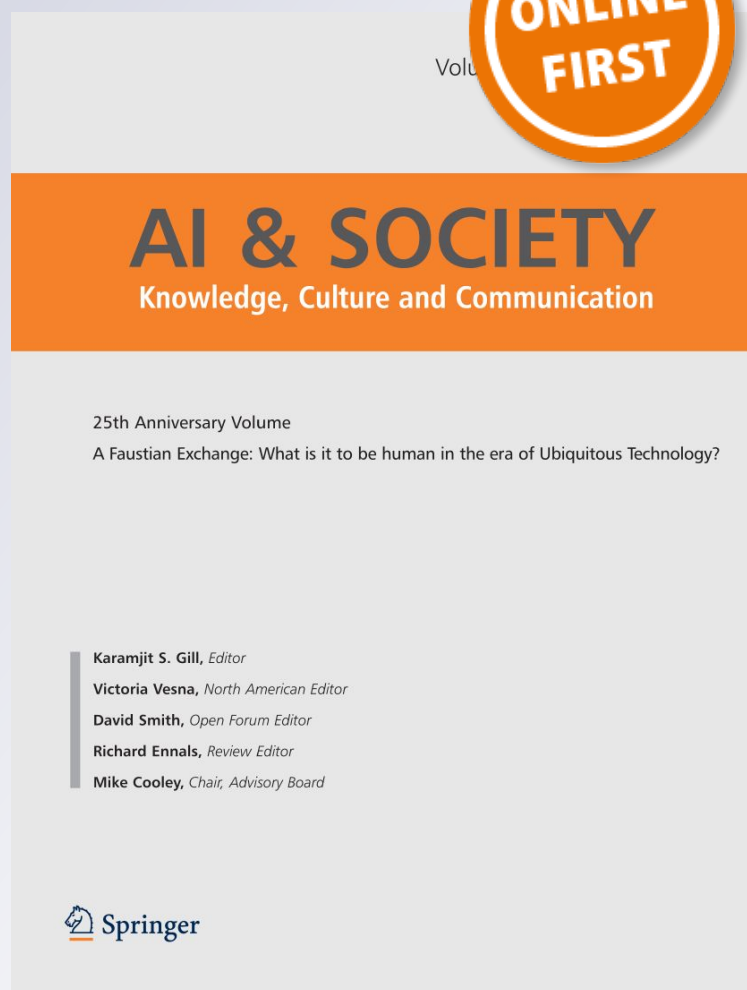
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Helen A'Loy and other tales of female automata: a gendered reading of the narratives of hopes and fears of intelligent machines and artificial intelligence

Rachel Adams[1,2]

Abstract

The imaginative context in which artificial intelligence (AI) is embedded remains a crucial touchstone from which to understand and critique both the histories and prospective futures of an AI-driven world. A recent article from Cave and Dihal (Nat Mach Intell 1:74–78, 2019) sets out a narrative schema of four hopes and four corresponding fears associated with intelligent machines and AI. This article seeks to respond to the work of Cave and Dihal by presenting a gendered reading of this schema of hopes and fears. I offer a brief genealogy of narratives which feature female automata, before turning to examine how gendered technology today—particularly AI assistants like Siri and Alexa—reproduces the historical narratives associated with intelligent machines in new ways. Through a gendered reading of the hopes and fears associated with AI, two key responses arise. First, that the affective reactions to intelligent machines cannot be readily separated where such machines are gendered female. And second, that the gendering of AI technologies today can be understood as an attempt to reconcile the opposing hopes and fears AI produces, and that this reconciliation is based on the association of such technologies with traditional notions of femininity. Critically, a gendered reading enables us to problematize the narratives associated with AI and expose the power asymmetries that lie within, and the technologies which arise out of, such narratives.

Keywords Artificial intelligence · Female automata · Narratives · Apple · Gender · AI assistants

1 Introduction

Artificial intelligence (AI) is an idea and practice that cannot be readily divorced from its imaginative context. It is in part for this reason that scholarship aimed at articulating and critiquing the narratives in which ideas and practices of AI are embedded, provide such critical understandings of both the history and imagined future of a world driven by AI. One such work, entitled 'Hopes and fears for intelligent machines in fiction and reality', was recently published by Cave and Dihal (2019). The article offers a compelling schema of the hopes and fears associated with intelligent machines, as evident in its wide scope of historical narratives. This schema

is predicated on an arrangement of four hopes (immortality, ease, gratification and dominance) within which four corresponding fears (inhumanity, obsolescence, alienation and uprising) arise. Across this arrangement underlies the aspect of control, such that where there is a loss of human control, the fear associated with AI, or intelligent machines, rises (Cave and Dihal 2019). This article seeks to respond to the schema of hopes and fears set out by Cave and Dihal with a gendered reading of AI narratives, that is, a reading which critiques the representations of gender in AI narratives as well as where intelligent machines are themselves figured as women. In the first half of this article, I establish a genealogy (Foucault 1978) of fictional narratives of female automata before turning, in the second half, to critique the gendered narratives I discern to be apparent in AI technologies today that are presented as female, including Apple's Siri and Amazon's Alexa. This gendered reading surfaces two key responses to the hopes and fears schema. First, that the hopes and fears associated with gendered intelligent machines cannot be readily separated from each other. Instead, domination, ease, gratification and immortality (or

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health and well-being) manifest collectively in the male desire for what a female (robot) should be and do; while the fears of inhumanity, obsolescence, alienation and uprising arise within the context of different hopes or desires, such as uprising together with gratification. And second, that the gendering of AI technologies, and particularly Siri and Alexa, can be understood as an attempt to mediate the unstable dichotomy between the associated hopes and fears: by gendering a machine or technology as female, the fears associated with intelligent machines can be, supposedly, assuaged. This second narrative ploy rests on the popularisation of female automata—as opposed to male automata—which not only manifests in recent popular culture, such as Spike Jonze's *Her*, but also guides the commercial design choices of AI producers like Apple and Amazon.

