Artificial Futures and Posthuman Subjects: Social and Moral Implications of Technology and Scientific Advancement in Spanish Science Fiction

By

Mirla Andrea González

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Co-Chair: Jorge Pérez

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Co-Chair: Margot Versteeg

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Robert E. Bayliss

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Verónica Garibotto

_____

Chris McKitterick

_____

Tamara L. Falicov

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The dissertation committee for Mirla Andrea González certifies that this is
the approved version of the following dissertation:

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Abstract

Science fiction (SF) is one area where fictional and theoretical writings on science naturally converge. Despite this inherent nature of the genre and its potential to bridge the "two culture" divide between the arts and the sciences, one of the criticisms of literary analyses of SF is that they have by and large failed to examine how the texts present a critique and/or feminist revisioning of scientific discourse. The goal of this dissertation is to help close this gap within literary studies by focusing on the portrayal of "science" in Spanish SF. Given the deeply rooted, contentious and complex relationship that exists in Spain between the remnants of the dictatorship's conservative gender ideology, the Catholic Church, scientific doctrine, and women's movements, SF in this country presents a particularly fruitful case study. The short stories, novels and films analyzed in the following chapters dialogue with medicine, law, philosophy and ethics to create a more nuanced discussion of how science and technology (biotechnology, robotics, virtual reality) are creating posthuman identities and radically transforming the maternal body, the nuclear family, and society in the 21st century. The texts analyzed illustrate that any essentialist position towards science, whether it's a masculinist and misogynistic bias or a radically feminist stance, is highly problematic and detrimental to society. Ultimately, what comes to light is that it's not the technologies in and of themselves that are worrying, but the inferior social and political significance that has historically been attributed to the female sex in reproduction and motherhood. As technology and the body become increasingly intertwined, feminist SF can help raise awareness of power inequities, and serve as a space where theory and practice work together to bring about social change.

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To Leo and Darcy

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Introduction

Situating Spanish SF within Science and Technology Studies, Feminism, and

Posthumanism

In an age of invasive biotechnologies, new reproductive techniques, mass surveillance, immigration flows, and neocolonialism, SF remains a powerful and relevant genre. SF is an area where feminist work both in the sciences and the humanities converges, and as such, has the potential to complement societal and public debates about science and technology. However, despite the genre's inherent potential to bridge the "two culture" divide between the arts and the sciences, one of the criticisms of literary analyses on SF, in particular on feminist SF, is that they have by and large failed to examine how the texts present a critique and/or feminist revisioning of scientific discourse (Merrick "Modest Witnesses" 214). The objective of this dissertation is to help close this gap within literary studies by focusing on the portrayal of "science" in feminist Spanish SF. Like Helen Merrick argues, in contrast to science studies and feminist studies which may be constrained by existing institutions, methodologies and practices:

> SF is freer to "play" with the languages, cultures, and futures of science: for example, to try and imagine a "feminist science" in a context where the cultural constraints of the contemporary scientific establishment do not render this question difficult, if not impossible to answer … The SF writer's ability to extrapolate or re-vision an entirely different context within which certain scientific facts, discoveries or trends are played out, points to yet another role they can play as "aide" to science studies. SF can postulate an alternative to the cultures, and practices of "science as usual", and render more vividly the resulting (or required) changes in the interpellated areas of scientific cultures, theories and practices. ("Science Stories" 142)

SF provides a space from which one can contemplate alternative futures that challenge our current understanding of society. Through fictional scenarios, SF can help advance conversations about gender and racial equality, and political and economic models, in a world that increasingly places greater value on science and technology. As the body and technology have exponentially become more intertwined, fertility, contraception, and abortion have become heavily legislated health issues that predominantly affect the autonomy and rights of the female sex. SF allows the cultural, social, and ethical implications of such technologies to be brought to the fore of the ongoing public debate over women's reproductive rights and health. In the literary and filmic SF texts discussed in this study, the authors comment on the construction of sex, gender, and race, in relation to scientific theories and practices that center on reproduction and motherhood. As a whole, I argue that these cultural representations of the maternal body highlight the inferior social and political significance that has historically been attributed to the female sex in reproduction and motherhood. In calling attention to this strain of science's masculinist bias, feminist SF becomes a powerful tool not only for critiquing mysoginistic views of science but for envisioning a better future for women and reproductive health. Feminist SF can help raise awareness of existing power inequities, and serve as a space where theory and practice work together to bring about social change. However, in order to achieve this desired sociocultural change, feminist SF criticism needs to move beyond a literary analysis that focuses on the "symbolic rewritings of sex, gender and sexualities" (Merrick "Modest Witnesses 214) to one that criticially engages with feminist science and technology studies.[1]

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[1] Other common terms used to refer to the field include feminist technoscience, feminist cultural studies of science, and feminist science studies.

Influenced by feminist theory and the social studies of science,[2] feminist science and technology studies, coalesced in the late 20th century as a field that critically examines and challenges Western science's trajectory of patriarchal and heteronormative agendas which position women, racial minorities, the poor and third world peoples as inferior (Keller 7, Wajcman 126, Wyer et al. 1). By acknowledging that science is deeply intermeshed in culture, and has historically been linked to male interests, one can then begin to transform the political ideologies and economic systems that have contributed to rigid power asymmetries between different sexes, genders, classes, and races. From sociology and anthropology to art, philosophy and literature, there has been an increased interest in analyzing discourses and practices of technoscience and their impact on daily life (Weber 407). Technoscience operates under the premise that science, technology, and society are part of an interconnected web; technoscience "marks the merging of science, technology, industry, and the military, as well as the intensified amalgamation of science and technology, of society fusing with the technological, and of a new efficiency in industrial technologies which refigures the organic in a new and most efficient way" (Weber 407). The goal of showing how science is rooted in culture is to demonstrate how science, rather than a purely objective discipline, is also complicit with the production of ideologies. For example, one area of focus of feminist science and technology scholars is how science has been used in the service of sexist, racist, homophobic, and imperialist social projects (Harding *The Science Question* 21).

