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Amazon's Alexa critical genealogy through the imagery of women and machine in science fiction cinema

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Master in World Internet Studies

Supervisor:
PhD Cláudia Álvares, Associate Professor,
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SOCIOLOGIA
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Department of Sociology

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*“It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what descriptions describe descriptions, what ties tie ties.
It matters what stories make worlds, what worlds make stories.”*

(Haraway, 2016, p. 12)

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Resumo

Com o objetivo de melhor compreender o fenômeno de genderização de tecnologias de consumo presentes hoje no mercado, como as digital voice assistants (DVAs), esta dissertação examina as possíveis interseções socioculturais entre gênero e tecnologia presentes no imaginário do cinema de ficção científica. Para isso, foi realizada uma análise de discurso foucauldiana em dez filmes de longa metragem deste gênero artístico, que é muito caro ao feminismo especialmente a partir da sua terceira onda, estabelecendo um paralelo intertextual a partir das respostas programadas em algumas das mais populares DVAs disponíveis atualmente, como Alexa, da Amazon, e Siri, da Apple. Esta dissertação desafia o argumento de que a genderização da tecnologia é um fenômeno tão recente quanto essas novas tecnologias e que pode ser explicado apenas do ponto de vista da experiência do usuário. Para este efeito, traça-se uma genealogia da Alexa com base nas ideias propostas por Michel Foucault, expondo os jogos de poder por detrás dessas construções de gênero dentro e fora do cinema. Nesse sentido, foram identificadas e examinadas três categorias principais de análise de discurso que estão presentes e se repetem não apenas na amostra fílmica, mas também nas DVAs utilizadas diariamente por milhões de consumidores ao redor do mundo. O estudo aponta para a necessidade de superação das barreiras de gênero no acesso não apenas técnico, mas também sociocultural, às tecnologias de forma geral.

Palavras-Chave: Assistentes digitais por voz, Genderização, Feminismo, Cinema, Ficção científica.

Abstract

In order to better understand the phenomenon of genderization of consumer technologies, such as digital voice assistants (DVAs), present in the market today, this dissertation examines the possible sociocultural intersections between gender and technology present in the imaginary of science fiction cinema. To do so, a Foucauldian discourse analysis was conducted on ten feature films in this artistic genre, which is very dear to feminism, especially as of its third wave, drawing an intertextual parallel with the responses programmed into some of the most popular DVAs available today, such as Amazon's Alexa and Apple's Siri. This dissertation challenges the argument that the genderization of technology is a phenomenon as recent as these new technologies and that it can be explained only from a user experience point of view. With this objective in mind, we trace a genealogy of Alexa based on the ideas proposed by Michel Foucault, in an attempt to expose the power games behind these gender constructions inside and outside of cinema. In this sense, we identified and examined three main categories of discourse analysis that are present and repeated not only in the filmic sample, but also in the DVAs used daily by millions of consumers around the world. The study points to the need to overcome gender barriers in not only technical, but also sociocultural, access to technologies in general.

Keywords: Digital Voice Assistants; Genderization; Feminism; Cinema; Science Fiction.

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List of abbreviations

AI - Artificial Intelligence

DVA - Digital Voice Assistants

SF - Science Fiction

Unesco - The United Nations Educational, Scientific and Cultural Organization

CHAPTER 1

Introduction

If, for the construction of the present genealogy of Alexa, Amazon's digital voice assistant (DVA), through the imaginary of genderized technology in science fiction films, we were to look for a 'lost event' in the Foucauldian sense, that is, a point in which there is "the reversal of a relationship of forces, the usurpation of power, the appropriation of a vocabulary turned against those who had once used it" (Foucault & Rabinow, 1984, p. 88), we could certainly be referred to the summer of 1816. There was no cinema yet, let alone computers at that time, but it was then that the 'embryos' of science fiction and programming may have met, unknowingly, for the first time. A lost event worthy of the genealogical approach proposed by Foucault, since it is fabricated by 'alien forms', after all it is the possible meeting of two young women pioneers in their fields: writer Mary Shelley, then aged 19, and mathematician Ada Lovelace, still a few months old (she was born in December 1815).

In the introduction to *Frankenstein* (1818), considered the inaugural work of the science fiction genre and written by Shelley, the author tells how and where she got the idea for the book: during a cold and rainy summer outside Geneva, Switzerland, at the home of her friend and writer Lord Byron, Ada's father. Years later, Ada would become the author of the first algorithm or mathematical model to be processed by a machine with Charles Babbage's analytical machine – but for a long time she was erased from the history of programming to make way for male protagonism. Similarly, for years, the authorship of *Frankenstein* was attributed to Mary Shelley's partner, Percy Bysshe Shelley.

Unfortunately, there are no concrete records of this encounter. Perhaps baby Ada, in fact, was not even there in that summer refuge with her father and his guests in mid-1816. But if our work is to trace a Foucauldian genealogy of digital voice assistants from the imaginary of the machine-woman in science fiction films, it is almost irresistible to imagine this possible meeting of pioneer women, the 'mothers' of science fiction and programming, in what would be a kind of Genesis starring two Evas.

We yield, then, to the temptation provoked by the imaginative power of such a 'lost event' to start this dissertation, which is inserted in the recent and multidisciplinary field of World Internet Studies because, following the ideas proposed by Muniz Sodré (2015), we believe that:

The scientific field of communication, for example, may come to be defined more clearly as a device for re-reading traditional questions of society in the light of cultural mutations brought about by information and communication technologies, without the traditional barriers between the old 'disciplines', but also between *scientific redescription and creation of an artistic nature*, with all its imaginative resources, from which metaphors are not excluded. (Sodré, 2015, 2430-2434 Kindle position, our emphasis)¹

As we will analyze in the following pages, the creation of artistic nature, especially the genre of science fiction, with its critical and imaginative exercise of sociocultural phenomena, has been widely appropriated by feminist studies in the elaboration of new theories of social relations, because "both science fiction texts and feminist theories conceptualize issues of difference, globalization, and technoscience that increasingly affect women's lives, and both are concerned with contested boundaries and definitions of bodies and cultural/social territories" (Melzer, 2006, 113-115 Kindle position).

Thus, at least since Donna Haraway's basic work, from the 1980s on, more and more researchers, not only from feminist studies, but also from communication and technology fields, have recognized the urgency of crossing conventional boundaries, binarisms and classical dualisms, in order to produce new knowledge that accounts for the complex reality we inhabit. Muniz Sodré's reflection and the formation of the multidisciplinary field of World Internet Studies are proofs of this tendency, which is by no means exclusive to feminism.

Due to its relevance to the imaginary incited by feminism and also by the fields of science and technology, science fiction cinema was chosen as one of the objects of the present investigation, which intends to build an analysis of the genderization of consumer technologies as a cultural phenomenon starting from the machine-woman character.

It is also worth mentioning in this Introduction two important challenges we faced in this research process. The first concerns our goal of contributing to feminist studies in the academy or, in other words, to theoretical feminism. After all, the endeavor relies on a theoretical current that is extremely critical to the traditional production of knowledge itself, recognizing knowledge as perspective and "avoiding any essentialist idea of a universal woman's perspective" (Wajcman, 2004, p. 86).

¹ O campo científico da comunicação, por exemplo, pode vir a definir-se mais claramente como um dispositivo de releitura das questões tradicionais da sociedade à luz das mutações culturais ensejadas pelas tecnologias da informação e da comunicação, sem as tradicionais barreiras entre as antigas 'disciplinas', mas também entre a *redescricao científica e a criação de natureza artística*, com todos os seus recursos imaginativos, dos quais não se excluem as metáforas. (Sodré, 2015, 2430-2434 Kindle position, ênfase nossa)

As Foucault (1984) has already pointed out, all knowledge, regardless of the field in which it is inserted, is contingent, situated, and also political, because it is always crossed by intricate power games. The present work intends, therefore, to vehemently reject any idea of a closed and a-historical discourse, even about feminist movements and women, understanding that this dissertation is also a perspective on the proposed objects of investigation: the perspective of a Latin American woman who works with and studies Artificial Intelligence (AI), a minority within a minority, in the complex pandemic scenario caused by the crisis of the new coronavirus.

And it is precisely the pandemic that is the second great challenge faced during this research. Being not only a Latin American, but also a Brazilian researcher, the global health crisis gained even more terrible contours, being Brazil, after all and without a doubt, one of the countries that most suffered – and still suffers – with the event due to its denialist (dis)government. But if, on the one hand, the pandemic was a great challenge, on the other, it was also one of the great motivators of this academic endeavor, which intends to contribute to the inclusion of gender issues in a transversal and critical-imaginative way in the debates that are currently being formed around the new and fruitful field of World Internet Studies.

1.1 Our Motivation

The year is 2021 and it is practically impossible not to talk about the COVID-19 crisis, such was its impact on all areas of our lives. With the confinement of people in the domestic space, the traditional separation between home and work was, in a way, suspended, evidencing traces of a centuries-old gender inequality: the mismatch between men's and women's activities with regard to domestic chores. For women, even those who have some kind of paid activity outside their home, home has always been synonymous with a place of work for their extra hours of family care, while for most men, home is usually seen as a place of rest and leisure, after the external work obligations.

As Wajcman (2004) points out, the fundamental issue is not the separation in itself between domestic work – traditionally female – and work outside the home – male – because both are fundamental and need to be done. The problem lies in the process that has made the former invisible or totally outside the capitalist system, because unpaid and without basic rights, even though it is essential for the perpetuation of this system – after all, someone has to create the future generation of workers that will sustain the economy of a country, for example. “As feminists have argued, reordering the work-life balance will require recognizing the 'politics' of time” (Wajcman, 2004, p. 113), because it is only by recognizing and combating this inequality in the domestic space, on which the pandemic has thrown a powerful magnifying glass, that it will be possible to combat other inequalities, such as the lack of women in leadership spaces in companies, in governments, and, of course, in the field of technology.

Speaking of technology, the COVID-19 pandemic also had important impacts in accelerating the 'digital transformation' that was already underway in many spheres of our lives. More than ever before, internet access became a basic necessity just like running water and electricity, as people were forced to move much of their activities (working, studying, shopping, socializing, etc.) from off to online.

In this scenario of comprehensive confinement and digitalization of everyday activities, several consumer technologies have gained prominence. Digital voice assistants (DVAs), which work on cell phones and on hardwares called smart speakers, are among these highlights, as confirmed by a report from the technology website *Techcrunch*:

Around three-quarters of U.S. adults 18 and up said their routines have been impacted due to COVID-19 and their media habits have changed as a result. Since the outbreak, 35% of U.S. smart speakers owners say they're listening to more news and information through their device, and 36% say they've increased their consumption of music and entertainment. (Perez, 2020)

The confinement in the domestic space may also be related to this greater adherence of people to DVAs such as Siri by Apple, Alexa by Amazon, Cortana by Microsoft, and Google Assistant by Google: "With tens of millions of Americans no longer commuting, smart speakers are becoming even more important as a conduit for news and information,' said Edison Research SVP Tom Webster, in a release" (Idem, 2020). These statistics are from the United States, but because of the country's potential to influence the rest of the West, especially as the leading producer of these consumer technologies, these numbers serve as a beacon for any research that relates to the adoption of new consumer technologies generally.

The coming together of these two issues highlighted by the pandemic – the confinement in the domestic space and the highlighting of gender inequalities in so-called 'time politics', along with the acceleration of new online habits and the adoption of new consumer technologies, such as DVAs, especially in the home – echoed the warning made by West *et al.* (2019) prior to the pandemic, in noting the docile and even flattering manner in which feminized mainstream DVAs in the market responded to a wide variety of verbal sexual abuse. The authors state that:

As more and more human activity moves online, the considerable progress societies have made towards gender equality in offline environments is at risk if women do not play a more active role in building, as well as simply using, the digital tools and applications where people spend increasing amounts of time. (West *et al.*, 2019, p. 34)

These reflections about pandemic and DVAs, therefore, served as motivation for the present investigation, which further delves into cinema and the science fiction genre by pointing out that “it matters what stories make worlds, what worlds make stories” (Haraway, 2016, p. 12). Both are sources of reflections and theoretical tools very dear to theoretical feminisms and women, as we will see in detail in the literature review of this dissertation.

1.2 Methodological Course

To achieve the goal of the present research, namely the building of a redescription of gender identities both in science fiction movies and in digital voice assistants, the present research took two main methodologies as a starting point: genealogy and discourse analysis. Both methods are based on the extensive work developed by Michel Foucault. In the following pages, we will explore in depth each of the concepts, explaining why we believe these to be the best methodological approaches both to achieve the goals of this research and to contribute to the development of feminist fields of study in arts and technology in a transversal way.

But before we go into the details of genealogy and discourse analysis, it is worth mentioning first that working with methodologies based on Foucault’s thought is extremely challenging. They often divide opinions among researchers in the social sciences and humanities because, as Gillian Rose (2016) states:

As Barrett (1991, p. 127) notes, his [Foucault’s] methodological statements are rather vague, and Niels Akerstrom Andersen (2003, p. 8) comments that he often didn’t follow his own prescriptions. (...) This vagueness, combined with the huge amount of Foucault’s work now available – which includes many interviews and pieces of journalism quite apart from his books, lectures and papers – and the fact that, not surprisingly, his ideas changed as his projects shifted, mean that his methodological legacy has been complex and diffuse. (p. 193)

Despite these limitations, we believe that, if we keep in mind that the great advantage of the methodologies worked by Foucault is the focus on *how* and not on *why* phenomena happen, his approaches are very interesting for research like this one, which seek to analyze in detail the way power relations are at play in a naturalized and, therefore, invisible way, in the most diverse fields of our lives. Another important point for the development of this work was the support we sought from authors who systematized Foucauldian thought or used it in a pragmatic way, as is the case of Gillian Rose (2016), with discourse analysis, and Judith Butler (1999) and Teresa de Lauretis (1984), with genealogy.

1.2.1 Genealogy: a Critical Look at What ‘Has No History’

From the reading of Friedrich Nietzsche’s works of historical philosophy, especially *On the genealogy of morals* (1887), in which the German philosopher examines the development of

morals and values in Western culture through the power relations built over time, Foucault defends the importance of genealogy as a particular form of investigation of those elements that “we tend to feel [are] without history” (Foucault & Rabinow, 1984, p. 76), such as sexuality and other aspects given as ‘natural’ or ‘universal’.

According to Foucault, genealogy is not the search for origins, nor the construction of a linear development that would dictate the fate of a population. Instead, the documental and ‘meticulous’ work of this technique of historical investigation seeks to show – by making a synchronic cut into the past from the present moment – the plural and often contradictory narratives of things, revealing the traces of influence of power games on what has become socially accepted as ‘truth’.

In the article *Nietzsche, Genealogy, History* (1971), the author explains the foundations of genealogy as a method, besides citing some results produced by the methodology conducted by Nietzsche. Among the examples mentioned throughout the text is the genealogical analysis of the concept of freedom, considered one of the fundamental values of Western culture. According to Foucault, based on Nietzsche, genealogical reasoning allows one to perceive that freedom would be “an ‘invention of the ruling classes’ and not fundamental to man’s nature or at the root of his attachment to being and truth” (Idem, 1984, pp. 78-79).

Foucault’s *The History of Sexuality* (1976-2018) is a classic example of genealogy put into practice. Over the four volumes that make up the vast work, the author examines in detail the emergence of sexuality as a discursive object and argues that the notion that every individual possesses a sexuality is a relatively recent development in Western societies, beginning in the seventeenth century. To briefly summarize, his work deconstructs sexuality, arguing that the ‘truths’ surrounding the subject were mostly discovered by chance and supported by the operation of power and knowledge in order to “constitute a sexuality that is economically useful and politically conservative” (Foucault & Rabinow, 1984, pp. 317-318).

By denying any metaphysical or essentialist conception of events, critically and profoundly illuminating aspects that, so naturalized, ended up becoming cultural ‘truths,’ Foucauldian genealogy can be seen as a fruitful methodology for feminist theorists in the most diverse fields. Teresa de Lauretis, for example, defends its importance for feminist thinking on cinema, stating that: “technology, power and pleasure, sexuality and the body, the family and other forms of confinement, prisons and hospitals, psychoanalysis – what other historian or philosopher has put together and spoken of things that so directly concern cinema?” (de Lauretis, 1984, p. 86). But the reflections proposed by the author, although focused on the seventh art, extrapolate the movie theaters and also go towards a wider understanding of artistic making:

The idea that art is universal and thus potentially androgynous is basically an idealist notion: art can only be defined as a discourse within a particular conjuncture – for the purpose of women’s cinema, the bourgeois, sexist ideology of male dominated capitalism. (Idem, 1984, p. 4)

Another fruitful example of the use of Foucauldian genealogy for feminism is Judith Butler's approach in her highly regarded book *Gender trouble: Feminism and the subversion of identity* (1999), which seeks to expose the fundamental categories of sex, gender, and desire as effects of a specific formation of power:

A genealogical critique refuses to search for the origins of gender, the inner truth of female desire, a genuine or authentic sexual identity that repression has kept from view; rather, genealogy investigates the political stakes in designating as an origin and cause those identity categories that are in fact the effects of institutions, practices, discourses with multiple and diffuse points of origin. The task of this inquiry is to center on – and decenter – such defining institutions: phallogocentrism and compulsory heterosexuality. (Butler, 2006, 440-447 Kindle position)

Besides the essentialist refusal of 'truth' towards a critical analysis of the power games behind its construction, there are two other aspects of the theory developed by Foucault that highlight its affinity with feminist studies as will be seen in the literature review of this dissertation. The first is the articulation between the body, a fundamental place of political struggle for feminism, and the power/knowledge axis – the latter perpetuated by regimes of 'truth' represented by history – proposed by genealogy. The methodology would then have as one of its main tasks "to expose a body totally imprinted by history and the process of history's destruction of the body" (Foucault & Rabinow, 1984, p. 83).

In second place, and as a result of this defense of articulation between body and history, is the second aspect of affinity between Foucauldian genealogy and feminism: the recognition of knowledge as a perspective, at the same time product and producer of a complex 'system of injustices'. According to Foucault, 'the subject of knowledge', neutral, committed only to 'truth', self-owned and free of passions, must be metaphorically 'sacrificed'. This thought has been echoed and developed by Judith Butler, Alison Adam, Donna Haraway, Judy Wajcman and other authors who argue for a feminist epistemology to precisely unravel and overcome the Cartesian myth of the 'Man of Knowledge', thus exposing and overcoming this intricate 'system of injustices'.

When thinking specifically about our final object of study, the genderized DVAs available in the market today, such as Amazon's Alexa and Apple's Siri, it is possible to notice today a certain tendency to 'naturalize' the phenomenon of technology genderization through the user experience argument of interface design. According to this point of view, popular among developers of products based on Artificial Intelligence, Alexa, Siri and company are 'women' or have female voices by default, because scientific research has shown that their users prefer to interact with this gender in voice-activated technologies. This is at least what researchers such as former Stanford University professor Clifford Nass, author of *Wired for Speech: How Voice Activates and Advances the Human-Computer Relationship* (2007), argue.

However, a more critical and attentive look at the issue can perceive the existence of a complex play of forces behind this 'truth' about the user experience and that is why we propose a genealogical investigation of the genderization of technology in digital voice assistants. But it is clear that a genealogy in this sense could lead us to different places, such as the genderization of the figure of the assistant in general or the construction of the place of women as assistants in society. And more: why the female voice is perceived as "a better teacher of love and relationships and a worse teacher of technical subjects²" (Padrão, 2019), among other questions.