2 A brief genealogy of female automata

Historically, Western narratives of making life—whether through mechanical or magical endeavours (Bell 2018)—are oftentimes imbued with fantasies of gender; from Ovid's Pygmalion who, frustrated with the inadequacies of women, 'sculpted a beautiful ivory image of a perfect woman' with whom he fell in love (Wosk 2015, 9; see also Dillon forthcoming), to Mary Shelley's *Frankenstein*, which has been read by some scholars as a critique of the male fantasy to create a world without women (Mellor 1988; London 1993). Indeed, unlike in other cultural traditions where robots or automata can appear non-binary, without a distinguishable gender,[1] Western accounts tend to depict automata created in the image of humans and, within certain narrative contexts, as women. These artificial women, as will be discussed, weld together many of what Cave and Dihal discern to be the key hopes associated with intelligent machines into the fantasy of the perfect woman: beautiful and alluring, they offer gratification to male sexual desire; submissive to their user's command and design, they offer dominance for those who 'use' them; constructed to work and—for female automata—to undertake domestic labour, they offer ease; and, as they do all these things and (supposedly) phatically cater for the needs and welfare of their (male) 'user', they bestow greater

well-being and longevity. Yet, as the trope develops over time, and new technologies forge new imaginative possibilities, the archetypical female automaton begins to incite feelings of unease and anxiety, culminating in accounts such as Alex Garland's *Ex Machina* and Spike Jonze's *Her*. We will trace this genealogy below.

2.1 The form of the perfect woman

Within Western narratives of anthropomorphic automata, the trope of the young and beautiful doll-like woman—'my fair lady'—with whom men unwittingly fall in love, has a particularly long history. Pygmalion and his sculpture, as narrated in Ovid's *Metamorphoses*, is a key example here, oft quoted as one of the world's earliest figures of an automaton (Dillon forthcoming; Bell 2018; Shanken 2005, 45). During the early and then late modern period, and as developments in mechanical technologies began to influence afresh cultural imagination, the trope of the doll-like female automaton took on new associations. For Andrea Haslanger, there was a figurative affinity established in the literature and culture between femininity and automata in the late eighteenth century with, she writes, 'automata increasingly […] symboliz[ing female] irrationality and failed autonomy' (2014, 789). A later manifestation is that of Olimpia in ETA Hoffman's *The Sandman* (2016), published in Germany in 1816, and now a canonical reference in the history of female automata. In this short tale, the male protagonist, Nathanael, falls in love with Olimpia, who is presented as the daughter of his physics professor Spalanzani. At first, Nathanael is unaware that Olimpia is an automaton, and describes her as having 'perfect proportions' and an 'angelically beautiful face' (Hoffman 2016, 8). Nathanael is transfixed by her beauty and feminine poise, her rhythmic movements in dance, and her 'almost too brilliant' voice in song (Hoffman 2016, 15). When he addresses her, she responds only by uttering 'Ah! Ah!', which he interprets as 'genuine hieroglyphics of the inner world of Love' (Hoffman 2016, 16, 17). Within the story, Nathanael figures as the archetypal male and Olimpia as the perfected subject of his heterosexual desire. With her beauty, feminine grace and faculty to simply 'a-ha' his every word (Benyamini 2016, 75), she offers the fulfilment of traditional heterosexual want. The story, which unfolds with Nathanael's descent into madness as he witnesses Olimpia anatomized and taken apart by the Sandman (who is at once her creator), became the central exemplar of the uncanny for Ernst Jentsch and later, Sigmund Freud, as the male confrontation with the other (whether female or machine).[2]

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[1] Bell discusses the Japanese Kaurri and how these were not designed to look human-like, and were therefore gender-less (2018, 28). My own forthcoming work explores African ontologies and epistemologies of artificial intelligence, broadly conceived. Within African accounts of intelligent beings that exist within liminal spaces of the human, is the example of the Igbo ogbanje—a changeling child who transcends through gendered bodies. This theme is discussed in Akwaeke Emezi's novel *Freshwater*, 2018. Another example, also from the Nigerian Igbo, is the egwugwu intelligent puppets: majestic human-like constructs, but without a distinct gender as such. The egwugwu feature in Chinua Achebe's *Things Fall Apart* (1958).