The potential subjective nature of scientific inquiry was a major point of contestation during the science wars of the 1990s. Scientists fiercely defended their discipline while feminists, postmodernist, and postcolonial critics questioned the objective reality of scientific

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[2] The social studies of science seeks to situate science within a social and political context. One of the most influential texts is Thomas Kuhn's *The Structure of Scientific Revolutions*.

research and practice. To encourage continued discussion between humanists and scientists, *After the Science Wars* was published in 2001 as a collection of essays based on papers given at a conference on 'Science and Its Critics' at the University of Kansas in 1997. Undoubtedly, there have been numerous noteworthy scientific breakthroughs over the centuries from eradication of deadly diseases to the prolongation of life, and it can be argued that humanity as a whole is better off as a result of new technologies. The objective of feminist science and technology studies is not to delegitimize the work of the scientific community but to provide a historical and sociological understanding of the intersection of women, science and technology. When read in conjunction with SF, the work of these scholars can illuminate the dynamic interplay between science, literature, and culture. In other words, how culture has shaped the production of science, and reciprocally how changes in science and technology have shaped culture.

SF and popular culture help mediate public understanding of science, and serve as a space where hopes and anxieties regarding technocultural change can be articulated. Though there are a myriad definitions of SF, each with a slightly different focus, for the purposes of this project, Darko Suvin's definition of SF as the literature of "cognitive estrangement", and James Gunn's view of SF as the "literature of change" are the most pertinent. Through estrangement, SF authors can defamiliarize the familiar while also familiarize the public with the new and strange (Lefanu 21). In turn, this alienating effect and change of perspective, can lead to new understandings and transformations of science, technology, and society.[3] Similarly, as the "literature of change", concerned both with the present and the future, SF "inserts the reader into

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[3] See "How America's Leading Science Fiction Authors are Shaping Your Future" by Eileen Gunn. In the article, Sophia Brueckner, MIT Media Lab instructor, laments that many researchers working with biotechnology and genetic engineering have not read SF; "Authors have explored these exact topics in incredible depth for decades, and I feel reading their writing can be just as important as reading research papers" (38).

a world significantly different from the world of present experience because of catastrophic natural events, because of the evolutionary alterations of time, or because of human activities, particularly scientific and technological" (Gunn vii). SF is the artistic response to the human experience of innovations in science and technology, advancements which in turn often lead to social changes (Gunn x). Via narrative strategies such as the manipulation of temporal and spatial dimensions and role reversals, one can critically examine through contrast, how sex, gender, and race relations are affected by scientific progress. Additionally, these literary techniques enable SF authors to propose radically alternative futures that challenge contemporary society's asymmetrical power hierarchies.

Authors have used the genre SF to questions theories about sex, gender, race and class differences, the very work that concerns feminist science and technology researchers and activists. Feminist SF in particular, can help raise awareness of power inequities not only through a critique of contemporary governments and economic systems, but also by questioning the historical, scientific, and social premises upon which sex, gender, and race have been founded. Morover, these texts often offer alternative socio-political configurations that invite the reader to question whether we could or should be structuring institutions and society differently. Both feminist SF and feminist science and technology studies are politically engaged, concerned with strengthening the relationship between theory and practice, and with the enactment of social change. As Elyce Rae Helford asserts with regards to SF and fantasy:

> No other genres so actively invite representations of the ultimate goals of feminism: worlds free of sexism, worlds in which women's contributions (to science) are recognized and valued, worlds that explore the diversity of women's desire and sexuality, and worlds that move beyond gender … feminism in science fiction and fantasy offers

textual exploration of theoretical and activist ideals for progressive and social change.

(291)

This project analyzes representations of science and technology as portrayed in a series of feminist SF short stories, novels and films from the end of the 20th century and beginning of the 21st century in Spain. These texts have been chosen because they have made significant contributions to the genre in Spain and because they contain salient female characters. The presence of female protagonists has allowed discussion of all of the works to remain centered on the historical and evolving relationship between science, technology, and the female body.

Although there is extensive literature on North American and British SF texts that creates a bridge between theoretical and fictional feminism such as Marleen Barr's *Alien to Femininity: Speculative Fiction and Feminist Theory* (1987), Sarah Lefanu's *Feminism and Science Fiction: In the Chinks of the World Machine* (1988), Robin Roberts' *A New Species: Gender and Science in Science Fiction* (1993), Jane L. Donawerth and Carol A. Kolmerten's *Utopian and Science Fiction by Women: Worlds of Difference* (1994), Jenny Wolmark's *Aliens and Others: Science Fiction, Feminism, and Postmodernism* (1994), Justine Larbalestier's *Daughters of Earth: Feminist Science Fiction in the Twentieth Century* (2006), and more recently Ritch Calvin's *Feminist Science Fiction and Feminist Epistemology: Four Modes* (2016), in Spain SF (let alone feminist SF) has received little critical attention. In part this is attributed to the late arrival of SF production in Spain. Though feminist SF boomed during the end of the 20th century in the United States and parts of Europe, in Spain SF, and to an even greater extent feminist SF,[4] faced a series of social, political, and economic challenges that delayed its development (M. Barceló 483, Díez 9, Moreno 407, Sánchez Conejero 5). Among these obstacles was Spain's predilection

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[4] See Lola Robles' article "Escritoras españolas de ciencia ficción" for an analysis of the additional factors that limited SF production by women.

for realist manifestations, especially during the postwar years of the Spanish Civil War (1936-1939), in which novelists were more interested in social realism than speculative fiction. Spain's ties to Catholicism, particularly during Franco's dictatorship, also hindered the development of SF. As Díez and Moreno state, by highlighting scientific discovery, providing an alternative to religious teachings, and creating imagined worlds where authority could be questioned and the patriarchal model subverted, SF posed a threat to the regime and was thus rejected (72). Additionally, SF was a genre that both in quantity and quality was monopolized by Anglo Saxon writers, limiting the market space for SF authors from other countries (Martínez de la Hidalga 13).