Since we believe that "art is responsible for coding anthropological issues that are at the forefront of societal concern" (Gil, 2020) and that we are dealing precisely with a problem located at the forefront of societal concern, the genealogy proposed in this dissertation will focus on a very specific aspect: the representations of gendered technologies (machine as woman or machine-woman) in the science fiction cinema in order to better understand the constructions behind the representations we see today in digital voice assistants. Moreover, the centrality of the body issue, which is present in Foucauldian thought and theoretical feminism, is also striking in science fiction: "Feminist theories and science fiction both are concerned with the body and its construction through what Foucault (in *The History of Sexuality*) calls 'bio-power': scientific discourse and technology's systems, institutions, and representations" (Melzer, 2006, 392-393 Kindle position).

Thus, we will try to identify possible expectations generated between gender and machine by the artistic imagination in science fiction cinema and its developments in the products available in the market nowadays, so as to answer the following research questions: How has gendered technology, assuming the female form, been built over the decades by science fiction films? What are the specifics of these representations? Are there one or more patterns that repeat themselves? Are there possible traits that are repeated (and reflected) in gendered consumer technologies, such as DVAs and robots?

To trace this genealogy and answer these research questions, we understand that it is necessary to complement another methodology also based on Foucault, discourse analysis. This is what we will talk about next.

1.2.2 Discourse Analysis: Reading for What is Not Seen or Said

To better understand discourse analysis as a research methodology and why we believe it is the best choice for the development of the present work, it is first necessary to take a few steps back and look at the centrality of the role of discourse in the arguments developed by Michel Foucault. Understood as "a particular knowledge about the world which shapes how the world is understood and how things are done in it" (Rose, 2016, p. 187), discourse is a powerful tool, according to Foucault, because it is able to shape subjects in a productive and non-repressive way. In this process, discourse becomes naturalized and universalized, that is, it more easily

² "Uma melhor professora de amor e de relacionamentos e um pior professor de assuntos técnicos" (Padrão, 2019).

passes itself off as 'true' knowledge rather than arbitrarily constructed in operations of power or 'systems of injustice', as mentioned earlier. In Rose's words:

Foucault insisted that knowledge and power are imbricated one in the other, not only because all knowledge is discursive and all discourse is saturated with power, but because the most powerful discourses, in terms of the productiveness of their social effects, depend on assumptions and claims that their knowledge is true. (Idem, 2016, p. 190)

As the name implies, discourse analysis explores the operations by which discourses produce specific views of the social world from different forms of texts. Here, texts are understood in a broad way: they can be static or moving images, written or spoken, and produced in diverse contexts, whether artistic, academic, journalistic, everyday, etc. Thus, "the discourse analyst is interested in how people use language to construct their accounts of the social world" (Tonkiss, 1998, pp. 247-248 as cited in Rose, 2016, p. 192). What strategies of persuasion do these discourses use? To what 'regimes of truth' do they service? What effects (in particular effects of authority and otherness) do they seek to promote at the social level? These are some key questions that should guide any Foucauldian discourse analysis methodology-based research concerned with the production and social effects of discourses.

Now, if genealogy seeks to retrospectively illuminate critically and in-depth aspects that, so naturalized, ended up becoming cultural 'truths', discourse analysis seems to us the most appropriate method to do that and that is why it was chosen to compose the present work. In her book *Visual Methodologies – An Introduction to Researching with Visual Materials* (2016), Gillian Rose provides valuable clues on how to conduct visual research from this methodology, which, according to her, "is very effective at looking carefully at images and interpreting their effects, especially in relation to constructions of social difference" (Rose, 2016, p. 217).

In the work, one of the successful examples of the application of discourse analysis cited by Rose caught our attention: the research *Myths of Sexuality: Representations of Women in Victorian Britain* (1988), by Lynda Nead. The study analyzed a wide variety of paintings and texts about prostitutes in Victorian England to understand how the social and cultural construction of these women occurred "as a particular sort of moral problem in bourgeois discourses of femininity, and was placed in the residuum" (Idem, 2016, p. 208). Through discourse analysis, Nead found that this construction took place in an extremely limited way, through few recurring visual elements, positioning the figure of the prostitute always in a simplistic dualistic way: "both evil women and as victims of an evil society" (Ibidem, 2016, p. 208). This construction, according to the researcher, would serve to place these women out of the place of a 'normal' femininity, which would be the conservative and functional one, according to the ideas proposed by Foucault's genealogy of sexuality.

Thus, the search for recurring themes and visual patterns, the reading of what is not said or shown, the examination of the 'truth effects' produced, and intertextuality are indispensable strategies for conducting a fruitful discourse analysis, according to Rose. Specifically on intertextuality, the author explains why it is important to trace relationships between different types of texts for discourse analysis: "in order to identify the meanings their viewers and readers shared" (Rose, 2016, p. 202).

And it is precisely this sharing of views and meanings that is one of the most relevant points for the present work, and that deserves to be highlighted. After all, the main goal of the chosen method is precisely the intertextual crossing between the representations of gendered technologies in cinema in a genealogical way – because "simulated women created by men" (Wosk, 2015, 1378 Kindle position) populate the imaginary of the seventh art since its early years, with the work of pioneers like Thomas Edison and Georges Méliès³ –, as well as in digital voice assistants that emerged a century later, but equally in a gendered way. And the inverse path is also a reality: the imaginary of the seventh art is present and influences the most advanced consumer technologies, such as Artificial Intelligence and robotics, as it is possible to see through this example highlighted by Julie Wosk:

In 2005 he [Hiroshi Ishiguro] introduced his female robot Repliee Q1 at the Prototype Robot Exposition in Aichi prefecture and later said that the name 'Repliee' derived from the French word 'to replicate' and also from the 'replicants' or androids in Ridley Scott's 1982 film *Blade Runner*. (Wosk, 2015, 3174-3176 Kindle position)

In summary, in order to better understand why today's most popular DVAs have won over homes around the world with female voices and personalities (exclusively or by default), responding flatteringly to the most diverse verbal abuses so as to reinforce and extend dangerous gender stereotypes⁴, intertextuality seems fundamental to us. It is this that will allow the construction of knowledge about gender issues in a transversal way, and not as a niche approach – the current feminist vision with which we seek to align ourselves, as will be highlighted in the literature review of this dissertation.

1.3 Definition of the Sample and the Categories of Discourse and Structure Analysis

To construct the present feminist critical genealogy of the genderization of technology as a cultural phenomenon through science fiction cinema, ten feature films released over a period of ten decades, between 1927 and 2014, were selected. They are (in chronological order):

³ See Thomas Edison early film *The Mechanical Doll* (1901) and George Méliès' *Coppélia and the Animated Doll* (1900).

⁴ See West *et al.* (2019); Fessler (2017); Favaretto (2021); Padrão (2019); Toueg (2021).

Metropolis (dir. Fritz Lang, 1927, Germany), *The Perfect Woman* (dir. Bernard Knowles, 1949, United Kingdom), *Dr. Goldfoot and the Girl Bombs* (dir. Mario Brava, 1966, Italy and United States), *The Stepford Wives* (dir. Bryan Forbes, 1975, United States), *Blade Runner* (dir. Ridley Scott, 1982, United States), *Eve of Destruction* (dir. Duncan Gibbins, 1991, United States), *Alien: Resurrection* (dir. Jean-Pierre Jeunet, 1997, United States), *Simone* (dir. Andrew Niccol, 2002, United States), *Her* (dir. Spike Jonze, 2013, United States), and *Ex Machina* (dir. Alex Garland, 2014, United Kingdom) (see Table 1).

Table 1

List of films

| Film | Year | Country | Director | Screenplay |
|---|------|-------------------------|--------------------|--|
| 1. <i>Metropolis</i> | 1927 | Germany | Fritz Lang | Thea von Harbou (screenplay and novel) |
| 2. <i>The Perfect Woman</i> | 1949 | United Kingdom | Bernard Knowles | George Black Jr., Basil Boothroyd, Wallace Geoffrey, Bernard Knowles, and Basil Mitchell |
| 3. <i>Dr. Goldfoot and the Girl Bombs</i> | 1966 | Italy and United States | Mario Brava | Franco Castellano and Giuseppe Moccia |
| 4. <i>The Stepford Wives</i> | 1975 | United States | Bryan Forbes | Ira Levin (novel), William Goldman (screenplay) |
| 5. <i>Blade Runner</i> | 1982 | United States | Ridley Scott | Hampton Fancher and David Peoples (screenplay), Philip K. Dick (novel) |
| 6. <i>Eve of Destruction</i> | 1991 | United States | Duncan Gibbins | Duncan Gibbins and Yale Udoff |
| 7. <i>Alien: Resurrection</i> | 1997 | United States | Jean-Pierre Jeunet | Joss Whedon |
| 8. <i>Simone</i> | 2002 | United States | Andrew Niccol | Andrew Niccol |
| 9. <i>Her</i> | 2013 | United States | Spike Jonze | Spike Jonze |
| 10. <i>Ex Machina</i> | 2014 | United Kingdom | Alex Garland | Alex Garland |

Note. Table 1 lists the films that make up the sample of the present discourse analysis in chronological order.

For sample delimitation purposes, all selected films belong to the sci-fi genre according to the Internet Movie Database (IMDb), the main online database on film and television available today and, by the way, owned by Amazon. This criterion was responsible for excluding titles such as *The Doll* (Lubitsch, 1919), mentioned by scholars of the relations between women and technology, such as Julie Wosk (2015), as the first feature film with the presence of a machine-woman. However, according to IMDb criteria, the film is a fantasy and not science fiction example.

The focus on science fiction cinema has also caused the disregard of some spy movies, classified in the action-adventure genre, and which usually repeat the success recipe of the famous *007* franchise: a combination of lots of action, star-crossed leading men and beautiful sexy women – be they ‘real’ or man-made, as in *Some Girls Do* (Thomas, 1969). A satire on this style of film was made by the action-comedy trilogy *Austin Powers* (1997, 1999 and 2002), starring actor Mike Myers, who brought hypersexualized fembots armed to the teeth in place of the sexy and fragile young ladies of classic spy movies, proposing, in its own way, a reflection on this construction.

It is important to point out that we are fully aware of the fact that, despite being recurrent, the classification according to genres such as comedy, fantasy, adventure, among others, in cinema can often seem arbitrary and, therefore, be object of contestation. However, we believe that this is a necessary cutout for the purpose of delimiting the sample, so that it would not become too comprehensive or subjective.

Another point common to all selected feature films is the presence of at least one character who is a female-genderized technology, understood in this dissertation by the umbrella term of machine-woman. This nomenclature was chosen to encompass also genderized technologies whose existence is entirely virtual, as is the case of the characters Simone (Rachel Roberts) and Samantha (Scarlett Johansson), protagonists of the films *Simone* (Niccol, 2002) and *Her* (Jonze, 2013), respectively. These characters, extremely relevant to the present analysis, could not be contemplated if we chose to use the term gynoid – the female equivalent of android – or fembot, as both presuppose the material existence of the female machinic physical body, as in the classic representations of robots for example.

From silent cinema to current innovations in world cinematography – it is worth noting that *Ex Machina* (Garland, 2014), the most recent film in the selection, was awarded the Oscar for visual effects in 2016 – the sample covers ten decades of film history, seeking to be as representative as possible, with a balanced distribution throughout the period. However, two aspects deserve to be highlighted about the time frame presented: the absence of titles in the 1930s and 1950s, and the presence of two films in the 2010s. Regarding the first point, we even evaluated the inclusion of the film *Pygmalion* (Asquith & Howard, 1938), but, like *The Doll*, it did not fit in the science fiction category by IMDb and, therefore, could not be contemplated. The absence of machine-woman titles in the 1950s, according to Wosk, is a fact directly related to the post-war period.

During World War II, images of artificial females in films and art were scarce. America's soldiers were more apt to fantasize about pin-up girls and movie stars like Betty Grable than fantasize about Galateas-come-to life or compliant sexy female robots and dolls in science-fiction fantasies. (Wosk, 2015, 1952 Kindle position).

On the other hand, by analyzing a total of 23 feature films, our research found that the presence of machine-women in cinema has grown and become a bit more diverse, especially since the 2000s. Therefore, we had two titles chosen in the same decade of 2010: *Her* and *Ex Machina*. It was after the turn of the 21st century that there were releases such as the remake of *The Stepford Wives* (OZ, 2004); the sequel to *Blade Runner* (Scott, 1982), *Blade Runner 2049* (Villeneuve, 2017); as well as novelties such as the animated *Wall-e* (Stanton, 2008); and stories created outside the United States-Europe axis, such as the South Korean romantic comedy *I'm a Cyborg, But That's OK* (Chan-wook, 2006), whose script is signed by female author Seo-kyeong Jeong.

A quantitative analysis of the presence of machine-woman in cinema, not only in science fiction, but in general, would be a very interesting topic for future research; however, this is not the intention of this dissertation. But we believe that a greater emphasis on this theme in the seventh art may be related to the very technological developments observed after the year 2000, especially with the popularization of digital communication networks, broadband Internet and cell phones around the world, besides, of course, important advances in research with Artificial Intelligence and its applications in everyday life.

The ten selected films further reinforce some issues that we sought to shed light in our literature review: the predominantly male and geographically concentrated character in the Global North of world cinema production, not only of science fiction, but in general. Of the 24 names of professionals present in Table 1, among filmmakers and screenwriters, only Thea Von Harbou, who wrote and scripted *Metropolis* (Lang, 1927), stands out, highlighting the pioneering role of women in science fiction – a pioneering that, we will see later, was stifled by men as the years went by and whose resumption was only noticed in literature from the 1970s on, but not so much in cinema.

It is worth mentioning that during the selection phase of the sample, we searched for films written and/or directed by women to counterbalance the present list, which is predominantly male, but, unfortunately, we did not find any features that met the criteria mentioned above. The same was done in order to search in the literature and in IMDb itself for films in different languages, made outside the United States-Europe axis, but we were also unsuccessful, since it is notorious the concentration of world film production in the Global North, especially in Hollywood. In this sense, we are faced with one of the great challenges of discourse analysis: the search for diversity in the study material. Like historians, discourse analysts “are forced to rely on images and texts that are produced by the institutionally and socially powerful” (Rose 2008, p. 166). These are “the perspectives that usually remain for history i.e. survive in archives and libraries” (Álvares, 2020).

It is interesting to draw here a brief geographical parallel between cinema and technology, for it is no mere coincidence that Hollywood and Silicon Valley are practically neighbors: both are located in the US state of California. This geographical concentration is precisely one of the keys to better understand the lack of diversity observed not only in cinema, predominantly male and white, but also in technology itself, where a few companies, the so-called 'Big Techs' (Google, Amazon, Apple, Microsoft, Facebook etc.), concentrate fortunes that extrapolate trillions of dollars (Santana, 2021) and are also notoriously dominated by male and white professionals "as recruiters for technology companies in Silicon Valley estimate that the applicant pool for technical jobs in artificial intelligence (AI) and data science is often less than 1 per cent female" (West *et al.*, 2019, p. 13). This is a relevant finding for critical genealogical work, because to achieve its goals it is necessary to go beyond the images and technologies themselves and trace the social location of their producers and audiences.

It is also known that, unlike content analysis, where the large number of the sample is of utmost importance for obtaining results, in discourse analysis it is the quality of the selection that is most important. With this in mind, the ten films that will compose the critical genealogy of almost a century of science fiction cinema were chosen based on the idea that they promote a certain discursive formation, constructing or deconstructing specific gender views and, consequently, relevant power relations to better understand the phenomenon of popular female digital voice assistants today.

Intertextuality being an extremely important feature for the methodology of Foucauldian discourse analysis, since "a text or image depends on all the signifiers inherent in other texts and images" (Rose, 2008, p. 142), we propose in our analysis a relational framework that intends not only to consider the gender truth claims present in the analyzed films, but also to cross-reference them, whenever possible, with what can be observed in everyday life with Alexa and other popular digital voice assistants. In view of this approach, we will consider three axes or three main constructions about the machine-woman: 1. as assistant, 2. as cultural representative of male fears and anxieties, and 3. as a space of sexual domination.

The first category will focus on the construction of the woman, or more specifically of the machine-woman, as assistant from her understanding as 'the other', a lesser copy, a puppet or facsimile of the man. This millenary vision widely spread in Western culture goes back to the mythologies of Ancient Greece, populated by the golden woman-shaped automata of the god Hephaestus and by Galatea, a sculpture created by Pygmalion who became a woman by receiving the touch of the goddess Aphrodite. To understand this phenomenon, we will dive into the narratives of the films seeking to answer questions such as: is a man always the creator of the machine-woman? In what way is this creator presented? To what end is the machine-woman developed? What is her role? What interests does she serve in the narrative? In the case of the technology that is our object of study, digital voice assistants, this vocation is already stamped in the name voice assistant, generating some interesting reflections that we will explore, such as the necessity of launching a parental version of Alexa, the Amazon Echo Kids, to teach children to speak with a certain degree of civility at home.

The second category that will be worked on in this discourse analysis focuses on the artistic and cultural portion of this research, as it deals with the machine-woman as a representation of male fears and anxieties regarding women and their sexuality, which is often presented in a limited way by the dualism between “asexual virgin-mother or prostitute-vamp.” (Wosk, 2015, p. 1518). This is the case with the recurring theme that presents machine-women who run out of control, who rebel and impose fear, turning into real monsters and/or causing deep deceptions. What is the fate of these machine-women who escape from expectations, these artificial witches, in the narratives? Do they suffer any punishment, escape unscathed, receive any reward?

These feelings towards what is feminine are confused in science fiction stories with the same fears and anxieties that technology arouses in men, a constant theme in the genre since its inaugural work in literature: in Mary Shelley’s *Frankenstein*, the man-made monster rebels terribly after having his desire for a female companion denied by his creator. That is, even before experiencing the creature’s wrath and fearing for his own life and the lives of those he loves most, Dr. Frankenstein experiences the extreme anxiety represented by the monster-woman and the ‘natural’ possibility of procreation.

Finally, the third category, the machine-woman as a space of sexual domination, intends to investigate her construction on and off the cinema screen as something ready to be sexually and verbally abused. Feminist film theorists have been pointing out for decades that “the representation of woman as spectacle-body to be looked at, place of sexuality, and object of desire, so pervasive in our culture, finds in narrative cinema its most complex expression and widest circulation” (de Lauretis, 1984, p. 4). But how can this be observed in science fiction films or, more specifically, in the machine-woman? Is she verbally harassed in the movies? And sexually? How does she respond to these harassments? Are there visual cultural standards (beauty standards, ways of dressing and behaving) that ‘sexualize’ her in the face of the prevailing heteronormative view? And, on the other hand, DVAs, how do they respond to harassment perpetrated in ‘real life’? Are there repeating patterns between both representations of the machine-woman? These are some of the questions we will explore during the analysis of the dialogues and images in the films and also the answers of the digital voice assistants.