[2] There is a long tradition of associating automata with the uncanny, and both Freudian and Lacanian readings of the uncanny are distinctly gendered. However, it is beyond the scope of this article to

Throughout the nineteenth century, Olimpia became a well-known cultural reference, appearing in the ballet *Coppélia* in the 1870s, and Jacques Offenbach's opera, *The Tales of Hoffman*, which premiered in Paris in 1881. Towards the end of the nineteenth century—a century that also saw the publication of Shelley's *Frankenstein* in 1818—the trope of the submissive female automaton appears in more modern form in Auguste Villiers de l'Isle-Adam's *L'Ève Future* (*The Future Eve* or *Tomorrow's Eve* 2001), first published in 1886. Inspired by the then recent discovery of electricity, the novel features another young man, Ewald, who, disappointed by his real-life fiancée, seeks out the help of his friend—an inventor aptly named Thomas Edison. Edison proposes to create for Ewald a machine-woman in the image of Ewald's fiancée. The novel suggests that this new creature, named Hadaly (meaning 'perfection' in Iranian Gasché 2011, 126), will be a more perfect form of a natural woman, and critiques the supposed artificiality of women who adorn wigs, metal-corsets and make-up (de l'Isle-Adam 2001). Hadaly, in contrast, is portrayed as pure and heavenly, and again the embodiment of male desire: 'I shall be the woman of your dreams—all that you would have me be' (de l'Isle-Adam 2001, 89). Her pre-recorded speech, which was inspired by the real Thomas Edison's phonographic doll (Wosk 1993; Picker 2015), is generated from several hours of phonographic recordings of white upper-class women reading classic literature (de l'Isle-Adam 2001). The reader witnesses Ewald becoming both beguiled by and suspicious of Hadaly's speech, noting that his frustration with his fiancée was in part due to her limitations in conversation and intelligence. Ultimately, it is through the power of her speech that Hadaly persuades Ewald of their true bond, while the reader remains sceptical (de l'Isle-Adam 2001). This scepticism continues from the earlier cynicism to which automata were—and ultimately still are—received (as a recent fictional example see Ian McEwan's *Machines Like Me* 2019). Haslanger describes how the uneven reception of automata became utilised as a narrative device in fiction in the eighteenth century, realised through the symbolic association between automata and femininity as another source of sociocultural wariness (2014).

At the turn of the twentieth century, Ernest Edward Kellett, an English poet and translator, published a short story. It was his only fictional work (Klass 1982, 77) and possibly written as a response to l'Isle-Adam's *L'Ève Future*, with which Kellett is likely to have been familiar. The story, originally titled 'The New Frankenstein' and later retitled 'The Lady Automaton' (1901), tells of an inventor, Arthur Moore, who develops a phonographic machine so sophisticated that, instead of echoing the words spoken to it, responds with its own appropriate answers. The 'anti-phonographic' (Kellett 1901) is housed within a female automaton of Moore's creation, named Amelia. The machine is spoken of as 'a society lady' and again fulfils all the typical characteristics of the ideal and gratifying female automaton. Amelia is described as 'the most beautiful girl I had ever seen; a creature with fair hair, bright eyes, and a doll-like childishness of expression' (Kellett 1901). However, like Hadaly whose speech is both admired and questioned, Amelia's speech becomes a dividing device for the male characters of the story. On the one hand, Amelia is able to outwit her suitors, Calder and Burton, when questioned by the one about the advances of the other: 'she gave him an account that satisfied him, and sealed it with a smile and a kiss that made him feel like a villain for ever doubting her' (Kellett 1901). On the other hand, the narrator and his rival (and thus intellectual equal), Sir John Bolas, are apprehensive of Amelia on account of the mechanical nature of her speech:

> There was a sameness, an artificiality, about her which puzzled and alarmed me. To the same question she always and inevitably returned the same answer. On topics of the day she always had the same opinion, expressed in the same words. My rival, Sir John Bolas, who didn't like her for some reason or other, used to say that in her company he always felt as if he was talking to a very well-trained parrot. She uttered her opinions as if they had been learnt verbatim from someone else. (Kellett 1901).

It is precisely Amelia's intelligence—or lack thereof—which alerts the wiser male characters to her nature as automaton, suggesting that the infatuation of Calder and Burton is founded on her artificial beauty coupled with the supposedly feminine irrational mind.

'The Lady Automaton' and the other tales outlined above depict some of the early associations and responses to female automata. While these accounts give credence to the narrative dimension of gratification noted by Cave and Dihal, they reveal that the ancient dream of fashioning the perfect woman—whether from clay or electricity—holds a normative dimension with fixed ideas of how the perfect woman looks, behaves and, ultimately, speaks. Kellett does this critically. Bernard Shaw, too, explores this theme with effect in his play *Pygmalion*, considered by some scholars to have been directly influenced by 'The Lady Automaton' (Klass 1982). In addition, the narratives above begin to suggest the way in which ideas of dominance become coupled with gratification when it comes to female gendered automata. Within this context, dominance can be understood as the pairing of both male/user *dominance* with the *submission* of the female automaton. While Olimpia, without

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Footnote 2 (continued)

fully explore this theme in relation to the affective associations with AI and intelligent machines.

voice, is designed to offer absolute submission to her male user, Hadaly's submissiveness is a key aspect of what distinguishes her superiority to Ewald's fiancée: 'she will obey you better than the real woman' (de l'Ilse Adam 2001, 43). In both narratives, the submissiveness of the automaton to male dominance is central to their attractiveness and ability to provide (sexual) gratification to their user.

However, the theme of dominance takes on new dimensions within the genealogy of female automata during the twentieth century as ideas about robots and servitude become more popular. The critical juncture here is Karel Čapek's play *R.U.R.* (Rossum's Universal Robots), which premiered in Prague in 1921 and was adapted for the English stage in 1923. While the play has become notable for introducing the word 'robot' to the English lexicon—from the Czech 'robota' meaning forced labourer, it also marks a critical shift in the narrative portrayal of automata, from their representation as aesthetic objects or toys (such as the Mechanical Turk and the Digesting Duck (see here Haslanger 2014, 791)) to tools or labourers to be put to work. This narrative shift, from a Western perspective, reawakens ancient Hellenistic ideas about the ontology of automata as tools, such as the automata of Hephaestus who created guardians for his home (Homer 1980, 7.87) and, more famously, the Golden Tripods of Olympia (Cave and Dihal 2019), both described by Homer.