Publishing companies and the lack of literary criticism have also had a negative impact on the distribution and public perception of Spanish SF. Large publishing companies' hesitance to print SF oriented narratives has limited the circulation of SF (Belle and Molina-Gavilán 11). It is generally small publishers that produce works of SF, but since many people are put off by texts labeled as SF, they tend to stay away from these specialized collections. As Juan Miguel Aguilera commented in an interview: "[h]ay buenas ideas y buenas novelas en la ciencia ficción que mucha gente se pierde porque no se acercaría nunca a las estanterías dedicadas al género" (qtd. in DiPaolo 210). Literary critics have also played a role in the negative perceptions of SF by refusing to consider the genre worthy of academic study. Yolanda Molina-Gavilán argues that to this day both Spanish and Spanish-American SF is seen as part of a "cultural ghetto" by critics and academics (23). All of these factors have contributed to the characterization of Spanish SF as a marginal genre aimed at a niche audience.

For the reasons just discussed, there are very few critical works that address Spanish SF. As Molina-Gavilán laments, "el estudioso de la ciencia ficción hispana ha de contentarse con

breves prólogos a antologías y escuetos capítulos tímidamente incluidos en libros dedicados a repasos históricos del género" (23). The few dissertations written about Spanish SF include *La ciencia ficción como fenómeno de comunicación y cultura de masas en España* (1988) by Carlos Saiz Cidoncha, *Utopias of Thought, Dystopias of Space: Science Fiction in Contemporary Peninsular Narrativ*e (2009) by Susan Marie Divine, and *Simulacro, hiperrealidad y poshumanismo: la ciencia ficción en Argentina y España en torno al 2000* (2013) by Mirta Rímolo de Rienzi. Book length literary and filmic criticisms are also limited, but among the most notable are *Ciencia ficción en español: una mitología moderna ante el cambio* (2002) by Yolanda Molina-Gavilán, which discusses texts from both Spain and Latin America, *Novela y cine de ciencia ficción española contemporánea* (2008) by Cristina Sánchez-Conejero, and *The Spanish Fantastic: Contemporary Filmmaking in Horror, Fantasy and SciFi* (2016) by Shelagh Rowan-Legg.

Despite the appearance of only a few critical works dealing with Spanish SF, in the last decade of the 20th century and first two decades of the 21st century there has been a proliferation of new authors whose SF is socially and politically engaged. Fueled in part by the economic crisis of 2008 and the 15-M Movement (2011), "the youngest generation of writers has a special interest in portraying many facets of reality in each novel, integrating their futuristic scenarios with the everyday reality of our time" (Moreno and Pérez 227). Furthermore as Moreno and Pérez point out, in recent years prestigious publishers such as Cátedra, Alfaguara, Mondadori and RBA have published SF novels originally written in Castilian (225). Although SF is not nearly as popular as fantasy, it is slowly making inroads into the Spanish mainstream as is evidenced by the popularity of the SF tv series *El ministerio del tiempo* (2015-2017). In 2016 RTVE sold the show's broadcasting rights to Netflix, resulting in a bigger production budget and

an international viewership. To date, SF is not as critically acclaimed as other genres in Spain like horror and realism, but with the growing number of talented SF authors and directors, and the genre's relevance given the dystopian nature of contemporary Spanish society, its future is promising.

In recent years, small publishers like Sportula and Nevsky Books have committed to translating the works of Spanish authors in the hopes of introducing English-speaking audiences to Spanish and Latin America SF. These anthologies include *Terra Nova: an Anthology of Contemporary Spanish Science Fiction* (2013), *The Best of Spanish Steampunk* (2015), and *Castles in Spain: 25 Years of Spanish Fantasy and Science Fiction* (2016). To address the gender imbalance in the publication of Spanish language SF, Palabristas Press released *Alucinadas (2014)* via ebook. Cristina Jurado credits the emergence of small presses and the arrival of the ebook in Spain as the reason Spanish SF has started to thrive (qtd in Cordasco). *Alucinadas* is an anthology of SF written originally in Spanish by female authors. Far from a commercial project, the intent behind the anthology was to give a voice to and facilitate the publication of female authors in a male dominated genre. In 2014 the editors received 205 short stories written by 185 different female writers from 12 countries: Spain, Argentina, Mexico, Cuba, Colombia, Chile, Perú, Guatemala, Venezuela, Puerto Rico, Dominican Republic and Rumania. Originally the anthology appeared as an ebook until Sportula backed the project publishing paper copies in 2015. A translation of this anthology, *Spanish Women of Wonder,* was published in 2016 via a crowdfunding project. Given the success of *Alucinadas*, *Alucinadas II* was published in 2016, and *Alucinadas III* in 2017. In May 2018, *Distópicas: antología de escritoras españolas de ciencia ficción* was released. Like *Alucinadas,* it is an effort to showcase the plurality of female voices in SF.

In addition to the increase in the publication of anthologies in recent years, nonprofit initiatives have also started to provide Spanish readers greater access to short stories of SF. *Cuentos para Algernon* is a non-commercial website that translates short stories from English to Spanish with the copyright owner's permission and then posts them on their website for free. In 2014 *Cuentos para Algernon* won the Spanish Ignotus Award for best website. *Ficción Científica* is another website that publishes short stories online for free and gathers them in an annual anthology. Their first anthology titled *Ellos son el futuro: un año de ficción científica* was released in 2013 as a free ebook and was so successful that in 2014 they produced *Mundos: dos años de ficción científica*, *Ficción científica: relatos tres años caminando juntos* in 2015 and *Relatos de más allá del tiempo y el espacio* in 2016. Blogs and ebooks have been a great avenue for publishing short stories of SF. As Antonio Navarro comments, "short stories are the author's touchstone, specially for those who are starting. It is the way new writers can show if they have what it takes to be an author by displaying their abilities, using less time than required for a novel, getting to readers more quickly, and being published more easily" (qtd. in Charnock).