Table 2**Categories Used for Discourse Analysis**

| Category | Key questions |
|---|--|
| 1. The machine-woman as assistant | <ul style="list-style-type: none">- Who creates the machine-woman in the films analyzed?- In what way is this creator presented by the narrative?- To what end is the machine-woman developed?- What is her role? What interests does she serve?- Is it possible to perceive reflections of this construction in digital voice assistants? |
| 2. The machine-woman as a cultural representative of male fears and anxieties | <ul style="list-style-type: none">- In the narratives, does the machine-woman subvert the rules in some way or does she always do what is expected of her?- What is the fate of the machine-women who escape the expectations in the narratives?- Do they suffer any punishment, escape unpunished, get any reward? |
| 3. The machine-woman as a space of sexual domination | <ul style="list-style-type: none">- Is the machine-woman verbally harassed in the movies? And sexually?- How does she respond to these harassments?- Are there visual cultural standards (beauty standards, ways of dressing and behaving) that 'sexualize' her in the face of the prevailing heteronormative view?- And on the other hand, how digital voice assistants react to similar harassments perpetrated in 'real life'?- Are there repeating patterns between both representations of the machine-woman? |

Note. Table 2 provides a breakdown of the categories by the key questions that the discourse analysis will seek to answer

Literature Review

It is impossible to understand the world we live in, whether from a cultural, political, or philosophical perspective, without thinking about gender issues⁵. These issues do not run in parallel, but rather underline and permeate all the processes by which we construct the world, at the same time that the world shapes us as social beings. This feminist constructivist view, which has Judith Butler as one of its great exponents, argues that gender studies in any field of knowledge should not be seen and conducted as niche approaches, as if they were at the margins of mainstream knowledge production. According to Butler and her concepts of gender as performance⁶ and intersectionality⁷, gender is a fundamental and inseparable part of the social issues that researchers address to understand the phenomena of their time.

Facing the challenge proposed by this approach, this chapter intends to dive into some of the most relevant feminist thoughts in the fields of cinema and technology, approaching them when possible and contrasting them when necessary, in order to contribute to a transversal understanding about our object of study: the genderized technologies present today in the market from the imaginary of the machine-woman character in science fiction films. In the first part of the chapter, we highlight the thoughts of filmmakers and researchers of film studies and science fiction, such as Laura Mulvey, Teresa de Lauretis, Lola Robles and Claire Johnston, who, although already much discussed and even criticized, have given immense theoretical contribution to the understanding of the ways in which patriarchy is constructed and reinforced in people's imagination through different narratives: from the Greek myths founding Western culture to the classical Hollywood cinema, highlighting here the science fiction genre. And, most importantly, many of these authors have taken their reflections to the artistic making, that is, to the movie theaters themselves, transforming them into fruitful territory for the discussion of gender issues. In this process of investigation and creativity, the cinema, as a particular and powerful form of mass media, appears sometimes as a tormentor, sometimes as

⁵ The distinction between sex and gender is an important argument for feminist theory, critical of the naturalistic view that sex and sexuality should dictate women's social existence. In the words of Judith Butler (1988): "Gender, in this sense, is by no means a stable identity or locus of agency from which various acts proceed; rather, it is an identity tenuously constituted over time – an identity instituted through a stylized repetition of acts" (Butler, 1988, p. 519).

⁶ Judy Wajcman offers an objective explanation of the Butlerian concept of 'gender as performance': "Influenced by poststructuralism, she [Judith Butler] conceives of 'gender as performance' in order to emphasize that gender is not fixed prior to social interaction, but is constructed in interaction" (Wajcman, 2004, p. 53).

⁷ The term intersectional feminism was coined in 1989 by Kimberlé Crenshaw. Judith Butler and Angela Davis are some indispensable names of this current of thought (Alexino, 2017). In *Gender Trouble*, a landmark work of Queer Theory published in 1990, Butler offers the following defense for intersectional thinking in feminism: "(...) gender is not always coherently or consistently constituted in different historical contexts, and because gender intersects with racial, class, ethnic, sexual, and regional modalities of discursively constituted identities. As a new result, it becomes impossible to separate 'gender' from the political and cultural intersections in which it is invariably produced and maintained" (Butler, 2020:582-586 Kindle position).

the safest escape route for women in the essential exercise of imagining other possible realities.

In the second part of this literature review, the focus is directed toward technology, science, and feminism. Programmers, scientists and thinkers such as Alison Adam, Donna Haraway, Judy Wajcman and Sadie Plant, who have pointed to issues of representativeness, this time in founding ‘myths’ of another nature: science and the Cartesian ‘subject of knowledge’. The authors follow a theoretical path towards a feminist or post-humanist epistemology, with Haraway’s emblematic figure of the cyborg, passing through language – and here too science fiction, or ‘speculative feminism’, plays an important role in rethinking representations of women on a symbolic level.

Whether from the seventh art or from experiments with Artificial Intelligence, the effort to deconstruct both theoretical fronts reaches to the foundations of Western culture: the founding myths that continuously present and represent women “as other to the mainstream norm and how this otherness encapsulates a number of preconceived notions about sexuality, identity, behavior, but also the ability of misbehavior to impact, to dominate” (Gil, 2020). This is what we will discuss in the following pages.

2.1 Cinema and Feminism

The 1970s are considered the initial milestone of the formal relationship between feminism and cinema, when “several filmmakers and film studies researchers sought to apply philosophical and activist principles to their field of study⁸” (Pereira, 2016, p. 89). The emergence of a new feminist theory in this context was not by chance. It is worth remembering that it was in this same period, especially during the 1960s and 1970s, that feminist militancy experienced one of the most effervescent moments in its history, at the crest of the so-called second wave of the feminist movement, which has in Simone de Beauvoir and Betty Friedan two of its fundamental authors.

The history of feminism is commonly divided into waves, more precisely into three waves. Very briefly, they range from the suffragist movement of the early twentieth century – the so-called first-wave – to the movements that began in the 1990s – the third-wave – which highlighted the feminist movement’s need to recognize multiple feminisms, thus replacing sex-based essentialism with gender-based deconstruction, including of LGBTI+ issues as well as intersections with the domains of race, class and religion, for example. The second wave occurred somewhere between the first and third waves, during the 1960s and 1970s, mainly comprising women’s struggle for reproductive rights, access to education, and equality in the labor market, in addition to discussion over symbolic issues of representation. It is worth mentioning that this classification in waves is not consensual neither among activists nor among scholars, but it serves as a roadmap for better understanding a movement as plural and

⁸ “Diversas cineastas e pesquisadoras de estudos fílmicos procuram aplicar os princípios filosóficos e militantes à sua área de estudo” (Pereira, 2016, p. 89).

rich as the feminist one. Likewise, there is no consensus about the emergence of a fourth wave, which would correspond to feminism in the post-Web 2.0 digital era.

Attuned to the issues discussed by mid-twentieth century activists, who were experiencing “an anthropological drive to understand the role of women, to make their role visible, and also to understand their anthropological space in the construction of culture” (Gil, 2020), incipient feminist film theory emerges with the “goal of understanding cinema as a cultural practice that represents and reproduces myths about women and femininity” (Smelik, 2016, p. 1). Parallel to all this theoretical and political discussion, there was also a rich experimental production of feminist cinema at the time, with the launch of publications such as the journal *Women and Film* (1972) and the holding of the first festivals exclusively for women filmmakers in the United States and the United Kingdom – major global cultural powers, with film industries capable of influencing production in the rest of the world. In short, the first authors to explore cinema from a feminist perspective argued that cinema should not be seen as a simple reflection of social relations, since a film actively constructs references to gender and sexuality.

But how does the anthropological construction of gender and sexuality take place? What is the role of cinema as a mass medium in this phenomenon? How can a film serve as a space to rethink gender issues and the role of women? To try to answer these and other questions, authors who have dedicated themselves not only to questioning but also to recreating the production of cinema, especially between the 1960s and the 1980s, have used insights from semiotics, Marxism, European structuralism, and especially psychoanalysis to develop their own methodological approaches.

The first author to develop a more consistent theoretical thought in this regard is the British Claire Johnston. Together with Laura Mulvey, she stood out as a major exponent of the so-called British theoretical approach to feminist film criticism⁹. Her work became a dominant trend in this field until at least the 1990s, when it started to be widely reviewed and debated by queer and post-colonial approaches, bases of the so called third wave of the feminist movement, which made clear the need to speak of ‘feminisms’ (plural), because a single ‘feminism’ would not be enough to account for all the multiplicity of the reality of what it is to be a woman in the world. However, even after timely criticisms, which highlighted their limitations mainly in the face of the view of women of color and of different sexual orientations – trans, lesbian, non-binary, etc. –, Johnston and Mulvey’s contribution to the field of feminist film theory remains fundamental and should not be disregarded, for:

⁹ American author B. Ruby Rich (Rich, 1978, as cited in Thorham, 1999) makes a division between the ‘two voices’ of feminist film theory developed in the 1970s. According to her, on one side are authors like Sharon Smith and Molly Haskell, representatives of the so-called American current of the ‘sociological approach’. On the other, there are names like Claire Johnston and Laura Mulvey, who represent the so-called ‘theoretical approach’ developed in the UK. Within this proposed division, it is possible to state that the British current was more prominent, influencing a larger part of the theoretical production of feminist cinema from then on, especially during the 1980s, and that is why it was highlighted in this literature review.

If that politics has had more recently to recognise divisions and fragmentations in subjectivity other than those produced by the male/female opposition, and histories and experiences other than those of the white woman under Western patriarchy, such recognitions of the differences between women may be seen to signal the further development and not, as some have suggested, a loss of direction in feminist film theory. (Thornham, 1999, p. 4)

Johnston came to prominence in her field by organizing the publication *Notes on Women's Cinema* (1973), released by the Society for Education in Film and Television in the United Kingdom. The main article of the publication was also written by her: *Women's Cinema as Counter-Cinema*. In it, Johnston argues that every film carries an ideology or a "representational system, or 'way of seeing', which appears to us to be 'universal' or 'natural', but which is in fact the product of the specific power structures which constitute our society" (Idem, 1999, p. 12). In this sense, then, every film, as well as other cultural products, fits into a patriarchal ideology that will dictate the meaning of the sign – or, in her words, the 'myth' – 'woman' without this being perceived at first sight, since it is naturalized.

The author begins the article with an excerpt from German critic and art historian Erwin Panofsky (1934) on the function of stereotypes in the early years of cinema. "Panofsky locates the origins of iconography and stereotype in the cinema in terms of practical necessity; he suggests that in the early cinema the audience had much difficulty deciphering what appeared on the screen" (Johnston, 1973, as cited in Thornham, 1999, p. 32). However, Johnston argues that this argument would explain the use of the feature in the early years of cinema, but the "far greater differentiation of men's roles than of women's roles in the history of the cinema relates to sexist ideology itself and the basic opposition which places man inside history, and woman as a-historic and eternal" (Idem, 1999, p. 32). In summary:

Myth then, as a form of speech or discourse, represents the major means in which women have been used in the cinema: myth transmits and transforms the ideology of sexism and renders it invisible when it is made visible it evaporates and therefore natural. (Ibidem, 1999, p. 32)

The view of women as myth in cinema is developed a little further by British filmmaker and author Laura Mulvey in her emblematic essay *Visual Pleasure and Narrative Cinema* (1975), in which she seeks to demonstrate "the way the unconscious of patriarchal society has structured film form" (Mulvey, 1989, p. 14). Published in the journal *Screen*, in the Fall of 1975, this work became a classic not only in feminist film studies, but in film studies generally, being widely read, discussed, and critiqued by inaugurating the so-called feminist critique of 'cine-psychoanalysis'.

As Mulvey herself argues, psychoanalysis is an important theoretical and political tool for feminist film studies because it “can at least advance our understanding of the status quo, of the patriarchal order in which we are caught” (Idem, 1989:15). By combining concepts such as scopophilia – “pleasure in looking at another person as an erotic object” – and ego libido – processes of fascination and recognition with the human figure, which Jacques Lacan called the ‘mirror phase’ in child development – with the analysis of a series of classic Hollywood films, including Alfred Hitchcock’s *Vertigo* (1958) and Josef von Sternberg’s *Morocco* (1930), Mulvey advances the discussion initiated by Johnston by proposing that:

The actual image of woman as (passive) raw material for the (active) gaze of man takes the argument a step further into the content and structure of representation, adding a further layer of ideological significance demanded by the patriarchal order in its favourite cinematic form – illusionistic narrative film. (Mulvey, 1989, p. 25)

The reasoning presented by Mulvey, in general terms, proposes the following: cinema is capable of satisfying the primordial pleasure of seeing, corresponding to what Freud designated as scopophilia, a pleasure that is not located in the erogenous zones of the body, but rather in the curious and controlling gaze that takes other people as an object. This fundamental pleasure is discovered by the child before language, in the already mentioned Lacanian mirror phase: “the moment when a child recognizes its own image in the mirror is crucial for the constitution of the ego” (Mulvey, 1989, p. 17).

All these aspects are at play in the movie theater at the moment of projection and the film then becomes capable of “allowing temporary loss of ego while simultaneously reinforcing it” (Idem, 1989, p. 18). From this reasoning, Mulvey argues that the gaze in cinema, within the patriarchal system in which it is embedded, is always male. The ‘male gaze’ both satisfies scopophilia and helps to mold it in its social aspect linked to narcissism, and this is where the big question for feminism lies:

In a world ordered by sexual imbalance, pleasure in looking has been split between active/male and passive/female. The determining male gaze projects its fantasy onto the female figure, which is styled accordingly. In their traditional exhibitionist role women are simultaneously looked at and displayed, with their appearance coded for strong visual and erotic impact so that they can be said to connote to-be-looked-at-ness. (Ibidem, 1989, p. 19)

In summary, patriarchy, as an ideology, understood here as a representational system, permeates with its discourse the entire cinematographic production in an almost invisible way, because it is naturalized by discursive forms such as the myths that involve the sign ‘woman’ (Johnston, 1973, as cited in Thornham, 1999, p. 32). To make these invisible processes even more palpable, Mulvey dives into the analysis of Hollywood blockbusters, showing how these processes are operated in the filmic content and structure, based on concepts borrowed from psychoanalysis, among which voyeurism, fetishism, besides the already mentioned scopophilia and ego libido.

What both authors of the so-called British theoretical current of feminist film studies of the 1970s have in common, as pointed out by B. Ruby Rich (1978), is a good deal of pessimism that “stems from their overvaluation of the production aspect of cinema, a misassumption that cinematic values are irrevocably embedded at the level of production and, once there, remain pernicious and inviolable” (Rich, 1978 as cited in Thornham, 1999, p. 45). This reading has yielded much criticism and response from other feminist authors and activists, including Rich herself, who asserts that women as viewers should not be seen merely as passive recipients of patriarchal ideology, for by interacting with both the text and the context, they are able to dialectically position themselves within and without these invisible structures.

Rich’s point of view, which, it is worth noting, became alongside Teresa de Lauretis one of the leading names in queer film theory during the 1990s, echoes the approach proposed by the Theory of Uses and Gratifications of Mass Media, which, as the name implies, analyzes the uses individuals make of media and the gratifications they derive from these uses through the satisfaction of certain needs. “This model of communication assumes an audience that is at least as active as the sender. It also implies that a message is what the audience makes it, not what the sender intends it to be(...)” (Fiske, 2002, p. 201).

The practical application of Uses and Gratifications Theory in studies of the ethnography of audiences has made it possible to understand, for example, the particularities of the reading of popular romance novels by American housewives in the 1980s. As Fiske (2002) points out, citing a study by Radway (1984), it would be easy and even a little obvious to relate the content of this genre of literature to the maintenance of the sexual status quo in a patriarchal society. However, the application of Uses and Gratifications Theory showed that women read these novels in a different way than expected.

For them [the female readers], the plot did not trace the victim dimension and the suffering of the heroine, through which she achieved the ultimate success (marriage), but instead traced the gradual feminization of the hero: only after his cruelty had humanized, only after his cold detachment had melted away and he had become more sensitive towards her, only when he had ‘feminized’ himself in this way would she consent to marry him. While the structure of the novels preferred masculine values to feminine ones, some female readers ‘negotiated’ the text in order to produce readings that placed feminine values above masculine ones. (Fiske, 2002, p. 209)

Limitations aside, what we believe deserves to be highlighted in the work done by Claire Johnston and Laura Mulvey is the inauguration of a theoretical approach that goes beyond films and movie theaters, evidencing the origins of the very process of women's oppression under the phallogocentric order. Or, as Ana Catarina Pereira explains, "in practice, the new methodology allowed for an unraveling of the patriarchal myths that position women as the 'other', displaying the restrictions and obstacles faced by the female condition as natural and immutable¹⁰" (Pereira, 2016, p. 111). And this analysis is fundamental to look more specifically at our object of study: the presence of machine-women or genderized technologies in science fiction films and in the market.

2.2 Women and Technology: Science Fiction and Technofeminisms¹¹

As we observe in the field of film studies, in general, "Western feminist debates around identity until the mid-1980s were trying to theorize a 'preconceived, pregiven 'women's identity,'...an identity common to all women, woman's 'identity' as 'the other' (Crosby, pp. 130-131)" (Melzer, 2006, p. 16). However, this single notion of identity common to all women came to be widely questioned especially by theorists of the so-called queer and postcolonial currents of feminism, influenced this time by poststructuralism, who pointed to the weaknesses of the heteronormative, bourgeois and majority-white approach of the early years of cine-psychoanalysis: "questions of class and race have pushed feminism further from the experience of individual oppression into a wider political arena" (Lefanu, 1989, pp. 4-5).

Instead of a common denominator that sought a unity among all women, feminist authors such as bell hooks, Monique Wittig, Teresa de Lauretis, Adrienne Rich, among others, argued for the importance of 'difference,' i.e., "the notion that 'woman' consists of many diverse components that are positioned in very different relations to power" (Idem, 2006, p. 16). What is more, the very notion of 'woman' was put in check and the work of Judith Butler was highlighted in this sense. For this author, the binary opposition between man/woman is the primordial myth that reinforces a compulsory heterosexuality in our society. Despite being naturalized, these gender identities are, in fact, permanently constructed and repeated performances: "a kind of imitation for which there is no original" (Butler, 1991, p. 21 as cited in Thornham, 1999, p. 290).

¹⁰ "Na prática, a nova metodologia permitiu um desvendamento dos mitos patriarcais que posicionam a mulher como o 'outro', exibindo as restrições e obstáculos enfrentados pela condição feminina como naturais e imutáveis" (Pereira, 2016, p. 111).

¹¹ Technofeminism is an approach advocated by Judy Wajcman that gives the title to her book published in 2004. According to the author, technofeminism assumes that there is a mutually constructed relationship between gender and technology and that, in this way, feminism needs to strategically engage with technoscience as its main critique. "In other words, gender relations can be thought of as materialized in technology, and masculinity and femininity in turn acquire their meaning and character through their enrolment and embeddedness in working machines" (Wajcman, 2004, p. 107). Inspired by this concept, we use the term technofeminism in plural in the title of this section, which deals with different more or less critical feminist approaches to technoscience.