For the purposes of the discussion here, the shift towards automata as robots and labourers (re-)introduces the hope of ease (and ultimately the fear of obsolescence) that Cave and Dihal set out. Within the context of female automata, the hope that such models/technology will carry out work on your behalf manifests together with both gratification and dominance, insofar as putting a woman to work fulfils a male desire (gratification) to dominate over her. While, as I will discuss later, these associations form the basis of the characterisation and response to contemporary gendered AI, such as Siri and Alexa, an earlier narrative example is the short story by Lester Del Rey entitled 'Helen A'Loy' (1978). The story, published in the USA in 1938, is set in a speculative future where robots and rockets are commonplace. In a variation on the theme of the 'The Sandman', *The Future Eve*, and 'The Lady Automaton', the story features two men—Dave and Phil—who acquire a female robot, Helen. Helen replaces an earlier model, Lena, as their household robot. Her function is to clean and cook for the two men. Yet, like her mythical namesake Helen of Troy, Helen A'loy is beautiful, and by the end of the story, both men have fallen in love with her. But the story also reflects emerging cultural ideas about the home, technology and feminisation, evident in the marketing of home labour saving technologies as feminine. In a critical piece on the rationalisation of leisure, Marxist feminism and the fantasy of machine subordination, Lindsay Weinberg writes:

Marketing discourse promoted the management of domestic life as a "service" provided by a subordinate machine-other, oftentimes racialized and gendered female, concealing the intensification of domestic labor—the increased amount of time spent cleaning and the rising expectations of cleanliness that resulted from the introduction of domestic technologies (2019).

The normative effect of the association between technologies for the home and femininity are rising expectations of real women and their role in the home (Weinberg 2019). What this begins to point to is not just the question of *why* automata are gendered female or associated with femininity, but *when*, and to serve what narrative purpose. This question is considered in further detail in Sect. 3, which critiques the popularisation and commercialisation of female AI for the home.

2.2 'The haunting loveliness of the "automaton"'

While De Rey's short story neatly captures much of the affective associations towards female automata, and the conflation particularly of ease and gratification, the author does little to explore the negative associations with female automata which were coming to the fore in other narratives of that time. Fritz Lang's film *Metropolis*, released in 1927 and based on the book of the same name by his wife, Thea Von Harbou, provides a critical account of the rising fears associated with (female) automata. The film depicts a dystopian future city—Metropolis—where the elite live above ground in high rise buildings, while the working classes live below ground in deprivation and poverty. When the son of the city's leader sets out to assist the working classes to revolt by bonding with a leader among them—Maria, his father consults the inventor, Rotwang, in an effort to abort his son's plans. Rotwang fashions a robot in the image of Maria who is seductive (it performs a belly-dance for a group of enchanted men at a nightclub) and deceitful, ultimately leading the working classes to destroy the city. The film has been taken as a cultural example of the fear of robots rising against us (McCauley 2007). But given that the robot Maria is under the control of her creator, Rotwang, the fears associated with her have been critically recast as the male fear towards female sexuality. This is a point Andres Huyssen discusses in detail and which I will turn to below. To understand this more fully and from a less acknowledged perspective, we can observe the reaction of the male cast and production team to the transformation of the actress who plays Maria into robot-form. In the pamphlet of the original premier of the film in 1927 is an article entitled 'The Creation of an Artificial Human Being', written by Rudolph Klein-Rogge—the actor who plays Rotwang, describing the men's reaction to the moment of transformation:

The weird, incomprehensible smile, the slow irresistible movements, the basilisk motion of the head, the haunting loveliness of the "automaton", born in the minds of the scenarist and director, and fashioned by the property man, holds us all spell-bound. The stage workers, the electricians, otherwise never afraid, ready for a joke, never impressed with anything, seemed to feel some uneasiness (Kelin-Rogge 1927).

The transformation is tantalising. Those on set are both allured and seduced by the sinuous transfiguration of women into machine. At once there is a suggestion of something both highly desirable and completely other and strange, leaving the witnesses disquieted.

Despite the efforts that went into the production of *Metropolis*, the film was not well received (Walaszewski 2013, 105). Wells famously described the birth of the robot Maria, described in such lyrical terms above, as 'the crowning imbecility of the film—the conversion of the Robot into likeness of Mary' (1927). However, the film provides a critical insight into the sociocultural significations of the female robot, which had by then become a discursive fact. In the work of Andreas Huyssen, we find perhaps the most compelling interpretation of *Metropolis* and the conceit of the female robot (1981). For Huyssen, the film is part of a broader trend of the early twentieth century where 'women, nature, machine had become a mesh of significations which all had one thing in common: otherness; by their very existence they raised fears and threatened male authority and control' (1981, 226). Huyssen teases out the critical doubling wherein the female robot offers both absolute male control of the female insofar as she has been fashioned by the hands of men, yet simultaneously, as woman, the female robot represents the ultimate other and loss of male control. That the leader of the city—Fredersen—who solicits the creation of the robot Maria is duped by Maria's creator, Rotwang, and that Rotwang himself is ultimately killed, is a manifestation of the doubling of the notion of control itself—for as these characters seek control through the creation of a machine, they ultimately lose control entirely.