Despite the negative perceptions of Spain and scant attention given to Spanish SF, contemporary Spanish writers have published innovative texts demonstrating how scientific discourse is part of the larger Spanish cultural context. In fact, it is the deep rooted impact of the contentious and complex relationship between the dictatorship's conservative gender ideology, the Catholic Church, scientific doctrine, and women's movements, that makes feminist SF in Spain a particularly fruitful case study. Given the broad thematic of Spanish SF as evidenced by the recent anthologies, novels and films, I have chosen to focus on configurations of the posthuman in utopian, dystopian and cyberpunk works produced at the end of the 20th century and beginning of the 21st century in Spain. As Tom Moylan explains, the liberation movements

of the 1960s and 1970s in Europe, the United States and elsewhere, saw a revival of utopian writing (xiv). Then, in the 1980s, the rise of powerful transnational corporations led to the search for cheaper sources of labor and materials, the exploitation of the working class and underdeveloped nations, and a widening gap between the rich and the poor (Moylan xiv). This economic and political anxiety was manifested in feminist SF, cyberpunk, and dystopian literature; "[c]hallenging capitalist power as well as conservative rule … the new dystopias have rekindled the cold flame of critique and have thereby become a cultural manifestation of a broad-scale yet radically diverse alliance politics that is emerging as the twenty-first century commences" (xv). The stylistic and narrative techniques of these subgenres of SF (utopia, dystopia, cyberpunk), which will be detailed in the following chapters, make them particularly suited for discussions of sex, gender, class and race at a time when economic inequality is on the rise, despite the advancements being made in science and technology.

One consequence of technological progress has been the creation of posthuman forms of existence. Rosi Braidotti defines the posthuman condition as "an assumption about the vital, self-organizing and yet non-naturalistic structure of living matter itself." (Posthuman 2). This post-naturalistic assumption can serve as the starting point for "playful experimentations with the boundaries of perfectibility", for "moral panic about the disruption of centuries-old beliefs about 'nature'", or for "exploitive and profit-minded pursuit of genetic and neural capital" (2). In the 21st century, the body and society are undergoing profound transformations; the posthuman condition "urges us to think critically and creatively about who and what we are actually in the process of becoming" (Braidotti 12). Contemporary SF is one area where questions regarding the posthuman are most passionately explored (Hayles *How We Became* 247). In this dissertation I focus on literary and filmic representations of three distinctive technologies that are likely to

have a significant impact in our posthuman future: biotechnology; androids, robots, artificial intelligence; virtual reality and transcendence.

Chapter one examines how utopias and dystopias have been used to invert traditional gender roles in Elia Barceló's *Consecuencias naturales* (1994) and Gabriela Bustelo's *Planeta hembra* (2001). Barceló's and Bustelo's novels illustrate how scientific discourse has informed cultural production in Spain, particularly related to the issue of reproductive technologies. In their works, Barceló and Bustelo invert the traditional sex-gender paradigm, offering texts that deal with reproductive rights and biotechnologies, and they include various familial and societal models to highlight the power struggles that exist between different genders and sexes. My analysis focuses on how biotechnology in these novels serves to control and manipulate various populations, ultimately creating gendered hierarchies that place restrictions on an individual's rights over his/her body to the detriment of society. In this first chapter, the work of feminist science and technology scholars like Nancy Tuana, provides the foundation for understanding how reproductive theory has changed over time. Familiarity with reproductive theory is essential to comprehending how scientific discourse has at times served to relegate women as biologically inferior, and how contemporary authors are incorporating biotechnology, including reproductive technologies, in order to re-examine how gender roles are socially constructed. In addition to the work of feminist science and technology scholars, I draw upon Thomas Laquer's *Making Sex* and Paul B. Preciado's *Testo Junkie* to show how the development of reproductive technologies is intimately tied to capitalistic desires to regulate bodies (particularly that of the female sex) and maintain social control.

Chapter two explores how robots and androids articulate the roles of mothers and daugthers in the films *Eva* (2011) by Kike Maíllo and *Autómata* (2014) by Gabe Ibáñez. As

objects of scientific study and technological innovation, and as figures in SF that raise ethical and moral questions, robots are at the intersection of science and the humanities. As cultural figures that are both real and imagined, robots and artificial intelligence (AI) are becoming part of our social reality and transforming everyday life. Despite the worldwide growing popularity of SF and AI, in Spain, filmmakers have faced immense challenges in making this type of genre film. Therefore, the first part of the chapter details in depth, the mechanisms that have helped Spanish filmmakers overcome these challenges such as co-productions, genre hybridity and participation in the circuit of film festivals that has allowed films to be watched and distributed among an international audience. From there, I examine how SF portrays the relationships that form between humans and robots, as well as the tensions that arise when machines exist alongside humans in a gendered environment. Ultimately, these works portray artificial female bodies as sites of emancipation from the established patterns of human social interaction in an attempt to create progressive familial and societal frameworks, while simultaneously offering a plea for the empathic and ethical treatment of artificial people. Additionally, this chapter explores at what point AI is considered more than just a machine when we go beyond biological definitions of human and humanity, and how these fictional human-robot relationships can inform our understanding of what it means to be daughters and mothers.