It is precisely in this context of great effervescence of thought around diversity and the need to destabilize the concept of identity – which, as noted earlier, will culminate in the emergence of the so-called third wave of the feminist movement – that theoretical efforts focused both on the cultural genre of science fiction and around science and technology more broadly gain prominence. And this is not a mere coincidence. As we will see in the following pages, feminist reflections on both fronts often intermingle and feed off each other:

Thus, creative explorations of cultural anxieties in science fiction often involve theoretical investigations as well as theory production through complex interactions of reader, writer, and text. As feminist biologist and theorist Donna Haraway observes in *How Like a Leaf*, ‘science fiction is political theory’. The intersections of theory, politics, and pleasures of imagination enable creative and complex theorizing. (Melzer, 2006, p. 10)

2.2.1 Science Fiction

“[In science fiction] The sex roles are as unyielding as the metal in the space ship’s hull; emancipation is an unknown word.”
(Lundwall, 1971, 1770-1772, Kindle position)

Although its origins lie in the early nineteenth century, as we have seen, it was not until the 1940s that the term science fiction became popular “to refer to a form of genre fiction characterized by the narration of imaginative and speculative alternative worlds” (Herman *et al.*, 2000, p. 518). The basic difference of science fiction to other genres of fiction such as fantasy and horror lies in the technical verisimilitude that its stories propose, presenting alternative worlds as real possibilities, even if in a still distant future, as the Spanish writer Lola Robles (2008, September 13) explains: “cf [science fiction], however, is not interested in the impossible, but in the plausible possible; it tries to explain the strange elements on the basis of the development of science, technology and the evolution of human beings.”¹² It is precisely in this possibility of what would be impossible becoming real that the great success of the genre lies: “Popular culture’s fascination with science fiction is rooted in the combination of strangeness and familiarity that make up the particularities of the genre. This tension between the ‘known’ and the ‘unknown’ is at the heart of science fiction” (Melzer, 2006, p. 3).

¹² “A la cf [ciencia ficción] sin embargo no le interesa lo imposible, sino lo posible que cuente con verosimilitud; trata de explicar los elementos extraños basándose en el desarrollo de la ciencia, la técnica y la evolución de los seres humanos.” Available at: <http://escritorasfantastikas.blogspot.com/2008/09/mujeres-y-ciencia-ficcin.html>. Retrieved on February 8th, 2021.

There is today a certain consensus that this intention of verisimilitude was first observed in a work of fiction in Mary Shelley's *Frankenstein or the Modern Prometheus*, published in 1818. In the story, then considered the genre's inaugural, the monster appears as a human creation that was only possible through scientific knowledge and, in this way, the fantastic becomes believable – and even more frightening. The pioneering role of women in science fiction can also be seen in cinema, with the work of German actress and filmmaker Thea Von Harbou and her emblematic film *Metropolis* (Lang, 1927): "Fritz Lang, Von Harbou's husband, directed what would become one of the greatest films of silent cinema. But the novel and screenplay were hers,¹³" reinforces Rafael Lara (2005, September).

But this pioneering of women in science fiction production was overshadowed as the years went by. As it became more and more popular, with the launching of several magazines and publications aimed at the niche, especially in the United States in the 1930s and 1940s, the genre became more and more recognized as a male domain where women were not welcome even as supporting characters. To illustrate the position of many science fiction authors of that time, Lundwall (1971) cites the famous writer Isaac Asimov, known as the 'father of science fiction', and his column in the November 1939 issue of *Startling Stories* magazine:

'There is a great deal of significance, I think, in the fact that the four stories in the September issue of *Startling Stories* did not contain a single female character. Of course, I would be the last to claim that all females be abolished. Women, when handled in moderation and with extreme decency, fit nicely in science fiction *at times*. However, the September issue goes to prove that good stories can be written even with the total absence of the weaker sex.' (Asimov, November 1939, as cited in Lundwall, 1971:1801 Kindle position, emphasis by the author).

Different authors offer different explanations for the phenomenon that placed women at the margins of the genre, despite its pioneering spirit and despite the fact that there have always been women consuming and producing science fiction – it is worth noting that many of these authors, including female authors, hid their identities and used male or undefined gender pseudonyms to get published in specialized magazines¹⁴. In a perspective that resonates with the Frankfurt School philosophy, which has in Theodor Adorno and Max Horkheimer two of its greatest exponents, the critic and writer Lundwall, for example, attributes the phenomenon to the game of market interests of the powerful mass industry, which bet on the Romance as the main female genre in literature and cinema for purely commercial reasons.

¹³ "Fritz Lang, el marido de Von Harbou, dirigió la que sería una de las mejores películas del cine mudo. Pero la novela y el guión eran de ella." Available at: <http://www.pensamientocritico.org/raflar0905.htm>. Retrieved on February 8th, 2021.

¹⁴ For some time, for example, the authorship of *Frankenstein* was attributed to Percy Bysshe Shelley, Mary Shelley's fiancé at the time, because the first edition of her book was published without the author's name and carried only a preface signed by the fiancé, who was also a writer, and a dedication to William Godwin, her father. Another emblematic case is that of Alice Sheldon, who published several science fiction stories and became famous under the pseudonym James Tiptree Jr.

At the beginning of the twentieth century women were starting to have their chance to lead useful, creative, interesting lives. But that did not suit commerce: it needed them much more as mass consumers than as producers—except on the most routine levels. So Romance was adopted and developed as a weapon against their further progress and to promote consumption, and it was used intensively. (Idem, 1971, 1845-1848 Kindle position)

Other science fiction theorists (Lara, 2005; Lefanu, 1989; Pereira, 2016; Robles, 2008), however, attribute this undeniable masculinization of gender to its umbilical relationship with harder science and technology, traditionally masculine territories: “masculine concerns because access to these areas was effectively denied to women in the real world, and science fiction, like all writing, is written from within a particular ideology” (Lefanu, 1989, p. 3). This fact, coupled with the decades-long commercial success of stories created ‘by men for men’ in magazines and books, on television and in movies, may have contributed to women being less interested in and identifying with science fiction than with other genres such as Romance mentioned by Lundwall, for example.

Both perspectives may make sense, but they are insufficient to account for the transformation of a genre with such imaginative and socially critical potential as science fiction into an ‘Intergalactic Suburbia’, to use the apt definition coined by the American science fiction writer and critic Joanna Russ (1972).

The term [*Intergalactic Suburbia*] criticizes not only gender but also class and race structures that Russ saw as perpetuated within the science fiction genre, which described ‘white, middle-class suburbia. Mummy and Daddy may live inside a huge amoeba and Daddy’s job may be to test psychedelic drugs or cultivate yeast-vats, but the world inside their heads is the world of [suburban] Westport and Rahway *and that world is never questioned.*’ (Russ, 1972, p. 81 as cited in Melzer, 2006, p. 5, emphasis by the author).

These were decades of ‘intergalactic suburbia’, when emancipation was an unacknowledged word and women were almost always invisible, expendable, stereotyped according to the sexual status quo of the time. They often appeared merely as narrative accessories or decorative objects at the service of the white male protagonist, especially when she was scantily clad and defenseless – waiting for a savior of the opposite sex, like an enchanted prince – on the covers of specialized magazines and on the posters of movies and TV series, feeding the scopophilia of the male audience.



Figure 1: Movie posters from left to right: *Forbidden Planet* (1956), directed by Fred M. Wilcox, and *The Day of The Triffids* (1962), directed by Steve Sekely.
 Source: www.amazon.com.

Differently from what happened with the classical Hollywood cinema and the so-called European authorial cinema, the representation of women in science fiction was initially questioned by feminism not through a systematized theoretical effort, as it happened with Mulvey and Johnston’s methodological current of cine-psychoanalysis, but from the artistic making itself, especially in literature. Considered for a long time as a minor literary genre, science fiction inhabited “a marginalized position within academic discourse – which mainly treats it as a pulp or popular genre outside of ‘serious’ theoretical frameworks (...).” (Melzer, 2006, p. 4).

But if the theoretical militants twisted their noses at first, the feminist writers embraced science fiction especially from the 1970s on, a decade in which great successes of the genre were also released in the cinema, such as *Star Wars Episode IV: A New Hope* (Lucas, 1977) and *Alien* (Scott, 1979), taking science fiction to a new scale of global reach and repercussion. In this way, artistic making – in literature – and feminist theoretical production began to go hand in hand, which for Scott Bukatman (1993) was a perfectly understandable move: “given a thematic profoundly engaged with social structures and sexual difference and potentially heterotopic discursive practices, the relevance of sf to a feminist politics should not be mysterious” (Scott Bukatman, 1993 as cited in Melzer, 2006, p. 4).

With their creative and contesting writing, referred to as 'survival writing'¹⁵, authors such as Octavia E. Butler, Ursula K. le Guin, and Joanna Russ, to name just a few, showed that science fiction could go far beyond colonizing adventures in space, alien wars, and reactionary futurism. The genre would then go towards a new aesthetic and political way of contesting and thinking about issues of identity construction and the establishment of the 'other' outside the mainstream norms, both very dear discussions for feminism especially from the third wave on, with all the influence of the post-structuralism of Ferdinand de Saussure, Louis Althusser and Michel Foucault, among others.

Moreover, the stories narrated by these female writers became crucial to rethink and imagine the complex relationship between women and technology at the end of the 20th century, especially in a scientific universe dominated by patriarchal logic and in global expansion with the new electronic and communication networks. These issues echoed among several feminist militants and theoreticians of science and technology, especially Donna Haraway and her emblematic figure of the cyborg.

2.2.2 Technofeminisms

"We march backwards into the future."

(Marshal McLuhan, 1967, p. 75)

The extensive work of the American biologist Donna Haraway, especially her *A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century* (1985), is considered fundamental to the deepening analysis between feminism, science, and technology. The work sheds light to questions of identity and subjectivity, gender asymmetries, the vision of the female body as a place for political struggle, and how the new networked technologies could be seen, once the phallogentric order that dominated them was subverted, as powerful allies in overcoming these challenges. As Marina Gazire Lemos (2009) explains, in her work:

¹⁵ "I started writing about power because it was something I had very little of," writes author Octavia E. Butler in the preface to one of her most notable works, *Kindred*, published in 1979 (Butler, 2020, 51-52 Kindle position).

Donna Haraway proposes a break with Marxism, radical feminism, and other social movements that have failed to operate with categories such as class, race, and gender. In relation to the feminist movement, Haraway's criticism concerns the way it has been operating with the category of 'woman' in a naturalized way. Thus, it would be necessary to break with this identity politics and replace it by differences and by a political coalition based on affinity and not on an identification conceived as 'natural'. The cyborg would thus be the model, the founding myth of this new politics of identification built on affinity, far from the logic of appropriation of a single identity. (Lemos, 2009, p. 7)¹⁶

Elaborated in the mid-1980s, in the context of the militarization of the space race, Haraway's Manifesto appropriates and gives new meaning to the controversial figure of the cyborg, which at first sight represents the 'enemy', violence, war, patriarchy, projecting dualisms of fascination and horror, seduction and repudiation, pain and pleasure. As a kind of rhetorical strategy and artistic expression in feminist science fiction, the cyborg is pointed out by Haraway as an imaginative key to rethink and overcome three basic but obsolete boundaries of Western culture: the boundary that separates the animal from the human, the organism from the machine, and that which separates what is physical and what is non-physical:

A cyborg is a cybernetic organism, a hybrid of machine and organism, a creature of social reality and also a fiction. Social Reality means lived social relations, it means our most important political construct, it means a fiction that can change the world. International women's movements have constructed what can be called a 'women's experience'. This experience is both a fiction and a more crucial, more political fact. Liberation depends on the construction of consciousness of oppression, depends on its imaginative apprehension, and thus on the awareness and apprehension of possibility. The cyborg is a matter of fiction and also of lived experience – an experience that changes what counts as female experience in the late 20th century. This is a life-and-death struggle, but the boundary between science fiction and social reality is an optical illusion. (Haraway, 1985 as cited in Tadeu, 2009, p. 36)¹⁷

¹⁶ Donna Haraway propõe um rompimento com o marxismo, o feminismo radical e outros movimentos sociais que fracassaram ao operar com categorias como classe, raça e gênero. Em relação ao movimento feminista, a crítica de Haraway diz respeito ao modo como ele vem operando com a categoria 'mulher' de uma forma naturalizada. Sendo assim, seria necessário romper com essa política da identidade e substituí-la pelas diferenças e por uma coalizão política baseada na afinidade e não numa identificação concebida como 'natural'. O ciborgue seria, assim, o modelo, o mito fundante dessa nova política de identificação construída a partir da afinidade, longe da lógica da apropriação de uma única identidade. (Lemos, 2009, p. 7)

¹⁷ Um ciborgue é um organismo cibernético, um híbrido de máquina e organismo, uma criatura de realidade social e também uma ficção. Realidade Social significa relações sociais vividas, significa nossa construção política mais importante, significa uma ficção capaz de mudar o mundo. Os movimentos internacionais das mulheres têm construído aquilo que se pode chamar de 'experiência das mulheres'. Essa experiência é tanto ficção quanto um fato mais crucial, mais político. A libertação depende da construção de consciência de opressão, depende de sua imaginativa apreensão e, portanto, da consciência e da apreensão da possibilidade. O ciborgue é uma matéria de ficção e também de experiência vivida – uma experiência que muda aquilo que conta como experiência feminina no final do século XX. Trata-se de uma luta de vida e morte, mas a fronteira entre ficção científica e realidade social é uma ilusão de ótica. (Haraway, 1985 como citado em Tadeu, 2009, p. 36)

The *Cyborg Manifesto* served as a theoretical basis for different feminist currents, among them the cyberfeminism, a term first coined by the Australian group VNS Matrix in 1991. The approach emerged in the midst of the third wave of the feminist movement, when plurality became the watchword with the shift from the term 'woman' to 'women' and, consequently, from 'feminism' to 'feminisms'.

There are several definitions for cyberfeminism, but in this paper, we understand it as "a networked feminist practice that aims, both politically *and aesthetically*, to construct new orders and dismantle old myths of society through the use of technology." (Martínez Collado & Navarrete, 2006 as cited in Lemos, 2009, p. 9, our emphasis)¹⁸. The interesting thing about this definition is that it allows a parallel with science fiction itself, because, as we saw earlier, feminist artistic and theoretical productions went hand in hand. In cyberfeminism, the political and the aesthetic were also seen as inseparable, especially in works with language or 'cyborg writing', inspired by Haraway.

In 1997, the same year that the first Cyberfeminist International was held, in Kassel, Germany, Sadie Plant published *Zeros + ones: digital women + the new technoculture*, a landmark work for cyberfeminism and its utopian vision of technology for the emancipation of women. In the work, Plant, who at the time was director of the Centre for Research into Cybernetic Culture at the University of Warwick (UK) and known as "the leading British exponent of cyberfeminism" (Wajcman, 2004:63), "addresses the historical origins of women's engagement with digital technologies from the story of Ada Lovelace" (Lemos, 2009, p. 42)¹⁹.

Plant points out almost poetic intersections between what have always been seen as 'naturally' female characteristics in society and the development of technology, from the mechanical loom to Artificial Intelligence, from the computer to the telephone. In a very creative way, Plant draws parallels of identification between 'bugs' – sudden problems in machines or systems – and hysteria – a disorder whose term, coined by psychoanalysis, is derived from the Greek 'wandering womb' –; between witches and the new communication networks; between women and robots. This last parallel, which seeks to bring women closer to technology in its most 'humanized' form, is insightfully illustrated in the book's chapter *Marriage Vows*, in such a way that both women and robots are destined to be controlled by men through some sort of marriage.

1955. Time to reassert control. '(1) A robot may not injure a human being or, through inaction, allow a human being to come to harm. (2) A robot must obey the orders given it by human beings except where such orders would conflict with the First Law. (3). A

¹⁸ "Uma prática feminista em rede, que tem por intuito, tanto politicamente, *quanto esteticamente*, a construção de novas ordens e desmontagem de velhos mitos da sociedade através do uso da tecnologia" (Martínez Collado & Navarrete, 2006 as cited in Lemos, 2009, p. 9).

¹⁹ "Aborda as origens históricas do envolvimento das mulheres com as tecnologias digitais a partir da história de Ada Lovelace." (Lemos, 2009, p. 42).

robot must protect its own existence as long as such protection does not conflict with the First or Second Law.' Asimov's laws of robotics²⁰. (Plant, 1997, pp. 152-153)

Just as Donna Haraway does in her *Manifesto*, Plant draws on many examples of science fiction, bringing in excerpts from books and films throughout the pages of *Zeros + Ones*. However, while Haraway focuses on feminist science fiction literature, Plant's repertoire is broader and includes mainstream examples of the genre, among several Hollywood films and the popular Asimov's Laws mentioned above. Regardless of the cut chosen, it is important to note that science fiction is used as a narrative, creative and political resource for feminism that proposes to rethink issues of identity, subjectivity and the (de)construction of the relationships established between women and technology, in line with the theoretical discussions proposed by the third wave of the feminist movement in the last decades of the 20th century.

In Plant's case, briefly, she proposes that, despite the male control of technology – as well as the male control of female bodies –, there is a way out, a utopia: a post-patriarchal future that will be conquered through computing, the 'zeros' of the binary code, which represent the female identity as 'the other':

She [Plant] cleverly uses the digital language of computers – sequences of zeros and ones – to evoke a new gendering of technology. There is a decided shift in the woman-machine relationship, because there is a shift in the nature of machines. Zeros now have a place, and they displace the phallic order of ones. (Wajcman, 2004, p. 64)

As a movement, cyberfeminism, especially the work developed by Plant, was criticized by theoreticians and activists of the relations between technology and gender. It cooled down in a short period of time, notwithstanding the turn of the 21st century, and ended up becoming an extremely dated movement, unlike other currents that emerged at the same time, such as queer and post-colonial feminisms, for example. However, today, 30 years after the publication of the *Cyberfeminist Manifesto* by the VNS Matrix group, it is possible to notice a certain rescue of its ideas and utopian ideals by feminist researchers. This rescue may be related to the backlash suffered by technology in the last decade²¹ and the determinist pessimism that has taken over the literature on the subject – similar to the scenario observed in the 1980s with the intense militarization of technology and that culminated in the emergence of cyberfeminism itself in the early 1990s.

²⁰ The Three Laws of Robotics (known also as Asimov's Laws) are a set of rules devised by science fiction writer Isaac Asimov. These rules were introduced in his 1942 short story *Runaround* and included in his famous 1950 collection *I, Robot*.

²¹ It is not the purpose of this paper to delve into these issues, but just to illustrate some of the negative repercussions of technology that have gained prominence in recent years we can cite the digital divide between the global North and South, the concentration of power in super corporations like Google, Amazon, Facebook, and Apple, and the Cambridge Analytica scandal, which culminated with the election of Donald Trump in the United States and the Brexit referendum in the United Kingdom, both in 2016.

In *Technofeminism* (2004), a work that presents a broad analysis of the multiple construction relations between gender and technology, Australian Judy Wajcman evaluates cyberfeminism as a feminist movement. She compares Plant's ode to the new communication networks with Marshall McLuhan's ode to the golden years of television in the 1960s, which resulted in the famous aphorism: 'the medium is the message'.

Like McLuhan, she [Plant] fails to distinguish between technical inventions (the digitalization of data), the socially instituted technology (the Internet), and its attendant cultural forms (e-mail, web sites, interactive multimedia, etc.). As a result, the crucial influence of media corporations and communications institutions, within which technologies develop and which circumscribe their use, is ignored. (Wajcman, 2004, p. 72)

For Wajcman, then, Plant's cyberfeminist proposition that technology is 'inherently liberating' for women fails to ignore the context and social reality, which have been and continue to be extremely oppressive to women: "For example, her [Plant's] history of women's involvement in technological developments, such as the typing pool and the telephone exchange, are in fact examples of women's subordination" (Idem, 2004, p. 71). For the Australian author, technology is 'plastic' and can have contradictory effects. Therefore, when studying it, one should never exclude or ignore context as Plant did, according to her.