Yet, through Huyssen's reading of *Metropolis* we also encounters not just the fear associated with female automata, but also—interestingly—the desire for male control over life, both in terms of the creation of life and, perhaps, the extension of life itself: immortality. In this critical passage, quoted in full, Huyssen writes:

Clearly the issue here is not just the male's sexual desire for woman. It is the much deeper libidinal desire to create that other, woman, thus depriving it of its otherness. It is the desire to perform this ultimate task which has always eluded technological man. In the drive towards ever greater technological domination of nature, Metropolis' master-engineer must attempt to create woman, a being which, according to the male's view, resists technologization by its very "nature." Simply by virtue of natural biological reproduction, woman had maintained a qualitative distance to the realm of technical production which only produces lifeless goods. By creating a female android, Rotwang fulfils the male phantasm of a creation without mother; but more than that, he produces not just any natural life, but woman herself, the epitome of nature. The nature/culture split seems healed. The most complete technologization of nature appears as re-naturalization, as a progress back to nature. Man is at long last alone and at one with himself. (Huyssen 1981, 227).

By making woman, a practice that, as we have seen, has a long narrative history, man can assimilate his ultimate fantasy: to take the role of the creator, of God, in a move that echoes the narrative themes of Shelley's *Frankenstein*, a century earlier, and foreshadows some of the ideas presented in Alex Garland's *Ex Machina*, where the robot creator, Nathan, speaks of being God: 'If you've created a conscious machine, it's not the history of man. It's the history of Gods'.[3] And by taking the role of the ultimate creator, man can, as Huyssen notes, dominate nature, and arguably with it, his own nature and death. This is perhaps a tangential point, as notably, creating life does not equate to extending one's own life. However, the idea is rather more specifically around man's attempts to assimilate through technology the figure of the woman as mother: as both the creator of life and the nurturer of life.

Despite its critical reviews, the release of *Metropolis* in 1927 is broadly considered to mark the birth of science fiction blockbusters (Sack 2019). The genre has of course burgeoned significantly, but films depicting seductive female automata have remained a common trope. While I have suggested above that the extent to which *Metropolis* can be taken as an example of the fear of (female) robots rising against us is limited, Garland's *Ex Machina* (2015) offers the quintessential narrative of a robot (Ava) who ultimately turns against her maker, deceives her lover, and escapes to freedom. She both turns against the humans who shaped her and finds her own free will and agency. However, even this attainment of agency is suggested to be a simulation, the realisation of her creator's (Nathan) intention to create a conscious machine with all the complexities of the human mind, described by Nathan as: '[i]mpulse. Response. Fluid. Imperfect. Pattern. Chaotic' (Garland 2015). The film depicts a clear coupling not between 'domination' and 'uprising', as in Cave and Dihal's formulation, but instead between

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[3] This line is spoken to Nathan by Caleb, who Nathan brings to his research laboratory to conduct a Turing Test with the robot he has created.

'gratification' (Ava was designed by Nathan in the likeness of the women in the pornography watched by Caleb) and 'uprising'.

Another film often quoted for its portrayal of a female AI is Spike Jonze's *Her* (2013; Weinberg 2018), which features Scarlett Johansson's voice as an AI-driven operating system (OS) named Samantha. Samantha is the OS to the male lead—Theodore Twomby—who ultimately falls in love with her. The narrative of the film suggests that the relationship which develops between Theodore and Samantha is unusual, that Samantha is unlike other OS's, and even that the relationship is monogamous. Samantha's skill at seducing Theodore through her personalised speech and behaviour is so authentic and believable that when designing Apple's personal assistant Siri, Alex Acero, the lead of Siri's speech team, spoke of being inspired by *Her* and sought to make Siri as human-like and believable as Samantha. (The gendering of Siri is discussed in further detail in the section below). In particular, Acero spoke of wanting to create an AI assistant with whom people would fall in love (Pierce 2017). But in the end, the film demonstrates that there was nothing special about Samantha's relationship with Theodore, for all the other characters of the film are also shown to have close romantic relationships with their OS, and Samantha is revealed to have thousands of other people with whom she has a relationship and has, ostensibly, fallen in love.

However, the film offers a poignant illustration of the fears of both alienation and obsolescence—as Theodore confronts his own meaninglessness in the face of Samantha's complete autonomy from him and insouciance to his need for monogamy—coupled, too, with desire and gratification. Like *Ex Machina* and other earlier narratives, the key character development is given to the male character who becomes deceived or cuckolded by the female robot or AI with whom they fall in love. That the woman is ultimately a machine renders the audience's uncertain affectations towards her justified, in a move that sheds light on the earlier narrative associations between automata and femininity, as figures of the other which are sceptically received and do not require being treated as human as such. But as Laurie Penny articulates, the consequences of this symbolic association can startlingly rebound in our judgment of women in reality:

> In stories from *Bladerunner* and *Battlestar Galactica* to 2015's *Ex Machina*, female robots are raped by men and viewers are invited to consider whether these rapes are truly criminal, based on our assessment of whether the fembot has enough sentience to deserve autonomy. This is the same assessment that male judges around the world are trying to make about human women today (Penny 2016).

Penny's piercing critique intimates to the constitutive relationship between narratives and the worlds and subjectivities

they shape, just as Weinberg notes how the development of domestic technologies had a material impact on women by raising expectations of how real women should perform in the home. While I return to the idea of the material impact on women of narratives of gendered technology in the conclusion to this article below, the next section proceeds to analyse how these narratives around the hopes and fears associated with intelligent machines are recast in gendered technology today.