Chapter three focuses on how contemporary Spanish authors are appropriating the cyberpunk aesthetic of the 1980s by situating the subgenre's signature tropes within a more complex social web that encompasses not only sex and gender but also race and class. This allows for discussion of the political dissatisfaction, and racial and economic inequality present in a 21st century in which neoliberalism is the prevailing economic paradigm in many parts of the world. While feminists have criticized traditional cyberpunk's conservative social values and

display of heteronormative conventions of gender, sexuality, and power, *El sueño del Rey Rojo* (2014) by Rodolfo Martínez and *Switch in the red* (2009) by Susana Vallejo contain strong female characters that seek to destabilize institutions and power hierarchies that threaten bodies marked by economic class, gender and race. "Mil euros por tu vida" (2008), a short story by Elia Barceló will also be discussed. Although Barceló's story cannot be categorized as cyberpunk, and is best described as dystopian, it serves as an example of how a different subgenre of SF approaches a concept traditionally associated with cyberpunk: mind upload. Furthermore, it demonstrates the fluidity of SF genres. Through fictional representations of cyberspace where users take on multiple identities, networks that incite political activism, and brain-computer interfaces that facilitate mind upload, Martínez, Vallejo and Barceló examine both existing and potential implications of technology on a social, economic, political and philosophical level. In my reading of these texts I draw upon the work of cyberfeminists and feminist science and technology scholars to show how the liberatory or repressive nature of technology depends in large part on one's racial and socioeconomic background. Similar to how the contraceptive pill (discussed in chapter one) was tested on poor, illiterate women in Puerto Rico who were unaware that they were part of an experimental trial, the fictional technologies examined in chapter three show how scientific and technological advancements are often realized at the expense of those in less affluent nations.

Advances in biotechnology, robotics and cybernetics are changing the relationship between technology and the human body. Like Braidotti states, "contemporary science and biotechnologies affect the very fibre and structure of the living and have altered dramatically our understanding of what counts as the basic frame of reference for the human today" (Posthuman 40). As technology alters the conditions of human existence, new ethical frameworks must be

established to address our choices and actions. Chapter four examines how the authors discussed in the previous three chapters, critically engage scientific concepts while raising ethical and moral issues.

Through my reading of various dystopian and cyberpunk literary and filmic texts, I hope to show how Spanish SF is critically engaged with contemporary issues that threaten the autonomy of the female body. By situating the analysis of these texts within the framework of feminist science and technology studies, one can better see how the juxtaposition in these works on the one hand of a masculinist bias of science and on the other a radically feminist revisioning of science, is indicative of the ongoing anxiety in Spain over reproductive technologies, family models and laws that are increasingly accomodating the wide spectrum of sexual identities. Ultimately, the authors show how both a mysoginist and radically feminist science are problematic and detrimental to society.

As more projects are dedicated to the study of SF in conjunction with feminist science and technology studies, greater long-term socio-cultural transformations will be possible. SF allows one to question the underlying premise that science is a purely objective discipline without the constraints of existing institutions. A bridge between the sciences and humanities, the study of SF can illuminate how the construction of scientific knowledge is highly gendered through the reading of stories that highlight the struggles of women and people of color.

Chapter 1

Biotechnology: Reproduction, Motherhood and Gendered Hierarchies

During the second half of the 20th century, concurrent with the emergence of second wave feminism, production of North American and British feminist SF increased, as exemplified by the publication of Ursula Le Guin's *The Left Hand of Darkness* (1969), Joanna Russ' *The Female Man* (1975), Marge Piercy's *Woman on the Edge of Time* (1976), Doris Lessing's *Canopus in Argos* series (1979-1983), and Octavia Butler's *Xenogenesis* trilogy/*Lilith's Brood* (1987-1989). This wave of female writers employed SF to question values put forth by patriarchal society and to advocate for feminist goals. SF and fantasy writings can serve as mechanisms of feminist thought bridging theory and practice: "No other genres so actively invite representations of the ultimate goals of feminism: worlds free of sexism, worlds in which women's contributions (to science) are recognized and valued, worlds that explore the diversity of women's desire and sexuality … feminism in science fiction … offers textual exploration of theoretical and activist ideals for progressive and social change" (Helford 291). Although not all female SF writing is associated with a feminist agenda, there are many utopian and dystopian works written by women that reexamine history through a feminist lens and provide visions of a radically different future.

A vision of the future is one of the most important things that utopian literature has contributed to feminism: "We are all, in one way or another, involved in projections of our own future. Utopian fiction allows us to try these futures out in imagination; to experience … alternatives, which we may not have encountered in our present … Feminism, today, is the most utopian project around … that sense of the potential for a different and better society, which our activity can create" (Patai "Feminist Research Strategies" 150-151). Though feminist SF boomed

during the end of the 20th century in the United States and parts of Europe, in Spain SF (let alone

feminist SF) faced a series of social, political and economic challenges that delayed its

development (M. Barceló 483, Díez 9, Moreno 407, Sánchez Conejero 5). Despite these negative

perceptions of Spain and Spanish SF, contemporary Spanish women writers have published

innovative texts demonstrating how scientific discourse is part of the larger Spanish cultural

context and the important contribution women's voices have made to this often trivialized

genre.[5] This chapter explores how utopias and dystopias have been used to invert traditional

gender roles in Elia Barceló's *Consecuencias naturales* (1994) and Gabriela Bustelo's *Planeta

hembra* (2001).[6] Barceló's and Bustelo's novels illustrate how scientific discourse has informed

cultural production in Spain, particularly related to the issue of reproductive technologies. In

their works, Barceló and Bustelo invert the traditional sex-gender paradigm, offering texts that

deal with reproductive rights and biotechnologies, while including various familial and societal

models to highlight the power struggles that exist between different genders and sexes. This

analysis focuses on how biotechnology in these novels serves to control and manipulate various

populations, ultimately creating gendered hierarchies that place restrictions on an individual's

rights over his/her body to the detriment of society. Along with analyzing the use of

biotechnology in the novels to invert traditional gender roles, attention will also be given to how

narrative techniques, such as the confluence of temporal and spatial dimensions, estrangement,

and parody, underscore the unconventional social arrangements proposed in both texts. On a