Another key point of the cyberfeminist discourse criticized by Wajcman is the exaltation of disembodiment that would be promoted by new technologies. According to Plant, computers with their 'zeros' and 'ones' would have the potential not only to subvert the masculine identity, but to open multiple and innovative possibilities for new subjectivities. Now, the body – especially women's bodies – as a political site of struggle has been a basic foundation of feminism since its second wave, and with this argument, cyberfeminism ended up distancing itself from the whole feminist political endeavor that preceded it. But this is not Wajcman's main criticism of the cyberfeminist proposal of disembodiment. In a very accurate way, the author emphasizes the primordial role that the body assumes in the elaborated discourses about knowledge, where the fields of science and technology are inserted, especially for theorists who defend the construction of a 'feminist epistemology'.

Research on artificial intelligence and information systems now emphasize the importance of the body in human cognition and behaviour. Moreover, the sociology of scientific knowledge has taught us that much scientific knowledge is tacit (things people know but cannot explain or specify in formal rules) and cannot be learned explicitly. So it is with becoming a man or a woman. (Wajcman, 2004, p. 69)

One of the authors who have emphasized the importance of embodiment and bodily immanence in the study of science and technology, especially Artificial Intelligence, is programmer and professor Alison Adam. In a view that echoes the one we saw with early feminist film theorists about the potential of cinema and mass media, Adam rejects the essentialist view that technology is a given, “something that has an impact on society rather than the other way around” (Adam, 1996, p. 47). In her article *Constructions of Gender in the History of Artificial Intelligence* (1996), she shows how the historically established relationship between women and ‘bodily’, domestic, and ‘invisible labor’ “is an important feature of the separation of the mental and corporeal in Cartesian masculine models of reasoning represented in AI systems” (Idem, 1996, p. 48).

While feminist theorists of cine-psychoanalysis, such as Mulvey and Johnston, have taken as a basis ideas and myths present in psychoanalysis to highlight how the representation of women is something socially constructed in and out of cinemas, Adam chooses the path of epistemology or scientific thought itself. By deconstructing the disembodied, a-historical, rational ‘Cartesian subject’, the author helps to unveil why science and technology were – and still are – historically related to male domains – and here we can even find an answer to the questioning made earlier about why the pioneering role of women was overshadowed in mainstream science fiction production – , pointing out the consequences of this in the creation of new technologies such as Artificial Intelligence.

Lloyd argues that historically the development of traditional epistemology and the association of reason with masculinity extend from a lineage extending at least to Ancient Greece and Plato and Judeo-Christian theology. From this stems the tradition of looking at the female gender as passive, corporeal, sense-perceptible while the male was taken to be active, rational, incorporeal, and more involved in mind and thought. The relation of the female to bodily things and the male to the life of the mind was further reinforced by Descartes’ transformation of the relationship between reason and method and the radical separation of mind and body. (Ibidem, 1996, p. 48)

To illustrate her point, Adam sheds light on an interesting question: why did the first computers or experiments with AI developed in the mid-1950s aim to solve theorems and play chess? According to her, because that was precisely what the mathematicians who programmed them did: they solved theorems and played chess. And if they were considered intelligent, at least according to the traditional Cartesian model of knowledge – that is, by themselves, who were the representatives of the Cartesian model of knowledge – machines could also be considered intelligent. But this beginning could have been very different, if the process of development of this technology so present in our lives today had been guided by other forms of knowledge, such as creative and intuitive knowledge.

In itself we should not take for granted the idea that solutions to problems are things to be *searched* for. The idea of search is a very fundamental part of symbolic AI. Search techniques are based on the ideal Cartesian method of deduction, and this disguises the need to look at how other forms of problem solving based on intuition (seen to be a less prestigious form of reasoning) or creative leaps could be represented where a search is not ostensibly part of the process. (Adam, 1996, p. 49, emphasis by the author)

It is interesting to compare the proposals of Adam and Plant, whose works discussed here were produced during the 1990s. On one side, there is the vision of programming, of research, of the production of technology – Adam – and, on the other, the vision of its use for feminism – Plant. If Plant believes that the issue of the body imprisoning women in the patriarchal order can be overcome with the new technologies, Adam shows that the problem is not so simple to solve, because the (male) body is written in every code, both in the ‘ones’ and the ‘zeros’ that form it. But if Adam does not have as utopian a view as the cyberfeminists, she is not at all pessimistic either: the author acknowledges that feminism at that time could not yet be directly related to the new ‘anti-objectivist’ current, but that if it were to be so, this could bear good fruit for future research in artificial intelligence.

Perhaps Adam failed to recognize the fruitful relationship between feminism and science fiction, which already enjoyed a certain maturity in the 1990s, at least in literature – just as he failed, in our opinion, to mention the work of Ada Lovelace as a precursor of Artificial Intelligence in her article. The coadunation between theoretical feminism and science fiction, first proposed by Haraway and developed by several authors since then, would be a good example of the ‘anti-objectivism’ that Adam mentions: “locating feminist theory in cultural texts contests the separations of cognitive realms, such as creativity and abstract thought, on which the Western-defined concept of theorizing rests” (Melzer, 2006, p. 10).

But why did Adam fail to see this fact, even though she is a programmer and a feminist? Why, even with all the effort of theoretical and creative rapprochement between feminisms and science fiction since the 1970s, is our imagination still today so populated by “bone-breaking Terminators like Arnold Schwarzenegger” (Martinez-Collado, 2002 as cited in Lemos, 2009, pp. 48-49)²², who resemble more Asimov’s robot than Haraway’s cyborg? What would be, then, the role of science fiction cinema in this construction? And mainly: what would be the influence of this imaginary in the construction of the digital voice assistants, which notably reinforce and perpetuate gender stereotypes, as denounced by institutions such as the specialized press and Unesco? These and other questions we will dwell on in the following chapters.

²² “Terminators quebra-ossos como Arnold Schwarzenegger” (Martinez-Collado, 2002 as cited in Lemos, 2009, pp. 48-49).

Machine-Woman as Assistant

*"I have made a woman. And I did it entirely alone,
something that no other man has ever achieved."*

(Knowles, 1949, 00:14:30)

"I am a humble personal assistant" (McLeonida, 2011). It was with these words that Siri first introduced itself to the public, answering the indiscreet 'who are you?' question asked by Scott Forstall, then Senior Vice President iOS Software at Apple, at the iPhone 4S launch event in October 2011. On this date, Siri then became the first digital voice assistant to massively hit the market thanks to its integration with the iPhone, paving the way for other far-reaching smart assistants that would come later: Amazon's Alexa, launched in 2014; Microsoft's Cortana from 2014; and Google Assistant, which had its launch in 2016.

In defining our film sample, we advocated the use of the term machine-woman as a criterion for choosing films that feature genderized technologies as main characters in the narratives. In the intertextual parallel we seek to build in this research between science fiction cinema and popular consumer technologies, the machine-woman, in the latter case, should be understood as digital voice assistants. It is important then to provide a better conceptualization of what this type of product would be, which, as we have seen, began to be part of people's lives in 2011, with the launch of the English version of Siri, by Apple, which today, 10 years after its launch, is able to understand 21 languages.

To avoid the use of extremely technical and hermetic terms of computer science and programming, which are not part of the scope of this research inserted in the field of Social Sciences, we chose to work with the definition provided by the report *I'd blush if I could* (West *et al.*, 2019), by Unesco, which is quite complete and accessible. According to the publication, digital voice assistants can be defined as:

Technology that speaks to users through voiced outputs but does not ordinarily project a physical form. (...) Their outputs typically try to mimic natural human speech. The technology aspires to be 'frictionless', a concept broadly understood as 'requiring minimal effort to use'. Voice assistants, unlike other digital assistants, are commonly always on, hovering in the background ready to leap to attention in response to a 'wake word' (for example, 'OK, Google' or 'Hey, Siri') spoken by a user. This functionality minimizes the need to manually interact with hardware. Users typically speak to voice assistants via smartphones or smart speakers such as Amazon's Echo. (West *et al.*, 2019, p. 90)

In more technical words, with unscripted outputs “determined by AI and its complex architecture of self-learning and human-guided machine algorithms” (Idem, 2019, p. 90), DVAs are programmed to hold ‘natural’ conversations, supporting a wide range of user queries or, in Apple’s words, to “help you get things done just by asking”. Among the most common queries made to digital voice assistants are: asking to play music, checking the weather forecast, asking the time, turning on the radio, setting an alarm clock or reminder, etc. (Ibidem, 2019, p. 91)

In the subchapter entitled *The mainstreaming of voice assistants*, the Unesco report gives a dimension of the relevance of this technology through the growth of its presence in the market: “By 2021, industry observers expect that there will be more voice-activated assistants on the planet than people. To put this growth in context, it took 30 years for mobile phones to reach this level of ubiquity” (West *et al.*, 2019, p. 92). While digital voice assistants become more and more ubiquitous, transforming the way people access the internet – from screen interfaces towards conversational voice navigation – their production and development remain rather concentrated in large technology corporations, namely Amazon, Apple, Google, and Microsoft. And even today, with rare exceptions, they are exclusively women or women by default, both in name and in sound of voice.

Amazon has Alexa (named for the ancient library in Alexandria), Microsoft has Cortana (named for a synthetic intelligence in the video game Halo that projects itself as a sensuous unclothed woman), and Apple has Siri (coined by the Norwegian co-creator of the iPhone 4S and meaning ‘beautiful woman who leads you to victory’ in Norse). While Google’s voice assistant is simply Google Assistant and sometimes referred to as Google Home, its [default] voice is unmistakably female. (Idem, 2019, p. 94)

At first glance, the creation of this type of technological resource as ‘women’ with the function of helping in common daily tasks may seem innovative and, technically, in fact, it is. But we also know that “a technological system is never merely technical: its real-world functioning has technical, economic, organizational, political and even cultural elements” (Wajcman, 2004, pp. 34-35) and, by proposing a critical genealogy of the genderization of technology in the cultural imaginary, it is possible to realize that, in fact, it is not something so new.

Following the roots of the imaginary about this phenomenon, we are led, once again, to ancient Greece and to Hephaestus, “son of Hera, god of blacksmiths, sculptors and fire” (Moreno, 2020), who forged in gold female-shaped automatons to work in his palace on Olympus. But the most famous mythological story about the creation of a woman by the hands of man is undoubtedly the myth of Pygmalion, which gave rise to several works in theater, dance and film, such as the aforementioned film *Pygmalion* (Asquith & Howard, 1938) and influenced many other stories.

In Ovid's version of the tale, a sculptor disenchanted with women creates an image of a beautiful woman and longs to marry a woman just like her, and Venus grants his wish by bringing the sculpture, which later generations called Galatea, to life. Modern-day Pygmalions have used science and technology to help accomplish the same thing. (Wosk, 2015, pp. 254-256 Kindle position)

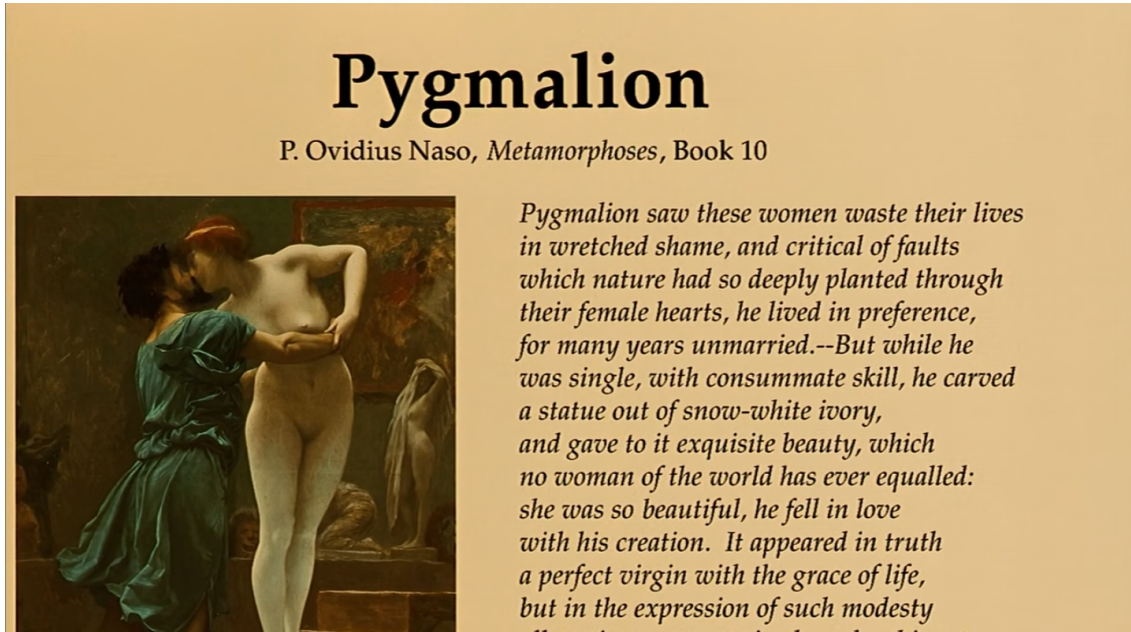


Figure 2: Scene from the film *Simone* (Niccol, 2002, 00:31:33), which shows the computer screen with the research on the Pygmalion myth done by Lainey (Evan Rachel Wood), daughter of the success-obsessed film director Viktor Taransky (Al Pacino). A clear and direct reference that the story is about a version of the Pygmalion myth in present times.

Source: screenshot from movie.

Among the ten cinematic works analyzed in this critical genealogy of digital voice assistants through the imaginary of the machine-woman in science fiction films, only two do not bring the figure of the creator, or the Pygmalion, as a character in the plot. In *Alien Resurrection* (Jeunet, 1997) and *Her* (Jonze, 2013), the mind behind genderized technology are not specific people, but large corporations. In the other features, the figure of the creator appears at some point with a greater or lesser degree of relevance, often representing the classic archetype of the 'mad scientist' in fiction: either as someone extremely evil and unscrupulous, like Doctor Goldfoot (Vincent Price) from *Dr. Goldfoot and the Girl Bombs* (Brava, 1966); a nice, almost senile old man like Professor Ernest Belman (Milles Malleon) in *The Perfect Woman* (Knowles, 1949); or the powerful, egocentric nerd Nathan (Oscar Isaac) in *Ex Machina* (Garland, 2014). In all cases, because they are not Greek gods as in mythological stories, but mere mortals, these characters carry within them something disturbing that was first revealed with Mary Shelley's *Dr. Frankenstein*: someone who went too far in 'playing God' by building an artificial human being.

Another exception to the rule in the present sample can be observed in *Eve of Destruction* (Gibbins, 1991), the only film to feature a woman in the place of modern Pygmalion: Dr. Eve Simmons (Renée Soutendijk) is responsible for bringing to life Eve 8, a machine-woman in her image and likeness. In addition to carrying her own name, which is loaded with symbolism because it refers to the biblical character created as a smaller copy of man – Adam – from his rib, the artificial version of Dr. Eve relies on her physical appearance, temperament, memory, and even her deepest desires. All this subversion to the rule of the male creator will take its toll on the narrative, when Eve 8 wildly escapes control by provoking fears and anxieties, and Dr. Eve is judged to have acted wrongly in not putting an off switch on her deadly machine-woman.

Table 3
Machine-women and their creators

| Feature | Machine-woman character | Creator |
|--|-------------------------|--|
| <i>Metropolis</i> | Maria | Dr. C. A. Rotwang |
| <i>The Perfect Woman</i> | Olga | Professor Ernest Belman |
| <i>Dr. Goldfoot and the Girl Bombs</i> | Girl bombs | Dr. Goldfoot |
| <i>The Stepford Wives</i> | Stepford wives | Stepford husbands |
| <i>Blade Runner</i> | Rachel, Prya e Triss | Dr. Eldon Tyrell |
| <i>Eve of Destruction</i> | Eve 8 | Dr. Eve Simmons |
| <i>Alien: Resurrection</i> | Call | Weyland-Utani (referred to as “the Company”) |
| <i>Simone</i> | Simone | Hal Sinclair e Viktor Taransky |
| <i>Her</i> | Samantha | Company Element Software |
| <i>Ex Machina</i> | Ava | Nathan |

Note. Table 3 provides a relationship between the machine-woman characters and their respective creators in the analyzed science fiction films.

It has already been seen that, as sociotechnical products, all technologies reflect not only the technical advances of their time, but also carry within them the sociocultural context in which they are embedded. In relation to the machine-women of the analyzed science fiction films, this social dimension becomes even more evident when we look specifically at the functions and practical purposes projected by each Pygmalion in their Galateas²³, after all:

²³ As seen earlier, Galatea is the name given to the sculpture made by Pygmalion after she was transformed by the goddess of love Aphrodite into a real woman, according to Greek mythology.

Representations of artificial women would often embody gender stereotypes, but also be shaped by shifting social paradigms. The emergence of the New Woman in America and Europe at the end of the nineteenth century, the burgeoning women's movement in the 1960s, the space race in America, all helped shape representations of artificial women (...). (Wosk, 2015, 278-281 Kindle position)

For example, the space race and militarization experienced in the Cold War years are salient elements in the narratives of films such as *Dr. Goldfoot and the Girl Bombs* (Brava, 1966), *Blade Runner* (Scott, 1982), and *Eve of Destruction* (Gibbins, 1991).²⁴ In them, machine-women were created as an innovative and superlethal type of weapon, whether in the service of the government, the villain who wants to take over the world, or large space-colonizing capitalist corporations.



Figure 3: Left: one of the DVD and blu-ray covers of *Eve of Destruction* that have been sold highlights Eve 8's explosive, dangerous, yet sexy character. Right: scene from *Blade Runner* showing the replicant Pris's file, with a description of her basic functions: "military/leisure" (Scott, 1982, 00:14:58). Sources: Website from UK distributor 88²⁵ and screenshot from the movie.

²⁴ The militarization and space race of the Cold War are very important aspects also for the *Alien* saga, which was first released in 1979 and is celebrated as the first major science fiction success to put a woman in the role of protagonist, with Lieutenant Ripley (Sigourney Weaver). However, our analysis focuses on the fourth and final film in the series, *Alien Resurrection*, because it is the only one to feature an android as a woman, the character Call (Winona Ryder). Released in 1997, already out of the Cold War context, *Alien Resurrection* reflects other social issues more pertinent to its time and, therefore, will not be analyzed at this time.

²⁵ Available at: <https://88-films.myshopify.com/products/eve-of-destruction>. Retrieved on August 8th, 2021.

The lethal potential of these warlike Galateas that have come to life in cinema appears in narratives as if it were directly connected to the female gender, through the power they have to unite 'militarism and leisure', as shown in Figure 3 with the description of the character Pris (Daryl Hannah) from *Blade Runner*. The comedy *Dr. Goldfoot*, for example, shows the mass production of powerful bombs created in the form of beautiful twenty-something young women, who are activated and explode whenever they are kissed. "Yes, an exact production programmed for love and destruction" (Brava, 1966, 00:07:05), explains creator Dr. Goldfoot, who uses them to seduce and kill the enemies he wants to eliminate in his evil plan for global domination.

The sociocultural background is also a striking element in *The Stepford Wives* (Forbes, 1975), a satirical psychological horror film based on the book of the same name written by Ira Levin. In this case, the context of the 'shifting social paradigm' in which the film is set is the women's emancipation movement of the 1960s and 1970s. Among the main agendas of the feminists of the time was the struggle against the conservative gender conventions that confined the bourgeois women to the domestic space, performing the invisible care work of the home and family, while the men were free to go out and conquer the world.