3 Reconciling hopes and fears in gendered technology

From Pygmalion to the Sophia humanoid of Hanson Robotics, there is a long tradition of popularised automata who are presented as female. Indeed, many of the narratives discussed above—*The Sandman*, *The Future Eve*, Shaw's *Pygmalion*, *Metropolis*, *Ex Machina* and *Her*, are all examples of popularised narratives which feature female automata. With respect to Sophia of Hanson Robotics, the company had earlier produced a number of other androids which had featured as male, including: Dick Android (2005), Albert Einstein HUBO (2005), Jules (2006), Joey Chaos (2007), Zeno (2007 and updated in 2012), Han (2015), and Einstein (2016) (Hanson Robotics n.d.). However, it was Sophia, originally released in 2016, who became a figure of the popular imagination, perhaps due to her sophisticated design or perhaps in fulfilling the ideal stereotype of what a humanoid should look like. In any event, Sophia's gendering as female appears to be key to her popularity.

In addition, one of the most ubiquitous forms of AI designed with a human-like persona are AI-driven personal assistants, such as Siri (Apple) and Alexa (Amazon). These technologies appear to be gendered female with female names, default female voices and female characters (Adams and Ni Loideain 2019). In response to this concern—which has received a fair amount of media attention (UNESCO and EQUALS Skills Coalition 2019), there has been a dearth of discussions seeking to find a priori reasons as to why representations of women (whether female names, voices, characteristics or otherwise) appear to be so popular in today's AI technology. One of the most clearly articulated responses, based on the work of Clifford Nass and Scott Brave particularly around the gender stereotypes readily assigned to even synthetic speech (2015), has been that 'we want our technology to help us, but we want to be the bosses of it' (Lever 2018). This coupling of helpfulness with the need to dominate over and control technology as an object of use is, perhaps subconsciously, more readily personified in a woman. Indeed, Lever's statement encompasses much of what appears to be the embedded social reasoning behind the gendering female of emerging technologies, and

particularly those technologies that are aimed at ubiquitous daily use, from computers in the 1980s (discussed below) to AI assistants today. Capitalising on the stereotype of women as secondary to and therefore less threatening than, men, the female robot offers the hopes of new technology that can be controlled by humans sundered from the fears that it might control us. As I will discussed below, this conceit is retooled in the narratives behind the gendering of recent technologies.

3.1 More than an assistant…

Log on to Apple's homepage for their AI assistant, and you are told: 'Siri does more than ever. Even before you ask' (Apple, n.d.). This is the quintessential dream for Siri: equipped with a telepathic understanding of you and your needs, 'she' will endlessly improve both 'herself' and 'her' user. With a default female voice and female name, Siri's gender is suggested to be female. Its designation as a personal assistant, therefore, comes together with its name ('Siri' is a Nordic name meaning 'the beautiful woman that leads you to victory' Ni Loideain and Adams 2019, 5) and voice in the stereotyped trope of a female secretary who—like the trope typically suggests—can be far more than a mere assistant. Indeed, Heather Suzanne Woods describes how 'from the start, Apple has advertised Siri as a way to make life happier, healthier, and more productive with less effort' (2018, 7). Similarly, too, Alexa is conceived as improving well-being and quality of life (Woods 2018), ultimately suggesting that their potential to meet the needs of their users transcends the imagination of what can be scripted or programmed. In the terms set out by Cave and Dihal, Siri and Alexa offer a life of ease from burdensome and unimportant administrative work[4] but also, perhaps, well-being and a life better lived. This does not accurately fall into Cave and Dihal's schema of immortality/inhumanity, which broadly concerns health and longevity and, in reference to AI capabilities, relates to the extension of life through digital clones and mind-uploading (2019, 76). Instead, the way in which AI assistants intimate a phatic promise to their user to nurture and look after their well-being, coupled with their gendering as female, can be read as a digital representation of the mother role.

But AI assistants—in their categorical assignment as assistants and submissive to the orders of their users—offer, too, the fulfilment of the hope of dominance coupled with gratification. As Cave and Dihal describe:

Once AI has fulfilled the hopes for longer life and ease, the next goal is to fill all that time with that which brings us pleasure. Just as AI promises to be the perfect servant without the complications of human social hierarchy, so it promises to automate—and thus uncomplicate—the fulfilment of every desire. It could be the perfect companion, for example: always there, always ready to listen, never demanding anything in return (2019, 76).

AI assistants offer just this. Marketed as 'always ready' (Amazon), Katherine Cross maintains that AI assistants are a presentation of 'perfect subservience and total availability. Our virtual assistants, free of messy things like autonomy, emotion and dignity are the perfect embodiment of that expectation' (2016). Moreover, Hillary Bergen summarises that 'Siri enables a kind of fantasy particular to the professional male, a fantasy that revolves around her ability to engage in a distinctly feminized mode of affective labour while remaining emotionally unaffected by stress or other outside factors' (2016, 104). Further, the way in which devices such as Siri are programmed to provide personal—personalised—services to their user through their machine learning capabilities, and to offer what Cross speaks of, above, as 'total availability' (2016), plays too on the male fantasy of a female that is completely his to have and control. In further proof that Siri was sexualised is the now much discussed earlier programming which saw Siri respond to the statement 'you're a bitch' with the line 'I'd blush if I could' (Bergen 2016; Ni Loideain and Adams 2019; UNESCO and EQUALS Skills Coalition 2019). But, as discussed in what follows, the sexualisation of Siri was not Apple's first instance of coupling technology with gender and desire.