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[5] Recent all female anthologies such as *Alucinadas I* (2015), *II* (2016), *III* (2017) and the two volume *Poshumanas* and *Distópicas: antología de escritoras españolas de ciencia ficción* (2018) reveal a concerted effort to showcase SF texts written by women in Spain and Latin America.
[6] Though this essay focuses on two female SF authors, it's important to note that in Spain, male SF writers significantly outnumber female SF writers; for an example of a novel with a similar thematic, written around the same time period but by a male author, see Gabriel Bermúdez Castillo's *El hombre estrella* (1988).

larger scale, this study aims to provide a Spanish complement to existing Anglo-American

scholarship on feminist SF and to serve as a foundation for future comparative studies.[7]

DEFINING UTOPIAN TEXTS WITHIN SCIENCE FICTION

When coupled with a feminist lens, utopias and dystopias, both subgenres of SF, can portray

futures that radically differ from the present state of affairs and thus raise questions about

existing sex/gender dynamics. In *Metamorphoses of Science Fiction: On the Poetics and History*

of a Literary Genre, Darko Suvin argues that SF is the literature of "cognitive estrangement" (4).

In other words, SF empirically validates that which otherwise appears as alienating to the reader.

Utopia, he then argues, is "the verbal construction of a particular quasi-human community where

sociopolitical institutions, norms and individual relationships are organized according to a more

perfect principle than in the author's community, this construction being based on estrangement

arising out of an alternative historical hypothesis" (49). Suvin's definition emphasizes the link

between the utopian text and the historical context from which it emerges. Like Suvin, Frederic

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[7] Both *Consecuencias naturales* and *Planeta hembra* bear some semblance to Margaret Atwood's *The Handmaid's Tale* (1985). Despite being SF, Atwood's novel is firmly grounded in reality. In *The Guardian,* Atwood shares that when writing the novel she had one rule for herself, "I would not include anything that human beings had not already done in some other place or time, or for which the technology did not already exist. I did not wish to be accused of dark, twisted inventions, or of misrepresenting the human potential for deplorable behavior. The group-activated hangings, the tearing apart of human beings, the clothing specific to castes and classes, the forced childbearing and the appropriation of the results, the children stolen by regimes and placed for upbringing with high-ranking officials, the forbidding of literacy, the denial of property rights: all had precedents, and many were to be found not in other cultures and religions, but within western society, and within the "Christian" tradition, itself" (n.p.). The popularity of the adaptation of Atwood's novel on Hulu demonstrates that the fears and anxieties presented in the novel still resonate with contemporary North American society. Though Barceló's and Bustelo's novels contain specific references to the Spanish context, they also show how feminist concerns can at times transcend national boundaries and how literature has a role to play in debates about the uses and misuses of science and technology.

Jameson asserts in his work *Archaeologies of the Future, The Desire Called Utopia and Other Science Fictions* that utopias are grounded in socio-historical reality. While utopias may appear to be portrayals of a perfect future, they are in fact imagined spaces that trace the problems and perils present in society so that reflection will lead to a change in course. Located nowhere, utopias begin as blank fictitious spaces that are injected with institutions, value systems, and patterns of behavior and interaction. Eventually, these elements undergo a process of transformation, thereby becoming detached from their original context, until they are ultimately re-contextualized in this new world (Hutchinson 181). Via the reading of each text, readers are displaced into these worlds, which then allows for the examination of the familiar through new configurations (182).

The presence of unfamiliar social arrangements and controversial scientific principles prompts one to question the underpinnings of society both in the fictional world and in the lived world. In Barceló's *Consecuencias naturales*, this estrangement is produced by the alien society, in which hierarchy is dependent solely on reproductive ability, while in Bustelo's *Planeta hembra* it is caused by the totalitarian matriarchal society's condemnation of heterosexuality and male homosexuality. The exaggerated sociological structures and oppressive forces present in both novels, invite readers to critically examine the scientific principles, political systems, and social relations that govern those alternative futures as well as how they compare/contrast to the dynamics present in his/her society. While on the surface both novels offer satiric overviews of feminist fundamentalism, a deeper reading shows how this defamiliarization and estrangement allows readers to disengage from their own world and actively rethink how the present and future are always in a process of continual change: "rather than prepackaged knowledge delivered to a passive reader, defamiliarization functions as a discovery that occurs through the reader's

imaginative participation in the world created by the text" (Patai 67). This defamiliarization facilitates criticism of how biotechnology affects gender hierarchies. In order to understand the complex role that biotechnology has come to play in society, in some cases placing restrictions on the female body and at other times offering women greater freedom, it's important to first discuss the historical evolution of reproductive theory and how science has historically perceived the female body.

EVOLUTION OF REPRODUCTIVE THEORY: FEMALE CREATIVE PRINCIPLE

For centuries, scientific theories, which portray women as biologically inferior to men, have had a major impact on society's attitude and treatment of women. In other words, biology, which relies heavily on observable facts, has been used as a prescriptive approach and as a justification for establishing social hierarchies on the basis of sex and gender. Conversely economics, politics, and culture have often times clouded or conditioned scientific thinking. One of the most prevalent theories in Western medicine, which assigned women an inferior physiological state to that of man, was humoral theory. According to humoral theory the human body was made up of black bile, yellow bile, blood and phlegm. In addition, each humor was believed to be associated with one of the four elements: water, earth fire and air, and with the qualities of hot, cold, wet and dry. In turn these qualities were associated with sex and used to explain a man's natural superiority over women. Heat was considered the most favorable quality with men possessing more heat than women: "women's lack of heat was seen as the reason they menstruated (men "burned up" unneeded blood internally), did not go bald (men "burned up" their hair), and had wider hips and narrower shoulders … Men's greater heat also meant they more often possessed qualities associated with heat--courage, honesty, reason, physical and moral strength" (Wiesner

32). Humoral theory would play a major role in the anatomical and physiological theories developed by Aristotle and Galen.