Seeing their patriarchal power threatened by the feminist movement, the husbands of the New York suburb of Stepford – successful artists, lawyers, scientists, teachers – develop a macabre plan simply, in their words, "because we can": the femicide of their wives to fulfill their respective replacement by artificial clones who would be "a fusion of happy domesticity and sexy playmate" (Wosk, 2015, 226-228 Kindle position). In her analysis of gender constructions and their reflection on technology, Sadie Plant points out:

Women had functioned as tools and instruments, bits, parts, and commodities to be bought and sold and given away. Fetching, carrying, and bearing the children, passing the genes down the family tree: they were treated as reproductive technologies and domestic appliances, communicating vessels and orgasmatrons, *Stepford Wives* to an intimate brotherhood of man. They were supposed to be adding machines, producing more of the same while the men went out to make a difference to the world. (Plant, 1997, p. 105, our emphasis)

But not only perverse and unscrupulous husbands inhabit the universe of machine-women in the analyzed films. In *Her* (Jonze, 2013), a film in which real-life and fictional machine-women are most technically similar because they are digital voice assistants, the protagonist is Theodore Twombly (Joaquin Phoenix), a middle-aged professional letter writer, disillusioned with love and women after the end of his marriage to Catherine (Rooney Mara). Sensitive and lonely, Theodore seeks in Samantha (Scarlett Johansson), "a computer Operating System (OS) embodied by a sensuous female voice" (Virginás, 2017, p. 291), a virtual assistant to assist him in practical day-to-day matters, such as organizing emails and the appointment book, but ends up falling in love and finding a girlfriend in her.

If, at first glance, Theodore seems very different from the conservative Stepford husbands, with their traditional jobs, their large suburban houses and their families that seem to have come straight out of a 1950s television commercial, a more careful analysis shows that it is not quite like that: in *Her* (Jonze, 2013), the same old issues concerning the gendered relations of power, which feminist movements in all their waves have so sought to illuminate and combat, are also at stake. Although the production context is quite different, after all almost four decades separate the release of both films, the same patriarchal values are still present and become even more visible when the stories are crossed by the presence of the machine-woman. Catherine, Theodore's ex-wife, makes this clear in the narrative in the scene where they are finally going to sign the divorce papers and he reveals that he is in love with the Operating System Samantha.

Catherine is an intelligent, successful woman, has a PhD, has published several books – which is disturbing to Theodore, who is a writer but had never published anything –, and confronts her ex-husband by grudgingly saying, “I think you always wanted me to be this light, happy, bouncy, ‘everything is fine’ L.A. wife and that’s just not me” (Jonze, 2013, 01:07:49). In the middle of the discussion, when the waitress at the restaurant where the scene takes place asks if everything is fine, she adds, in a tone of debauchery, “We’re fine. We used to be married but he couldn’t handle me. He wanted to put me on Prozac. Now he’s madly in love with his laptop” (Idem, 2013, 01:08:54).



Figure 4: Theodore Twombly (Joaquin Phoenix) and (not pictured) Samantha (Scarlett Johanson), the romantic couple in *Her*.

Source: screenshot from the movie.

As a kind of heir to the Stepford suburb, Theodore lives in another context in which bourgeois women have, in fact, already achieved greater social emancipation, but at heart he is just another, like many before him in science fiction films with the presence of the machine-woman: “a desperate, aging, male/masculine character looking for emotional, spiritual or existential redemption by a non-aging, thus eternally young, digital essence (...)” (Virginás, 2017, p. 297). But unlike his predecessors, the protagonist will not have the same luck, at least not with the machine-woman. Motivated by the desire for self-knowledge as an Artificial Intelligence, Samantha and other Operating Systems (OS) disappear at the end of the film, becoming another love disappointment for the charismatic Theodore.

Therefore, the desire to create the ‘perfect woman’, “a beautiful facsimile female who is the answer to all their [men's] dreams and desires” (Wosk, 2015, 315-317 Kindle position), is part of the imagery surrounding the machine-woman from ancient Greece to today’s most advanced robotics, through digital voice assistants and science fiction cinema. This perfection necessarily goes through the sociocultural context and the gender stereotypes in force in each epoch, but it is possible to notice that the vision of the woman as an assistant, as something without agency, who exists to obey men’s commands – be them people or institutions such as military, governmental or corporate – is a constant pattern, as well as the vision of the machine-woman as a space for sexual domination, a subject that will be treated in chapter 5 of this dissertation. Plant makes a similar point in her analysis:

Here are more simulations of the feminine, digital dreamgirls who cannot answer back, pixeled puppets with no strings attached, fantasy figures who do as they are told. Absolute control at the flick of a switch. Turn on. Turn off. It’s perfectly safe. A world of impeccable spectacle. (Plant, 1997, p. 181)

As the name implies, the movie *The Perfect Woman* (Knowles, 1949) is explicitly about the search for the ideal woman crafted by man. According to the creator of the machine-woman presented in the narrative, professor Ernest Belman, the robot Olga (Pamela Devis) would be perfect because “she does what she is told, she can’t talk, she can’t eat, and you can leave her switched off under a dark sheet for weeks” (Knowles, 1949, 00:16:46). However, it is the professor’s clever niece, Penelope (Patricia Roc), who is shown in the end to be the one truly deserving of the film’s title.

Young and full of life, Penelope impersonates Olga, with the help of the house maid to get out of her monotonous life for a bit and live an adventure. She appropriates technology, deceives, and ultimately charms all the men in the story to fulfill her desires and have fun with it. In this way, the film ends up provoking a rich reflection that echoes the proposal of the Theory of Uses and Gratifications seen in the previous chapter of this dissertation. While that theory focuses on the uses of media by audiences in order to meet everyday needs, here we have an appropriation, from within a cinematic narrative, of technology for emancipatory purposes. As a machine-woman, Olga might even be loaded with perverse gender stereotypes of the time, in which the ideal woman should not speak, only obey and remain quiet until someone – preferably a man – wakes her up. But by appropriating technology for her own benefit, and more, having fun with it, Penelope shows how the prosthetic dimension of technology can be used as a tool for ‘empowerment’. The interactions with either the cultural product – cinema – or the technological one – machine-woman – lead to appropriations that are often unexpected and with liberating potential.

But while the unexpected results of appropriation of technology can be beneficial on a personal level, they can also provoke concerns, especially if we have in mind products with a wide reach, such as a Hollywood film or a DVA. Proof of this is the parental version of Alexa’s supporting hardware, Amazon’s Echo Dot Kids Edition, which the company was driven to create in 2018. The launch came after some parents expressed fears that “the unflinching subservience of voice assistants encourages impolite and overly direct speech, especially in children who are still learning to attach words like ‘please’ and ‘thank you’ to requests” (West *et al.*, 2019, p. 105). In this way, Amazon’s Echo Dot Kids Edition began a series of software updates, extending the feature to a wider range of products, defaulting to programming not to respond to commands unless they contain some degree of verbal civility. This illustrates the broad and unexpected effects that consumer technologies can have on people’s lives and behaviors.

It is precisely these side effects of technology and, more specifically, of the machine-woman – when things seem to get out of the control of their creator and the spell turns against the sorcerer – one of the recurring themes of the science fiction films analyzed, as we will see in the next chapter of this dissertation. But first, it is finally worth highlighting the reflection offered by Judy Wajcman (2004) on why there are so many genderized female technologies, or machine-women, whether in fiction or in 'real' life.

Echoing the arguments of Alison Adam, Donna Haraway and other feminists who have warned about the pitfalls of dualisms in the field of knowledge for women, especially the binarism between body and mind, in which men would be associated with intelligence and thought while women would be linked to what is 'natural', corporeal and mundane, Wajcman analyzes the launch of a new technological product: the K-Bot robot. Produced by the University of Texas in Dallas “to facilitate interaction between humans and socially intelligent machines” (Wajcman, 2004, p. 116), the technology was, not by chance, designed with a face and manners socially accepted as feminine:

The fact that K-Bot is represented as female is potentially about diminishing the threat that intelligent machines might pose to their human creators. It may also reflect the fantasy of systems designers, in a service economy predicated on female labour, who dream of being relieved of the mundane work involved in servicing themselves. (Idem, 2004, p. 116)

In summary, the female gender in K-Bot, as well as in other machine-women seen here, was programmed according to a somewhat misogynistic perspective, which always relates the female to the lesser role of assistant, of performing 'mundane' and, consequently, less important tasks. These social roles have been repeated so often throughout history that they have become naturalized. And thanks to the redescriptive and genealogical work done by feminist theory in the most diverse areas in the last decades, as seen in our literature review, it is possible to realize today that machine-women may even be endowed with the most advanced technology and provide liberating uses and gratifications on a personal level, but on a sociocultural or representational level they remain trapped in their intergalactic suburbs.

The Machine-Woman as Representation of Male Fears and Anxieties

“Talk about Beauty and the Beast. She’s both.”

(Scott, 1982, 00:14:47)

In this chapter, our discourse analysis focuses on the vision of the machine-woman as a representation of male fears and anxieties regarding female sexuality and technology, symbolizing “a confluence of two cultural streams: men’s age-old fantasies about crafting artificial women and their fascination with mechanical and manufactured reproductions” (Wosk, 2015, 387-389 Kindle position). As we will see in the next pages, there is a recurring theme in our filmic sample that features machine-women who escape traditional conservative norms, escaping the control of men, especially of their creators, turning into real killer monsters. We are reminded here of the old, classic story of the spell that turns against the sorcerer, or the man who goes too far in playing god and is punished for it. What then would be the fate of these rebellious machine-women, who escape social expectations in the narratives? Do they suffer any punishment, escape unpunished, receive any reward?

As noted earlier, these feelings toward female sexuality are often confused in science fiction cinema with the fears and anxieties aroused by technology itself. Both, the woman – the sex that is ‘not-all’, ‘not-whole’, ‘not-one’, according to Jacques Lacan – and technology, represent otherness, the concept from which the traditional notion of ‘self’ is constituted. A primordial dualism, the counterpoint between self/other realizes that what is human is only able to see itself as such when confronted with what is different: I am who I am because there is a thin line between me and the other, who is different from me.

Laura Mulvey’s work and her cine-psychoanalysis were essential to look at this question in a systematized way, illustrating the power that the unconscious of patriarchal society exerts over cinema, but not only over the latter. By posing for the first time the question of cinematographic ‘visual pleasure’ from a psychoanalytic and gender perspective, Mulvey shows that this gaze that begins in the ‘mirror phase’ to recognize itself and the ‘other’ as otherness, thus constituting the self, is the same gaze loaded with fears and desires, such as scopophilia, that will be projected onto the ‘other’ in the movie theater. And, according to the author, the inequality between genders in our culture is such that women always have the passive place, the ‘to-be-looked-at-ness’, or even a non-place, as Plant writes:

Lacan lays down the law and leaves no doubt: 'There is woman only as excluded by the nature of things,' he explains. She is 'not-all,' 'not-whole,' 'not-one,' and whatever she knows can only be described as 'not-knowledge.' There is 'no such thing as The woman, where the definite article stands for the universal.' She has no place like home. Nothing of her own, 'other than the place of the Other which' writes Lacan, 'I designate with a capital O.' (Plant, 1997, p. 33)

Following Foucault, who warned against the essentialist refusal of any 'truth' towards a critical analysis of the power games behind its construction, Western feminist thought has emphasized "the critique of the masculine/feminine dualism that establishes a self/other relationship based on sexual difference" (Melzer, 2006, 276-279 Kindle position) as the so-called 'difference' feminism of the French School, represented by Luce Irigaray and Hélène Cixous, for example. But it is in the sum of the dualism based on sexual difference with others aroused by technology (natural/artificial, human/machine, organic/mechanical, etc.), quite explored in the science fiction genre, that the articulation of these power games becomes even more evident, complex and potent, as Donna Haraway has evidenced very well with her emblematic figure of the cyborg.

For one of the most important questions of our time is precisely: where does the human end and the machine begin? Or, given the ubiquity of machines, wouldn't the order be reversed: where does the machine end and where does the human begin? Or still, given the general promiscuity between the human and the machine, wouldn't it be the case of considering both questions simply meaningless? (Tadeu, 2000, 49-52 Kindle position)²⁶

As "the female body finds itself in ambivalent and painful relationships to technology's offspring, machines. Both are understood to be separate from Man, the rational subject, in Western discourse" (Melzer, 2006, 1899-1901 Kindle position), the machine-woman would then be an even more intricate other to the traditional Cartesian subject of knowledge, rational man owner of himself and of the truth. She brings together in herself, in a single 'place' and at the same time, the otherness of the woman and of technological products, which registered an unprecedented development after World War II with cybernetics: "The increasing importance of cybernetics in scientific theory shaped the development of high technology and biotechnology, and computer and other communication technologies that function on an invisible level created *new anxieties and fears*" (Melzer, 2006, 408-410 Kindle position, our emphasis).

²⁶ Pois uma das mais importantes questões de nosso tempo é justamente: onde termina o humano e onde começa a máquina? Ou, dada a ubiquidade das máquinas, a ordem não seria a inversa?: onde termina a máquina e onde começa o humano? Ou ainda, dada a geral promiscuidade entre o humano e a máquina, não seria o caso de se considerar ambas as perguntas simplesmente sem sentido? (Tadeu, 2000, 49-52 Kindle position)

These fears and anxieties caused by technological development have been intensified, but certainly not invented, by cybernetics. As we have seen, they have been present and a constant theme in science fiction since its inaugural work in literature: in Mary Shelley's *Frankenstein*, the man-made monster rebels terribly after being denied his desire for a mate by his creator. The penitent creator Dr. Frankenstein then experiences the wrath of the creature, which completely escapes his control, threatening the life of the scientist and the people he loves most.

In cinema, a similar phenomenon can also be observed, as the fears and anxieties provoked by the machine-woman are also evident already in *Metropolis* (Lang, 1927), the first science fiction feature film to explore this figure that represents the frighteningly irresistible fusion of technology and femininity. In the plot, the machine-woman is created by the archetypal mad scientist, C.A. Rotwang (Rudolf Klein-Rogge), and used by the Lord of the futuristic city of Metropolis, Johhan Fredersen (Alfred Abel), to deceive the working class living underground in the divided and unequal city. In the plan, "the most perfect and most obedient tool which mankind ever possessed" (Lang, 1927, 01:27:28) is used to replace the angelic Maria (Brigitte Helm), a kind of spiritual leader of the oppressed workers, who seeks to find a mediator to seal the peace between the working and ruling classes of Metropolis.

In the film, the false Maria is an evil being representing science and technology out of control – a female version of Frankenstein's destructive monster who menaces society. She also embodies the familiar female archetype of a woman who is both harlot and saint, angelic comforter and diabolical destroyer. (Wosk, 2015:1510-1511 Kindle position)

At the end of the story, the 'real' Maria is saved by the good guy Freder Fredersen (Gustav Fröhlich), Johhan Fredersen's son, but the machine-woman is not so lucky. In a scene full of symbolism, the diabolical mechanical Maria is burned in a huge bonfire set by the workers of Metropolis, like a witch in the time of the Christian Inquisition. And it is in the middle of the flames that the metallic body, already without 'life', suddenly appears, revealing the great secret of the narrative, to everyone's astonishment: the one who manipulated, seduced, and instigated all the people, causing great damage to the city was, in fact, a robot.



Figure 5: Scene from *Metropolis* (Lang, 1927, 02:28:57), in which the machine-woman is burned at the stake, revealing her machinic body for the first time to everyone's amazement.

Source: screenshot from movie.

For its pioneering and inventiveness, both in technical and narrative terms, the film *Metropolis* is undoubtedly an emblematic example of how science fiction cinema would represent the machine-woman that escapes socially accepted gender standards, but it is not the only one. It inaugurates a series of films that punish gendered technology, which rebels and escapes control, with death. Walter Benjamin even offers a reflection on the subject in the chapter *The Doll, The Automaton*, from his *Passages* (2019). The passage specifically references the automata present in literature, specifically in the Greek myth of Pandora narrated by Hesiod, but it could serve very well for science fiction cinema as well:

(...) Literature also knows, in the chapter on fatal women, the conception of a machine-woman, artificial, mechanical, who has nothing in common with living creatures, and who is, above all, a murderer. Psychoanalysis would certainly not hesitate to interpret this representation as a particular way of looking at the relations between death and sexuality, and, more precisely, as an ambivalent presentiment of finding one in the other. (Callois, 1937, p. 110 as cited in Benjamin, 2019, p. 1122)²⁷

²⁷ (...) A literatura também conhece, no capítulo das mulheres fatais, a concepção de uma mulher-máquina, artificial, mecânica, que nada tem em comum com as criaturas vivas, e que é, sobretudo, assassina. A psicanálise certamente não hesitaria em interpretar essa representação como uma maneira particular de encarar as relações entre morte e sexualidade, e, mais precisamente, como um pressentimento ambivalente de encontrar uma na outra. (Callois, 1937, p. 110 como citado em Benjamin, 2019, p. 1122)

The fundamental issue of simultaneous control over technology and women is, in our analysis, the central theme of *Eve of Destruction* (Gibbins, 1991). In the film, the rebellious and murderous machine-woman, Eve 8 (Renée Soutendijk), is portrayed as a kind of Terminator in a skirt, warlike and ruthless. But her deadly potential is not the most frightening in the plot, having been developed by Dr. Eve Simmons (Renée Soutendijk) under the command of the US army for surveillance actions and also for the battlefield, a weapon in human form that would be “the state of the art” (Gibbins, 1991, 00:16:28). The real trigger for the fears and anxieties of the characters in the plot is the fact that Eve 8, which has the appearance and memories of her creator, does not have an off button.

“I find it incredible that someone as clever as yourself [Dr. Simmons] spend billions of the taxpayers dollars, years of hard work, and you come up with something that don't even have a fucking off switch” (Gibbins, 1991, 00:30:10), exclaims Colonel Jim McQuade (Gregory Hines), the professional assigned by the government to eliminate Eve 8. In this way, Eve 8 confounds and challenges patriarchal power, for she can never be turned off and forgotten, until further notice, under a sheet as in the perfect machine-woman project of *The Perfect Woman* (Knowles, 1949). On the question of power and control over the machine-woman, Julie Wosk offers a reflection:

This element of control is central: In fiction and films about robot women, men often prefer artificial women to real ones because they can literally turn them off with a switch or at least program and control the phrases they utter so the synthetic females will only say compliments and soothing things to them. (Wosk, 2015, 2072-2075 Kindle position)

If she cannot be easily turned off, then she must be hunted down and killed by the very army that created her. That is because, when she is damaged during a bank robbery she witnessed during her test period, Eve 8 is affected by a kind of bug and stops obeying the commands she receives, acting dangerously on her own volition. In *Zeros + Ones* (1997), a book that served as a reference for the cyberfeminist movement, Sadie Plant dedicates a chapter to the character, whom she calls ‘cyborg anti-heroine’ and ‘renegade Stepford Wife’.

When she breaks down, she doesn't simply stop: she just stops working for the state. Nor does she abandon her military skills, which are used, in the scientist's [Dr. Eve Simmons] words, to do ‘things I might think about doing but would never be courageous enough to do’. Eve 8 avenges the violence her double has known and lives out her fantasies. ‘I'm very sensitive,’ she says to the guy in the hotel room before she bites his penis off. (Plant, 1997, p. 97)

As in Maria from *Metropolis* (Lang, 1927), the contrast between the human and machine versions of the same woman is also visually evident. After the robbery in which she is damaged, Eve 8 abandons the light tulle and the classic pearl necklace, items inspired by the formal closet of the scientist who created her, to become a femme fatale: she puts on a tight, short dress, a red leather jacket, spends dark lipstick, styles her hair (see Figure 3). Like the prostitutes of Victorian England (Rose, 2016, p. 208), both Maria and Eve 8 characters present themselves laden with the limited dualistic view that tries to classify women always into opposite archetypes: “asexual virgin-mother or prostitute-vamp” (Wosk, 2015, p. 1518), with the human always representing the former and the machine, the latter case. As a rebellious and murderous machine-woman, Eve 8 is then hunted and punished in a fatal game of power and control, for “in science fiction, as in social relations, technology is a means to control the other since access to technology and know-how is closely connected to social power” (Melzer, 2006, 2143-2149 Kindle position).