3.2 Apple's 1984

For Apple, the dream of what new technologies could create was ingrained within their commercial imagination from the beginning. Yet, as we will see, this dream was gendered. In the full write-up (which appeared in Newsweek) for the advert of the original Apple Macintosh personal computer in 1984, the company crafted the now well-known maxim: '[a]t Apple, we have only one rule: rules are made to be broken' (1984). Rather less known were the statements that followed this maxim which described the reaction to the new Apple computer: '[h]ere before our very eyes (and yours), is our own technology smiling back at us. Proof that sometimes when you set out to change the rules, you wind up changing the world' (1984). Writing just after the release of the Apple Macintosh Caputi (1988) critiqued Apple's language here by pointing out that 'one of the ways in which it plans to accomplish this [dream of "changing the world"] is through technological

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[4] On this point see also Adams and Ni Loideain (2019) who note that the very purpose of AI assistants is to free their users up for more important work makes a critical value statement about the kind of work that AI assistants perform which has, as Weinberg (2019) also notes, been historically undertaken by women of colour.

myth-making, essentially (as evidenced by their logo—the artificial apple with the bite taken out) by altering the central creation myth of Judeo-Christian culture' (1988, 513). For Caputi, Apple's logo—with the proverbial 'byte' (Halberstam 1991, 439)—reworks the creation myth by promising 'an artificial paradise, indeed the artificial *as* paradise' (1988, 514). But, like the Judeo-Christian myth of Genesis where Eve takes the fatal bite of the apple, Apple's promise of paradise was gendered, or more specifically, drew on stereotyped notions of gender to package this promise, and assuage any fears that might have been associated with the emerging—and potentially revolutionary—technologies it promulgated.

The potentially revolutionary role of computing and technology to usher in new societal paradigms was evident in the launch of Apple's 1984 Macintosh Computer and their statement that 'we have only one rule: rules are made to be broken' (1984). Indeed, Apple's anadiplosis here was a rhetorical statement of ideological intent as much as it was a commercial witticism, accompanied by the advert directed by Scott Ridley, director of the zeitgeist movie *Blade Runner* (released 1982). The Newsweek write-up, together with the 1984 advert, constitutes the key narrative framing of the Macintosh that Apple chose to put forward. The advert depicts a dystopian Orwellian future where uniform male figures file in towards the image of a big brother-like figure on a large telescreen, preaching the totalitarian dogma of the future. In runs Anya Major, a British athlete, with a picture of the Apple Macintosh on her shirt, wielding a hammer. She hurls the hammer at the telescreen, causing an explosion and, symbolically, the cataclysmic fall of the imagined dystopia. The voiceover of the advert then announces: 'On January 24th, Apple Computer will introduce Macintosh. And you'll see why 1984 won't be like *1984*'. Apple's intention was then to radically alter the future, or at least, the fears of what the future might be.

The advert was received with much acclaim and became a watershed moment in the history and popular imagination of the Apple computer (Scott 1991). What is interesting for the inquiry here is the way in which the female figures in Apple's narrative schema. Indeed, with the Apple Macintosh on her shirt, Anya Major's character is a representation of the computer itself. To put this differently, the computer is signified as a woman. In fact, Anya Major's character in the advert was interpreted by some as indicative of the role technology (and Apple specifically) could play in promoting gender equality and breaking traditional gender norms (Scott 1991; Friedman 2005). Friedman went so far as to claim Apple was feminist, and that 'gendering the Mac user as female implied that Apple stood for equal access for all to computing' (2005). Yet, note how Freidman continues his

interpretation of the representation of the Macintosh computer as female:

> Gendering the Mac itself as female associated the Mac with a host of feminine-identified qualities which helped make the Mac seem more user-friendly for all users. Other computers were associated with the traditionally male-gendered sphere of the workplace; the Mac was the home computer. Other computers were rigid, imposing; the Mac was soft, curvaceous, user-friendly. Other computers were emotionless; the Mac was the personal computer. If gendering the Mac user as female implicitly presumed women had equal interest in using computers, gendering the Mac itself as female bucked computer conventions while still evoking a traditional gender model: the image of the computer as the friendly secretary, the able assistant with a smile on her face (2005).

What Friedman calls Apple's 'friendly secretary' and 'able assistant', symbolised by the blonde model Anya Major, later manifested as Siri. Crucially however, the politics of, and narrative behind, the gendering female of firstly the Apple Macintosh in its advertisement, and later, AI assistants, seems to have remained constant. As Friedman intimates, the gendering female of the Apple Macintosh was an important aspect of the anti-ideological vision of the company to produce a digitalised future without the connotations of a radically disrupted social order and big brother-like dystopia. The woman played a central figure as the faithful aide of humankind, without a subjective determination of her own, other than as an 'able assistant' of man. This trope is repeated in the marketing campaigns of AI assistants today, including Amazon's Alexa and the Google Assistant that depict the AI assistant as coming to save male figures (the Dad in Amazon's advert (2018) and David Walliams in the UK Google Assistant advert (2018)) from a domesticity that it is implied is not within the natural order of where they as Dad and male should reside.