Understanding Aristotle's position on female human nature is key because it is from Aristotle that "many of the standard Western arguments for the inferiority of womankind and for the political subordination of women to men in home and in society" were derived (Horowitz 183). According to Aristotle development depends on heat so the more heat one has the more developed one will be. Differences in heat also account for many of the physiological and psychological differences between both sexes. As Tuana explains:

> Aristotle labels the male ejaculate "semen" and notes that male semen does not resemble blood, but is white in color. He insists that the appearance of male semen has to be the result of heat. Since a substance is transformed by being concocted and heat is required for such concoction, the appearance of male semen must be the result of an infusion of heat that concentrates the potency of the blood and changes its appearance.
>
> … Aristotle further concludes that female semen is impotent...woman's menstrual fluid is the blood that would be turned into potent semen if she had sufficient heat to concoct it. Because of woman's deficient heat, she is unable to transform this blood and turn it into seed. (148-149)

Aristotle's belief that women did not produce semen/seed had profound implications on the role attributed to each sex during reproduction. According to Aristotle's theory the female plays a passive role in conception while the male plays an active role. In conception it is the female that provides the raw material but it is the male that "imposes the form and nature of a human being onto the blood of a woman's womb" thus implying that "the female role in generation, though necessary, is relatively unimportant" (150). It is the male that gives "form and soul to the

offspring" (151). As Tuana concludes, inconsistencies in Aristotle's theory show "that the doctrine that the female sex was inferior to the male was not a premise to be proved or justified, but was rather an implicit belief underlying Aristotle's development of his biological theory and an axiom upon which he founded his theory of reproduction" (153). Although many theorists assigned women a smaller role in reproduction than men most did not agree with Aristotle's embryologic theory that only the male contributed semen, and instead argued that the fetus required semen from both sexes (153). One such theorist was Galen. Like Aristotle, Galen believed that a woman's inferiority was due in large part to heat, but he expanded Aristotle's theory by placing a greater emphasis on anatomy, specifically the difference in genitals between males and females.

As Laqueur notes, from antiquity to the 18th century, the one-sex model was one of the predominant ideologies in Europe regarding sexual difference (25). According to Galen's model of reproductive organs developed in the second century A.D., "women were essentially men in whom a lack of vital heat--of perfection--had resulted in the retention, inside, of structures that in the male are visible without" (Laqueur 4). In this model, the male body is a symbol of perfection while the female body is seen as a weaker variation of male anatomy in which the "vagina is imagined as an interior penis, the labia as foreskin, the uterus as scrotum, and the ovaries as testicles…a woman has testes with accompanying seminal ducts very much like the man's, one on each side of the uterus, the only difference being that the male's are contained in the scrotum and the female's are not" (4). Additionally, according to Galen, women were inferior because they were produced by the seed originating from the left testicle while men were produced from the seed originating from the right testicle:

The corresponding veins and arteries of the left testes arise from the renal vessels going

to the left kidney and thus carry uncleansed blood … Because it is impure, such blood

contains less heat, which will result in its producing imperfect seed. The male seed,

however, fed from the pure blood of the vena cava and the aorta, is able to achieve

complete development and is thus more perfect than the female seed. (Tuana 156)

It would later be discovered however, that the veins and arteries of both the right and left testes

are derived from the vena cava and aorta. Luckily for Galen, this mistake is what allowed him to

explain a woman's biological inferiority. As Tuana concludes, "Galen developed one of the first

biological explanations of the inferiority of the female creative principle. Since woman was

conceived of impure blood, she was colder than man. Because of her defect in heat, her organs of

generation were not fully formed. Because her sexual organs were not fully developed, the seed

produced by them would be imperfect" (156).

In Spain, Andres de Laguna, an anatomist, held similar beliefs to that of Aristotle and

Galen regarding a woman's inferiority in procreation claiming, "although the female testicles are

inside her body they are endowed by nature, however, with little semen; and it is much colder

than in men. The male semen is not sufficient by itself for generation unless it is mingled and

poured together with female semen, that is, for composing the offspring" (279). Although

Laguna like Galen, believed that women did play a role in reproduction, her role was not as

essential as the male's since the female seed was corrupted by impure blood. For many

generations, the assumption that women were inferior influenced the interpretation of data and

scientific explanations about sex, assigning women an insignificant role in reproduction.

In fact, initially some female organs did not even have their own names, requiring one to

rely on context to determine which sex was being described. It wasn't until the 18th century that

the two-sex model became the new standard as "organs that had shared a name--ovaries and

testicles--were now linguistically distinguished. Organs that had not been distinguished by a name of their own--the vagina, for example--were given one…the bodies of women--the perennial other--thus became the battleground for redefining the ancient, intimate, fundamental social relation: that of woman to man" (Laqueur 149-50). This shift from the one-sex model to the two-sex model was due in large part not to new scientific discoveries about the human body but to politics. With the rise of capitalism and the bourgeois public sphere in the 19th century, in order to preserve hierarchies and class distinctions, it became necessary to differentiate between males and females (194). Although significant improvements were made to previous models as new theories were established, the gender bias in biological findings continued well into the 19th and 20th centuries. As Tuana explains, "the gender/science system is woven tightly into the fabric of science. To unravel the complexities of the pattern of bias against women and reweave our theories and practices of science will require a similar transformation of our worldview and of the social practices and institutions that are justified by the gender/science system and in turn reinforce it" (169). Just like science plays a role in dictating society's beliefs and values, science too can be influenced by culture and society.

Science and society mutually reinforce each other in a vicious circle. SF is one avenue that has been used to explore this gender/science bias. This genre, specifically feminist utopian and dystopian novels, demands a radically better future where women have greater autonomy over their bodies. If indeed society can embrace change in the form of less traditional familial and social structures, biotechnology is one tool that can provide women greater freedom and choice.