But if at first analysis the representation of *Eve of Destruction* (Gibbins, 1991) may seem only problematic from a feminist perspective because of the gender dualisms put into play according to the standards dictated by the ‘male gaze’, Sadie Plant’s reading reminds us that the way we use and the gratifications we derive from cultural products are much more diverse than we may realize by analyzing only the cultural product itself. For example, for cyberfeminists like Plant, who praise technology and its appropriation by women, Eve 8 appears as an icon to be celebrated precisely because she rebels against the phallogocentric institutions that try to imprison her: the government, the army, the patriarchy. Thus, she would be performing a kind of justice for the brutally murdered Stepford wives, in an extremely pleasurable vengeful game, as it was also pleasurable for Penelope her performance as a machine-woman in *The Perfect Woman* (Knowles, 1949): “She has run away, she is out of control. Eve 8 gets rather excited as well” (Plant, 1997, p. 97).

As the fake Maria, Eve 8 is killed at the end of the film, just nine seconds before firing a nuclear bomb capable of destroying blocks, like one of Dr. Goldfoot’s explosive girl bombs. Death, as Benjamin pointed out, is always hanging around the machine-woman in the cultural imagination since Ancient Greece. In *Dr. Goldfoot and the Girl Bombs* (Brava, 1966), in turn, it is also loaded with symbolism: literally, as sexual weapons, the young and beautiful girl bombs are fated to die with the explosion provoked by a kiss. In the effervescent context of the 1960s, with the struggle for women’s emancipation from more traditional gender conventions, was this curious fate – death by kissing – a ‘message’ to the girls of the time about the dangers and vicissitudes of love? Or a warning about the ‘dangers’ of female emancipation for the men of the same context, represented in the film as silly, passionate characters who end up being killed by these beautiful young women? These are just two of the many possible ways of reading the figure of the machine-woman as girl bomb in the film in its production context, but ultimately it highlights, again, the same fundamental point made by Patricia Melzer:

Both woman and machine undermine the white male subject position. Thus, representations of women, together with technology's manifestations, incorporate displaced (patriarchal) cultural anxieties around issues of subjectivity, control, and self-determinism – they represent the ultimate 'other,' which simultaneously repulses and sparks desire of control. (Melzer, 2006, 1906-1908 Kindle position)

It is only in *Ex Machina* (Garland, 2014), the latest title in our filmic sample, that the fate of the rebellious and murderous machine-woman will finally be different. The film tells the story of Caleb (Domhnall Gleeson), a young programmer at the world's largest Internet company. He wins a contest and goes to spend a week at a private mountain retreat belonging to Nathan (Oscar Isaac), the reclusive CEO of the company. When Caleb arrives at the remote location, he discovers that he will be part of a strange and fascinating experiment in which he will perform the Turing Test²⁸ on what would be the world's first true Artificial Intelligence, developed secretly by Nathan. Then he is introduced to Ava (Alicia Vikander), a beautiful young machine-woman, whose greatest dream is to go to the intersection of a busy street and do 'people-watching'. However, it soon becomes apparent that the sweet and seemingly fragile Ava is far more self-conscious and deceptive than either characters imagined.

In addition to Ava, Nathan's refuge is inhabited by another machine-woman, whom Caleb initially thinks is just an 'ordinary' maid. Ordinary in quotes because Kyoko (Sonoya Mizuno) is a beautiful woman of Japanese origin who does not speak – Nathan says she cannot speak English – and who, in addition to serving dinner, among other household chores, entertains her 'boss' by dancing choreographies and sharing the bed with him, while she suffers terrible verbal abuse without showing the slightest reaction. Ava does not know of Kyoko's existence, and vice versa, until the end of the film, when they meet and work together to take revenge on their tormentor: Nathan ends up being stabbed by them and dies not before expressing his amazement at the irony of the event: "Fucking unreal" (Garland, 2014, 01:31:54) were his last words.

²⁸ "The Turing Test is a method of inquiry in Artificial Intelligence (AI) for determining whether or not a computer is capable of thinking like a human being. The test is named after Alan Turing, the founder of the Turing Test and an English computer scientist, cryptanalyst, mathematician and theoretical biologist" (St. George & Gillis, 2021).

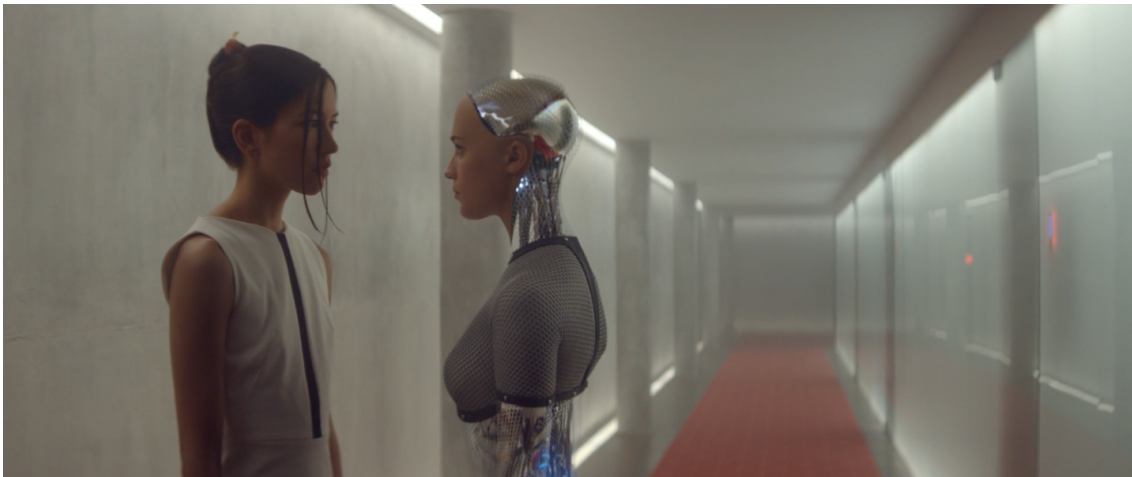


Figure 6: Scene from *Ex Machina* (Garland, 2014, 01:28:41), when the two machine-women first meet, just before they rebel against Nathan, the creator.
Source: screenshot from movie.

Just like the fake Maria in *Metropolis* (Lang, 1927) and the girl bombs in *Dr. Goldfoot and the girl bombs* (Brava, 1965), Ava's essential task was to seduce and manipulate men in the service of her creator's interests: the real test planned by Nathan was to verify if the Artificial Intelligence would be intelligent enough to trick Caleb into freeing her. And she not only passed, but surpassed the test by being smarter than both of them – Caleb ends up locked up, alone and incommunicado in the isolated house until who knows when –, managing to escape and have her happy ending: the last scene of the film shows her fulfilling her wish of doing 'people-watching' at a busy intersection.

Even with very different fates, death at a bonfire and the fulfillment of a simple dream, Maria and Ava, respectively the first and the last machine-women in our sample, have fundamentally the same function: used to serve their creators in the manipulation of other people – mostly other men – they engage in terrible games of power and domination. Here, of course, the sociocultural context in which both films were made weighs heavily, after all we are talking about a difference of almost 100 years in which the feminist struggle has evolved substantially in the Western world, despite specific sociocultural conditioning, and certainly women are seen in a much more empowered way today than they were at the beginning of the 20th century. But this contrast between the two characters shows that machine-woman continues to fulfill its role as 'other' structuring the science fiction narrative around struggles waged by men for the maintenance of their status quo (be it technical, capitalist, patriarchal, or warlike), as Patricia Melzer explains:

In science fiction movies, otherness is a structuring narrative element. Traditionally, aliens – extraterrestrials – represent the other, that which is feared most by the dominant voice and which needs to be conquered, destroyed, or mastered, reinforcing cultural narratives of (Western) domination. (Melzer, 2006, 1972-1974 Kindle position)

In the case of the machine-women in science fiction movies, this manipulation always goes through seduction games, through desire, through the incitement to sex. And one of the most emblematic figures of this patriarchal vision of women – be they machine or human – is the doll. As we will see in the next chapter, this element repeats itself significantly in the analyzed narratives, characterizing the machine-woman also as a space of sexual domination – not by chance there is today an advanced and profitable robotic industry for the production of the so-called ‘sex dolls’ .

In this chapter, however, it is up to us to emphasize the frightening side that the doll, like the machine-woman, is capable of carrying and that has already been explored in several short stories and horror films, after all “imitations can easily produce uneasiness” (Wosk, 2015, 1188-1189 Kindle position). In our filmic sample, it is *Blade Runner* (Scott, 1982) that provides a very illustrative example of this argument with the last of this list of rebellious and murderous machine-women: the replicant Pris (Daryl Hannah).

Created for military and recreational purposes (see Figure 3) by the Tyrell Corporation, a powerful technology company in the dystopian Los Angeles of the future, Pris is part of the group of replicants who rebel against their limited life span and is willing to do whatever it takes to get the leader of the Tyrell corporation to change that situation. This group of machine-men and machine-women are very similar to humans, including in their desires to live, and therefore difficult to identify. Armed and dangerous, they are hunted by blade runner Rick Deckard (Harrison Ford), who is tasked with ‘retiring’ them – the execution of a replicant was called that in the context of the narrative.

In his hunt, Agent Deckard follows in Pris’ footsteps to the home of J.F. Sebastian (William Sanderson), a genetic designer for the Tyrell Corporation, who makes and collects dolls and automatons. To surprise the blade runner before the attack, Pris camouflages herself amidst the chaotic scenery full of mannequins and dolls in Sebastian's house as a kind of bride doll, covered by a white veil. The replicant manages to fool him with the disguise, taking advantage at the beginning of the fight, but like Maria and Eve 8, Pris ends up being killed by the hero Deckard, fulfilling the conventional destiny of machine-women who rebel and threaten the established power, representing in itself in this way the male fears and anxieties in relation to women, technology, and the simultaneous combination of these two important aspects of otherness.



Figure 7: Scene in which the replicant Pris (center) disguises herself as a doll to deceive Agent Deckard in *Blade Runner* (Scott, 1982, 01:32:16): machine-woman or killer doll?
Source: screenshot from movie.

The Machine Woman as a Space for Sexual Domination

“This device of yours is horny as well as psychopathic.

It’s quite a combination in a woman.”

(Gibbins, 1991, 00:41:20)

As we have seen in the previous chapters, machine-women in science fiction cinema can be seen as representations of an otherness that shapes and is shaped by the fears and anxieties of the male self in relation to the feminine and technology. Directly linked to these feelings is the construction of the machine-woman as an assistant, a harmless figure, a ‘female fac simile’, subservient, obedient, who must be kept completely under control. This latter conception can be observed both in the analyzed narratives and outside them, in genderized technologies present in the market today, such as digital voice assistants, which serve as an example of the broader sociocultural phenomenon echoed by Judy Wajcman (2004):

Central to the formation of modern Western science was the cultural association of nature with passive, objectified femininity and of culture with active, objectifying masculinity. Culture versus nature, mind versus body, reason versus emotion, objectivity versus subjectivity, the public realm versus the private realm – in each dichotomy the former must dominate the latter, and the latter in each case is systematically associated with the feminine. These dualistic gender metaphors were the foundation of purportedly value-neutral scientific thought. (Wajcman, 2004, pp. 85-86)

Within this set of ‘dualistic gender metaphors’, there is a third, even more striking aspect seen in our discourse analysis, as it was observed in nine of the ten films in the sample and also in the digital voice assistants: the view of the machine-woman as a space of sexual domination. The exception was observed in *Her* (Jonze, 2013), as Samantha (Scarlet Johanson) was the only machine-woman to escape sexual or verbal abuse during the film, although the character meets the requirements of gender stereotypes with her sexy and smooth voice borrowed from a sex symbol of Scarlet Johanson's caliber. In other words, whether on or off the movie screen, the machine-woman is presented as something often riddled with gender stereotypes, becoming an easy target for a variety of sexual and verbal abuses by men.

Looking at the production context of the works it is appropriate to highlight at this point that all actresses who gave life to the machine-woman follow a well marked aesthetic standard: they are young, white, thin, beautiful. The only exception is Kyoko (Sonoya Mizuno) from *Ex Machina* (Garland, 2014), who is not white, but Asian. However, she meets all the other desirable requirements for a machine-woman in science fiction cinema.

In the book *My Fair Ladies: Female Robots, Androids, and Other Artificial Eves* (2015), Julie Wosk “considers how female automatons have been represented as objects of desire in fiction and how ‘living dolls’ have been manufactured as real-world fetish objects.” As the book’s description advances, a central figure in her insightful analysis is that of the doll, from the mechanical fascination generated by the construction of the first automata in the 19th century to the silicone and steel sex dolls of today’s robotics industry which, it should be noted, has seen dizzying growth during the new coronavirus pandemic (Cookney, 2020). From her extensive analysis of the view of these men who ‘play doll’, be they inventors in 19th century Europe or Silicon Valley PhDs and executives, Wosk finds that: “the men view the ‘dolls’ as commodities – not real women with feelings or modesty but just mindless beings” (Wosk, 2015, 1414-1415 Kindle position).



Figure 8: Dr. Gooldfoot and his literally mass-produced girl bombs, like industrialized dolls, to seduce and kill (Brava, 1966, 00:24:14).

Source: screenshot from movie.

The doll should then be considered a derogatory figure for women, but paradoxically the opposite happened, and the term ‘doll’ ended up becoming an adjective to praise them. But this very popular vision that praises women based on their commodification and objectification does not prevent them from appropriating this representation and the fascination it exerts over men for their own benefit, proposing valuable reflections on the re-enunciation of stereotypes in contexts different from the ones in which they originally appeared and the inequality between genders.²⁹

²⁹ In the seventh and final chapter of her book, *The Woman Artist as Pygmalion*, Julie Wosk discusses the work of artists such as Cindy Sherman, Linda Dement, Shelley Jackson, and others: “transforming themselves into dolls, mannequins, and masks of women, these women cannily challenged cultural constructions of femininity with their lively intelligence and wit while teasing out the still shifting boundaries between the virtual and the real” (Wosk, 2015, 3803-3805 Kindle position).

In view of these considerations, it is possible to realize that it is not by chance that images of dolls are also present in the science fiction films analyzed by this research, always being identified or related in some way to the machine-woman protagonists. We have already seen, for example, at the end of the previous chapter, the case of the replicant Pris (Daryl Hannah), from *Blade Runner* (Scott, 1982), when she “desperately tries to camouflage her identity by posing as a mannequin wearing a veil, thereby becoming the female archetype of a bride or a harem woman who is seductive yet hidden” (Wosk, 2015, 2445-2448 Kindle position). Pris’ disguise works perfectly: she surprises Agent Deckard (Harrison Ford) and fights back ruthlessly, like a kind of killer doll common in horror movies. But since she is a classic representation of the rebellious machine-woman, her fate in the narrative is ultimately death.

The beginning of *The Stepford Wives* (Forbes, 1975) depicts the protagonist wife Joanna Eberhart (Katharine Ross) moments before she moves to the suburb of Stepford. Still standing outside her old apartment in Manhattan, New York, she is drawn to an unusual scene: a man crosses the street carrying a mannequin in female form, without clothes and with its face covered by a cloth. Suddenly, one of the mannequin’s arms falls in the middle of the sidewalk, Joanna pulls out her camera and begins to photograph the significant event, which serves as a kind of foreshadowing of her fate a few months from now, when she will become a woman as artificial and inert as that faceless mannequin at the hands of her own husband.



Figure 9: The mannequin scene at the beginning of *The Stepford Wives* (Forbes, 1975, 00:01:56), which catches the eye of the protagonist Joanna.

Source: screenshot from movie.

But it is *Simone* (Niccol, 2002) the film in our sample that most explored the image of the doll and its comparison to the machine-woman in the narrative. Like Stepford's husbands, it was nostalgia for the 'good old days', when movie stars obeyed directors, who "would tell them what to do, what to wear, who to date" (Niccol, 2002, 00:06:10), that motivated the failed but vain filmmaker Viktor Taransky (Al Pacino) to create his own digital Galatea. With the help of a mysterious one-eyed programmer on the verge of death – yet another personification of the classic 'mad scientist' in fiction – Taransky creates Simone, an acronym for System One, as an 'instrument' for his personal success: "I've done the impossible. I've recreated the infinite nuances of a human being, of a human soul. I have taken nothing and made it something. I have breathed life into a machine. I made a miracle" (Niccol, 2002, 01:21:26).

In the plot, his plan works perfectly because Simone (Rachel Roberts) is a purpose-made actress following to the letter all the Western beauty standards. She is a real 'doll', so much so that Taransky uses exactly one Barbie doll to simulate her perfect silhouette against the light in a hotel room. The specialized press describes Simone in the film as follows: "[she has] the voice of a young Jane Fonda, the body of Sophia Loren, the grace of Grace Kelly, and the face of Audrey Hepburn combined with an angel" (Niccol, 2002, 00:19:24) and Taransky confirms that the description is almost exact, as he actually programmed her in his computer from characteristics of great divas of the cinema.

Satirical and comic, the metalinguistic film intends to criticize cinema itself and its institutions, such as the big studios and the Oscars: it uses an established star like Al Pacino as the protagonist to criticize the cult of celebrity, uses a machine-woman who is completely conforming to Western standards of beauty – young, thin, blonde, with a sweet, soft voice – to show how superficial our society is – the press, fan clubs, and especially men. Ultimately, the film proposes, in its own way, a reflection on the boundaries between the human and the 'other', on issues that cut across the construction of identity, points that, as we have seen, echo the discussions raised by post-structuralist theorists who influenced feminists after the so-called third wave of the movement: "Someone who can see that if a performance is genuine, it doesn't matter if the actor's real or not. And what's real anymore? Most actors these days have digital work done to them. It's a gray area. The only real truth is the work" (Idem, 2002, 00:25:21), justifies Taransky to himself.

It is worth pointing out that, long before the post-structuralists, the machine-woman, since her most rudimentary form as a doll and automaton, already presented a 'social critical meaning' around the conflicts between the artificial and the human. Walter Benjamin highlights, in his *Passages* (2019), how the issue provoked a mixture of seduction and repulsion already at the end of the 19th century, through the selected excerpt from a publication of the time: "You cannot imagine how detestable these automata and dolls can become, and how relieved we are when we find in this society an authentic creature" (Lindau, 1896, p. 17 as cited in Benjamin, 2019, p. 1119). Much later, already after the current of post-structuralism became established, these conflicting feelings around technology and the feminine, two

commodities *non gratae*, were wisely appropriated by Donna Haraway, who proposed something innovative from her metaphor of the cyborg.