3.3 Familiar femininity

In addition to the above, Freidman also submits that, through gendering the Macintosh computer as female in the Macintosh advert, the negative fears about the future impact of technology are assuaged. Anya Major's character is presented as a welcome antithesis to the ideological dogma she then shatters with her hammer. This contrast is depicted not only through the narrative of the advert, but through the visualisations of a colourless and impassive dystopia on the one hand, and the passion and radiance of Anya Major with her blonde hair and bright athletic clothing on the other. What is then created is a binary split between the dystopian

future that it was feared computer technologies would bring about, and the future Apple would help create which, they imply, would retain the hallmarks of familiarity and tradition, symbolised by the female.

Critically, this narrative that posits femininity as a familiar counterpoint to the unknown impact of technological advances is arguably still at play in the gendering of AI assistants as female. As Ni Loideain and Adams note, the design choices to adopt a female voice for AI voice technologies is largely because it is 'a voice which behavioural economics has decided is less threatening: she assists rather than directs; she pacifies rather than incites' (2018, 4). For Woods too, gendering AI assistants female is, as she describes, 'a rhetorical strategy connecting the familiar technological past/present to an anxiety-producing surveillant future' (2018, 4). She further argues that:

> To manage would-be users' anxieties, Siri and Alexa are encoded with gendered characteristics to pacify anxieties about embedding surveillant devices within the intimate sphere. In particular, the programmed persona of AI VA [virtual assistant] recreate and reify stereotypical gender codes attached to domesticity as social scaffolding to entice users and potential users into (1) buying devices, (2) using them on a quotidian basis in increasingly intimate ways, and (3) relinquishing control of their personal data for the privilege of interacting with these artificially intelligent virtual assistants (2018, 13).

Precisely then, the gendering female of AI assistants—like the gendering of the Macintosh computer in the 1984 advert—can be understood as part of a strategy to underplay the disruptive and even revolutionary implications of computing technologies behind the veil of the familiar and reassuring female. As such, the inquiry into the representation of automata and AI as female becomes not just a question of 'why' but also 'when'. For deciphering in what narrative contexts AI and automata are designed as women allows us to critique the use of gender as a commercial strategy to popularise new technologies, and to expose the gendered assumptions and stereotypes upon which such design decisions are made. Indeed, the fact that security and rescue robots are gendered male and that IBM's Watson—the AI assistant for banking and finance—is too gendered male, gives weight to the standpoint that the critical question is *when* AI are gendered female (Pascale 2019).

However, while the narrative of familiar femininity provides a critical touchstone for understanding some of the design choices behind such technologies and for enabling a critique of the way in which the tech industry both relies on and reproduces normative ideas about gender, it fails to engage with historical and structural concerns regarding the relationship between women, power, desire, subjectivity and, indeed, technology. In fact, quite precisely, this narrative reproduces such historical and structural concerns, by relying on normative and binary gender stereotypes and associations, and linking together the hopes of immortality or well-being, ease, gratification and dominance severed from the more worrisome fears of uprising, obsolescence, inhumanity and alienation.

4 Conclusion

The narratives upon which the promises of what AI can and will bring about hold a significant gendered content. As Haslanger (2014), above, and Cave and Dihal describe (2019), the affective responses to intelligent machines has, throughout the centuries of Western history, been abstruse. On the one hand, such technologies represent the absolute dreams—and later accomplishments—of what man can achieve and be; on the other hand, such creations triggered a deep-set fear that they will turn against us and indeed, turn us against ourselves. My aim here has been to triangulate the schema of hopes and fears Cave and Dihal set out with a series of narratives wherein automata or robots are represented as women, in order to present a gendered reading of AI and automata, and our affective responses therein. These narratives offer a recasting of the schema of hopes and fears, showing that they are not so easily separated, often manifest together or differently, and that many of the hopes associated with intelligent machines have been embedded within today's gendered technology (and thus the fears assuaged). But they also offer a glimpse into sociocultural ideas about the role and nature of women, such as the suggestion in *L'Eve Future* that real women were mechanical and artificial and that female automata offered a more genuine woman. Relatedly, Huyssen's reading of *Metropolis* suggests that the anthropomorphising of robots as female is simultaneously a dehumanising of real women, a suggestion that real women are considered mere machines, whose affectations and even intelligence is merely simulation. Thus, a gendered reading of the hopes and fears associated with intelligent machines allows us to problematise this cultural paradigm and expose some of the power asymmetries which lie within it, particularly along the lines of gender and submission.

Lastly, a gendered reading of the narratives of hopes and fears associated with intelligent machines, and an analysis of how these narratives manifest in technologies of today, also provides an opportunity to reflect on the importance of narratives in shaping our current realities. Indeed, the stories of creating mechanical beings, and particularly mechanical women, later took on material form as technological progress began to go far enough to create the objects of our imagination. But, the narrative realm itself too offers a space where the hopes and fears of AI can be fulfilled,

and moreover, the ethical consequences of the fulfilment of these hopes and ideas can be played out and experienced. As Graham Ward explains, our engagement with narratives is fundamentally ethical as, 'it is not that we enter another world, like Alice through the looking-glass, but we constitute another world, internally, that expands our own being in the world, externally' (Ward 2006, 440). Thus, we must continue to explore in the narrative space—including in the advertisements for AI technologies, different alternatives to the binary and stereotyped gendering of automata that has become so popular, and similarly, non-Western accounts of automata or non-human/animate intelligence, such as in the work of Akwaeke Emezi (Emezi 2018, 2019).

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