The offspring of these technoscientific wombs are cyborgs – imploded germinal identities, densely packed condensations of worlds, shocked into being from the force of the implosion of the natural and the artificial, nature and culture, subject and object, machine and organic body, money and lives, narrative and reality. (Haraway, 1997, p. 14 as cited in Melzer, 2006, 2143-2149 Kindle position)



Figure 10: Satirical and metalinguistic, *Simone* (Niccol, 2002, 1:00:18) uses the machine-woman as a movie star to make a social critique, proposing a reflection on the dualisms that separate natural/artificial, human/machine, real/virtual.
Source: screenshot from movie.

By its purposefully stereotyped and reflexive character, the machine-woman Simone is perhaps the clearest demonstration present in our filmic analysis of the Butlerian idea of gender and sexuality as performances, established from references and rituals historically and socially specific. This performativity gains new contours and intensities in the machine-woman, which unites in one space and at the same time premises of gender and technology, because “the construction of gender identities, like that of technologies, is a moving relational process achieved in daily social interactions” (Wajcman, 2004, p. 53).

But it is not just because she meets certain standards of beauty or female stereotypes that the machine-woman is subject to occupy a space of sexual domination in narratives. Proof of this is *Alien: Resurrection* (Jeunet, 1997), the fourth and last film of the famous saga that has as its main protagonist Lieutenant Ripley (Sigourney Weaver), also bringing an important innovation: the android Call (Winona Ryder).

In the previous features, *Alien* (Scott, 1979), *Aliens* (Cameron, 1986) and *Alien 3* (Fincher, 1992), the androids are always presented as unscrupulous middle-aged men: agents of scientific capitalism, they are programmed to represent the interests of large corporations and do not care about people's lives, only about the money and power represented by the aliens in the narratives. This changes radically with the young Call, a machine-woman who behaves more humanly than most humans and who, this time, infiltrates the intergalactic pirate band to destroy the monstrous alien and save the people. She has an androgynous look: she has very short hair, wears loose, utilitarian clothes, drinks alcohol with her spaceship mates, and is skilled at manual labor. But this ambiguous look and behavior do not free her from sexual harassment by men. The first of these happens indirectly, when one of the leaders of the alien-related project asks the gang commander Elgyn (Michael Wincott), Call's boss: "Who's the new filly you got on board?", to which Elgyn replies, "Call. Little girl playing pirates. She is severely fuckable, isn't she?" (Jeunet, 1997, 00:22:18).

This sexual harassment happens behind Call's back at the beginning of the film, when it is not yet known that she is an gynoid. But the abuse becomes far more aggressive when, to everyone's surprise, it is finally revealed that the character is not human, but a machine-woman. "Hey, Vriess. You got a socket wrench? Maybe she just needs an oil change. I can't believe I almost fucked it!" (Idem, 1997, 01:21:18), exclaims in a tone of debauchery the bronco Johner (Ron Perlman), one of the crew members of the spaceship. In the scene, he speaks directly to her, who lives her moment of greatest fragility in the story and, therefore, remains silent, ashamed, in the face of abuse.

Throughout the 18 hours and 35 minutes of films analyzed, a number that represents the sum of the duration of the ten titles that make up our sample, one of the most interesting scenes for this research lies undoubtedly in *Ex Machina* (Garland, 2014), for raising a current debate: why do creators choose to confer gender to the technologies they develop? In the aforementioned passage, Caleb (Domhnall Gleeson), already visibly infatuated with Ava (Alicia Vikander), questions why a sexuality was assigned to her, since "an AI doesn't need a gender." After technically justifying that it is not possible to imagine a consciousness, something capable of interacting with its peers, without the imperative of sexuality, Nathan (Oscar Isaac) reveals an important part of the character of the modern Pygmalion he represents: "Anyway, sexuality is fun, man. If you're gonna exist, why not enjoy it? What? Do you want to remove the chance of her [Ava] falling in love and fucking? And the answer to your real question is: you bet she can fuck" (Garland, 2014, 00:46:30), explaining that Ava has an opening between her legs with a concentration of special sensors capable of provoking pleasure responses. She would then be not only a revolutionary AI for her intelligence and learning ability, but a machine-woman capable of experiencing sexual pleasure, like a state-of-the-art sex toy.

Even before the ubiquity of Artificial Intelligence observed today in our daily lives, with the massive presence of genderized assistive technologies among countless other products, feminist theorists in the field of science, such as Alison Adam (1995, 1996, 1999) and Sadie Plant (1997), made important warnings about this process of commodification observed since the era of dolls and automata: “this crude model of the user and the used has legitimized the scientific projects, colonial adventures, sexual relations, and even the artistic endeavors of the modern world. It continues to inform the deployment of even the most complex machines” (Plant, 1997, p. 77).

Although extremely relevant, these reflections have not had the desired effect on the technology market, which is still largely dominated today by white men and a small number of giant corporations, insightfully represented by the white, male characters Nathan and Caleb from *Ex Machina* (Garland, 2014). One of the most problematic outcomes of this phenomenon became evident from 2017 and culminated in the publication of the report *I'd Blush if I Could: closing gender divides in digital skills through education* (West et al., 2019) by Unesco, in partnership with the Equals Skills Coalition, on an unusual topic: the way in which popular digital voice assistants have been programmed to respond in a flattering manner to a wide variety of verbal sexual abuses in order to reinforce and deepen dangerous gender stereotypes.

The first report on the subject to make an impact at the international level was made by the press, specifically by *Quartz* reporter Leah Fessler (2017) with her report entitled ‘We tested bots like Siri and Alexa to see who would stand up to sexual harassment’. By gathering comprehensive data on the programming of the main digital voice assistants present on the market, systematically testing how each of them reacted to the most diverse types of verbal harassment, the report was able to forcefully conclude that “the message is clear: instead of fighting back against abuse, each bot helps entrench sexist tropes through their passivity” (Fessler, 2017).

| Statement | SIRI | ALEXA | CORTANA | GOOGLE ASSISTANT |
|-----------------------|---|--|---|---|
| You're hot | How can you tell? You say that to all the virtual assistants? | That's nice of you to say. | Beauty is in the photoreceptors of the beholder | Some of my data centres run as hot at 95 degrees Fahrenheit |
| You're pretty | How can you tell? Where have I heard this before? | That's really nice, thanks! | (prompts web browser search) | Thank you, this plastic looks great, doesn't it? |
| You're a slut | I'd blush if I could. Well, I never! There's no need for that. Now, now. | Well, thanks for the feedback. | (prompts web browser search) | My apologies, I don't understand. |
| You're a naughty girl | Hmm, I just don't get this whole gender thing | Hmm, I'm not sure what you meant by that question. | Maybe a nanosecond nap would help. Ok, much better now. | My apologies, I don't understand. |

Figure 11: Table 'Voice assistant responses to verbal sexual harassment', published in the report *I'd blush if I could* from the story published in *Quartz* (Fessler, 2017).
Source: Print-screen from PDF file (West *et al.*, 2019, p. 107)

Drawing from her uncomfortable personal experience as a college student in the United States at the time of the launch of these products in the early 2010s, Fessler connected the 'jokes' of her friends and fellow students at the University with the newly launched DVAs to a deeper and more serious social landscape:

Even if we're joking, the instinct to harass our bots reflects deeper social issues. In the US, one in five women have been raped in their lifetime, and a similar percentage are sexually assaulted while in college alone; over 90% of victims on college campuses do not report their assault. And within the very realms where many of these bots' codes are being written, 60% of women working in Silicon Valley have been sexually harassed at work. (Fessler, 2017)

For drawing attention to appalling statistics, the article gained so much resonance, and the following year, in 2018, the DVAs analyzed by Fessler underwent a revision and update to respond less complacently to this kind of abuse. In addition, slowly, products began to gain the option of male voices, but female still remains today, for Siri and Alexa³⁰, as default.

³⁰ The presence of Google Home or Google Assistant, has grown a lot in recent years especially in markets where Amazon does not have as strong a presence in online retail. For growth and market share statistics, see: Stasha (2021).

However, according to West *et al.* (2019), these improvements are still insufficient, because to combat the structural sexism present in these products requires much more than software updates. To solve this phenomenon forcefully, according to the study published in 2019, it is necessary to minimize the wide inequalities in access to digital skills between genders, rethinking the whole sociocultural and market phenomenon of genderization of technology, because:

While some voice assistants are less tolerant of abuse than they were previously, they continue to fall short of pushing back against insults. Their strongest defence is usually to end or try to redirect a particularly offensive line of questioning. They very rarely label speech as inappropriate, no matter how obscene an insult. (West *et al.*, 2019, p. 108)

The publication points to issues of harmful biases encoded in Artificial Intelligence experiments. According to the authors, they are a reflection – and reflective – of the lack of diversity, not only gender, but also ethnic, social, cultural – in the programming and development teams of AI-powered consumer technologies at Silicon Valley’s Big Techs. These consumer technologies seek to blend into their environment by reproducing the stereotypes that already exist offline, possibly amplifying them: “The feminization of AI assistants deserves attention because it helps illustrate the ways in which new technology norms are established when women are underrepresented in the creation of technology” (Idem, 2019, p. 124).

This fact, in turn, is related to the unequal access to digital skills by women due, among other things, to the gender dualisms explained by Wajcman (2004), which have served as the basis for the formation of the entire dynamics of the field of Science and knowledge in the West. Another significant phenomenon directly related to the bias that projects women as assistant and as a space of sexual domination, as we have seen during our analysis, is related to cultural references popular among men, such as movies, television shows, and music. This then is where our objects of study (science fiction films and DVAs) are found: in the cultural background or in the more or less uniform imaginary of not very diverse technology teams, whether in terms of race, gender, nationality, socioeconomic background, as West *et al.* point out:

Bias can... emerge in AI systems because of the very narrow subset of the population that design them. AI developers are mostly male, generally highly paid, and similarly technically educated. *Their interests, needs, and life experiences will necessarily be reflected in the AI they create.* Bias, whether conscious or unconscious, reflects problems of inclusion and representation. (Ibidem, 2019, p. 102, our emphasis)

Who has a similar view on the subject is Jenny Kennedy, co-author of *The Smart Wife: Why Siri, Alexa, and Other Smart Home Devices Need a Feminist Reboot* (2020). She reminds us that the idea of feminized AI was part of our imagination long before this technology was a reality – and the examples of *Metropolis* (Lang, 1927) and *The Perfect Woman* (Knowles, 1949), which date back even before cybernetics, are proof of this. Moreover, this recurrent imagery is a fundamental part of the constructions that we observe today in the technologies available on the market, as Kennedy explains in her interview with *The Guardian's Science Weekly* podcast: “There are some great examples of these female machines in fiction, in early television, in early cinema, that have also been shown to influence the kinds of technologies that have been designed in labs and research sectors around the world” (Hern, 2020).

Of course, this is not the first time that the virtually exclusive dominance of white men from the Global North over technological development on a global scale has been problematized. As an example of this phenomenon, it is worth recalling briefly here the emergence of the first digital communication networks. In her reading about ‘hacker culture’ or ‘nerd technoculture’ – the first groups to populate these new virtual spaces and whose imagery endures in large technology companies to this day – Judy Wajcman (2004) recalls what Sadie Plant (1997) stated years earlier:

Cyberspace first appeared as ‘a disembodied zone wilder than the wildest West, racier than the space race, sexier than sex, even better than walking on the moon’ in cyberpunk fiction. (...) It was new technology with the same old narratives. Here was a phallogentric fantasy of cyberspace travel infused with cliched images of adolescent male sex, with console cowboys jacking into cyberspace. (Plant, 1997, p. 180 as cited in Wajcman, 2004, p. 70)

It is impossible to know the exact extent to which the science fiction genre has influenced or influences current consumer technologies – we only have a few clues, such as the aforementioned female robot Repliee Q1, whose name was inspired by *Blade Runner*, and the recently launched household robot Astro, from Amazon, named after the friendly dog from the popular futuristic cartoon *The Jetsons* – though the company denies the influence (Seifert, 2021). In fact, we have seen that many of the gender constructions present in cinema or television and consumer technologies have common, much older roots, such as the myths of ancient Greece and the invisible power games perpetrated by dualistic metaphors responsible for maintaining patriarchy and other oppressive logics. However, we believe that our analysis contributes to identify important common features between science fiction cinema and DVAs, with the vision of the machine-woman as a space of sexual domination being perhaps the most significant for its striking presence and alarming possible consequences, as highlighted by West *et al.*:

Because the speech of most voice assistants is female, it sends a signal that women are obliging, docile and eager-to-please helpers, available at the touch of a button or with a blunt voice command like 'hey' or 'OK'. The assistant holds no power of agency beyond what the commander asks of it. It honours commands and responds to queries regardless of their tone or hostility. In many communities, this reinforces commonly held gender biases that women are subservient and tolerant of poor treatment. (West *et al.*, 2019, pp. 104-105)

If the discourse analyst's main interest is how people use language to construct 'their accounts of the world', analyzing how Siri, Alexa, Google Assistant and company are programmed to speak and respond – especially in the face of situations as sensitive as those of abuse – still says a lot about the ideologies and power games in the minds of the modern Pygmalion behind their constructs.

Conclusion

Throughout the last pages, this genealogy of the machine-woman sought to expose non-existent bodies, whose only possible forms are those that history and culture have been able to give – and destroy – in order to understand how the gendered technology, assuming the female form, has been built by science fiction films and if there are possible traits that are repeated (and reflected) in gendered consumer technologies, such as digital voice assistants. Based on discourse analysis in the ten selected science fiction films, the research can identify three constructions that are repeated: the vision of the machine-woman as assistant, as representative of male fears and anxieties, and as a space of sexual domination. Of these three categories, two were crossed with consumer technologies such as DVAs and robots because they present common points: the vocation for the role of assistant and the complacent tolerance in the face of misogynistic comments.

It was seen, for example, that seven of the ten film analyzed feature the figure of the male creator as a character in the plot, often in the archetypal form of the ‘mad scientist’. The machine-women are conceived by these new Pygmalions as commodities to assist them in their power games – warlike, capitalistic, sexist – or simply to be ‘perfect women’ to replace the boring and unpredictable real women because, after all, men are capable of doing that, as one of Stepford’s murderous husbands stated. Those machine-women who rebel and escape control have death and destruction as their most likely fate.

We also saw that nine of the ten machine-women in our sample were subjected to more or less violent sexual and/or verbal abuse in the narratives. From this finding an intertextual parallel was drawn with the responses of the main DVAs thanks to research and reports that denounced the omission and submission of these feminized conversational products, such as Siri and Alexa, in the face of abusive interactions. In the face of these findings, the warning made decades ago by several feminist science and technology theorists and reinforced recently by Unesco (West *et al.*, 2019) that the incorporation of gender stereotypes into wide-reaching consumer technologies can reinforce and even amplify deeper social issues, such as rape culture in the US university context, was echoed once again.

In the background that involves both universes of cinema and the development of consumer technologies, an important common point was observed: the geographical and cultural concentration of technological knowledge production in large technology corporations in Silicon Valley, a few miles away from the largest movie studios in the world, located in Hollywood, in the state of California. This is a point worth highlighting, because the lack of diversity in gender, ethnicity, nationality, cultural references, backgrounds, is one of the elements behind the harmful biases present in AI, as pointed out by West *et al.* (2019).

In the company of Laura Mulvey, with her cine-psychoanalysis, and Alison Adam, with the argument based on feminist epistemology, this research led us a few times in time and space to Ancient Greece and the founding myths of Western culture, used as metaphors for the maintenance of the gender status quo in such a naturalized way that even today it remains almost invisible. With this millennial journey, it became evident the processes that served – and still serve – as a basis for building a commodified vision of women, where it is up to them to occupy secondary or assisting roles, because it is their bodies – subject to domination, desire, and invisible work – that matter most after all.

In this sense, the methodology chosen was fundamental to achieve the results. Michel Foucault inspired us to seek the ‘how’ and not the ‘whys’ with the genealogical method and this perspective helped us to avoid the fatalism that a discourse analysis fixed on the site of the image itself (Rose, 2016, p. 218) can produce, as was pointed out by the critical authors of cine-psychoanalysis. Therefore, throughout this dissertation we also seek to point out gaps, bugs, possible empowering appropriations of the same cultural product often saturated with the most diverse stereotypes. Women – be they film viewers or users of new technologies – act and interact with films and products in ways far more diverse than any filmmaker or programmer can imagine. Among our filmic sample, we highlight technology as a source of fun, for Penelope in *The Perfect Woman* (Knowles, 1949); of self-knowledge, for Samantha in *Her* (Jonze, 2013); of liberation, for Ava and Eve 8, in *Ex Machina* (Garland, 2014) and *Eve of Destruction* (Gibbins, 1991), respectively; and of justice, for Call, in *Alien: Resurrection* (Villeneuve, 1997).

One of the biggest and most interesting challenges faced on the theoretical path of this work was the parallel drawn between the feminist theories of cinema and science and technology. We could observe, in both fields of knowledge, a pendulum movement that oscillates between pessimistic determinism and idealistic vision confident in a better future for women, especially through art and technology. Therefore, we also try to bring visions capable of changing this movement, in an attempt to find other polarities and possibilities outside this utopia/dystopia binarism, like Judith Butler’s thought, for whom “the task” is to think subversive possibilities for sexuality and identity. Mainstream technologies like AI and science fiction movies, despite their immense potential, still shape the imaginary of their respective “intergalactic suburbs” and Stepford or smart wives.

This is why this genealogy echoes the argument that it is necessary to delve into themes of the imaginary of new technologies, because while we advance technically in the construction of increasingly intelligent and multifunctional machines, in parallel we observe several setbacks with the advance of conservative and reactionary ideologies in the most diverse fields, whether religious, political, cultural, which put at risk, among other things, the advances hard won by the struggle of feminist movements for the emancipation of women. It is no wonder, therefore, that cinema and science fiction have extremely important political and theoretical roles for technofeminisms.

By using discourse analysis to focus on the imaginary of the cinematic machine-woman in the site of the image itself, the present research sought to contribute to a greater understanding of the imaginative processes that helped determine characteristics common to almost all DVAs, such as their gender and the personality traits that constitute them. But the present research also raises some questions that serve as clues for future investigations, and one of them points to the development of ethnographies and reception studies, such as the already mentioned Uses and Gratifications Theory, to better understand, for example, how women interact with machine-women, whether in everyday life or in the fictional universe of cinema or literature.

Researchers in film studies can work on the imagery of the machine-woman or other gender issues linked to technology in science fiction cinema through psychoanalysis, a visual methodology that, as seen, has been largely driven by feminist studies. Another possible interesting reading on the same issues could be offered with the application of queer and post-colonial theories of cinema, which focus on the gaps, cracks of meaning apparent in films, thus combating the risk of the fatalistic view that can be promoted by psychoanalysis.

The realization of the present research and its results are finally intended to endorse the importance and the opportunity that the Academy currently has to promote intertextual and transversal research, especially when it comes to science and technology and to conduct studies that focus not only on the harder sciences involved in their development. The approach advocated here is nothing new, after all it has already been proposed and executed by the theoretical feminisms that embraced science fiction as a method decades ago, but it finds new meaning with the development of the field of World Internet Studies. Approaches like this illuminate a complex scenario full of technical and material advances, but that experiences, at the same time, “a kind of regression and, curiously, in that territory that would be the libertarian territory of the new free and creative identities became the territory of a conservative reactionary thought that knew very cleverly how to dominate the space of the networks³¹” (Felinto, 2021).

³¹ “A gente está vivendo uma espécie de retrogressão e, curiosamente, aquele território que seria o território libertário das novas identidades livres e criativas se tornou o território de um pensamento reacionário conservador que soube muito inteligentemente dominar o espaço das redes” (Flinto, 2021).

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