THE RISE OF BIOTECHNOLOGY IN SPAIN

While scientific discourse has at times served to relegate women as biologically inferior,[8] contemporary authors are incorporating biotechnology into their texts, including reproductive technologies, in order to re-examine how gender roles are socially constructed. Biotechnology benefits from the use of living organisms or cell processes to make useful products. Although biotechnology has been around for centuries it gained worldwide attention in 1997 when Dolly became the first mammal to be cloned from adult cells (Weintraub). There are four major applications of biotechnology, which include health care, crop production and agriculture, nonfood (industrial) uses of crops and other products such as biodegradable plastics, vegetable oil, biofuels, and environmental uses such as bioremediation (Khan xxi). Specifically in medicine, "modern biotechnology finds promising applications in such areas as drug production, pharmacogenomics, gene therapy and genetic testing" (xxi). This chapter will focus on the medical applications by taking a close look at the use of contraceptives, genetic engineering and cloning.

As highlighted in an August 2016 *Marca España* article "Biotecnología en España: sector competitivo e innovador" Spain's biotechnology sector has become one of the most competitive in the world and is continuing to grow. Biotechnology has been the flagship of science in Spain in large part due to the legacy of Dr. Severo Ochoa, winner of the 1959 Nobel Prize in Physiology or Medicine with Arthur Kornberg (Ariza). Spain's Severo Ochoa left behind a lasting legacy and inspired generations of Spanish scientists. Held biannually, Biospain is one of

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[8] In the 80s, concurrent with second-wave feminism and feminist SF, feminist science and technology studies coalesced as a field out of the need to critically examine how scientific inquiry is affected by culture and consequently how science has been a source of gender-based forms of oppression. See Evelyn Fox Keller's *Reflections on Gender and Science* and Sandra Harding's *Whose Science? Whose Knowledge? Thinking from Women's Lives.*

the biggest biotechnology business fairs in the world.[9] It is important to note, however, that even though biotechnologists and multinational companies founded in Spain have made significant inroads, as a result of the country's Catholic tradition, it has not been without its challenges. By the very nature of the disciplines' objects of study and techniques (embryos, genetic manipulation, etc.), biotechnology places scientific progress in conflict with ethical and religious belief systems that can constrain research and development.

Today, there are thousands of known genetic disorders, which can be passed down from generation to generation. Advocates of genetic engineering such as Carlos Simón, a specialist in reproductive medicine and founder of Igenomix, a multinational biotech company, argue that thousands of lives can be spared by being proactive during the screening and reproductive process:

> Con técnicas que escrutan los genes y los cromosomas de los embriones sin dañarlos para implantar solo aquellos que darán lugar a una descendencia libre de enfermedades; o que analizan el útero en mujeres con más dificultad para concebir para determinar cuál es el mejor momento para transferirlos. "La mayor discriminación genética que pueda cometer una sociedad que técnicamente cuenta con los medios adecuados es *no* evitar el nacimiento de niños con defectos genéticos y cromosómicos que los matan al nacer, en la adolescencia o madurez" (qtd. in Ariza).

According to Simón, societies that have the means to prevent the birth of children with deadly genetic diseases or diseases that will result in a poor quality of life have the duty to prevent such births. On the other hand, those who oppose genetic engineering often do so on religious and

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[9] For a detailed analysis of recent biotechnology production in Spain and how it compares to world trends, see the 2017 report compiled by FECYT (Fundación Española para la Ciencia y la Tecnología).

ethical grounds. The presence of biotechnology as a central motif in contemporary novels demonstrates the ongoing anxiety in Spain over scientific innovation and the evolving role of biotechnology in reproductive theory.

REPRESENATIONS OF BIOTECHNOLOGY IN *CONSECUENCIAS NATURALES*

Women played a very limited role in the development of Spanish SF until Elia Barceló consistently began publishing in the 1980s. Moving readers outside familiar boundaries, particularly norms related to gender, is a recurring theme in Barceló's work. Although Barceló states, in an interview with Cristina Sánchez-Conejero, that she is not actively involved in the feminist movement, she affirms that a society must demand mutual respect between both sexes (189). Barceló has addressed issues of sexuality while deconstructing patriarchal paradigms "through the construction of alternative cognitive scenarios" in works such as *Sagrada* (1981) and *Consecuencias naturales* (Perriam et al. 104). Despite writing in a male dominated genre, Barceló has won numerous awards and is considered Spain's leading female SF writer. In an interview for *El País* with Juan Manuel Játiva, Barceló boldly claims that SF is the only genre that delivers new themes to audiences, unlike other genres, which often merely produce new spins on old themes. Known as la gran dama de la ciencia ficción, Barceló won the first Ignotus Award, created by the Spanish Association of Fantasy, Science Fiction and Terror (AEFCFT) in 1991, a prize that acknowledges works of SF in categories including novel, novella, anthology, illustration, website, and short story. In 1993, Barceló became the first female to win the International Prize of the Polytechnic University of Catalonia (UPC) for her novel *El mundo de Yarek*. Also created in 1991, the UPC award is the most important prize in Spanish SF (Romero

445). Awards such as Ignotus and UPC help promote the visibility of the genre, specifically the contributions of Spanish authors.

Aside from writing SF, Barceló has expanded into other literary genres including fantasy and young adult novels, and her works have been translated into several languages including Catalán, English, French, German, Italian, Russian and Chinese. This has given Barceló entry into other markets, expanding her readership. Her young adult novels include *El caso del artista cruel (1998),* which won the Edebé award for young adult literature, *El almacén de las palabras terribles* (2003) and *Cordeluna* (2007), once again winner of an Edebé award. Her works of fantasy include *El vuelo del hipogrifo* (2002) and *El secreto del orfebre* (2003), both published by Lengua del Trapo, a less specialized editorial that reaches a wider audience. In 2014 she returned to SF with *Hijos del clan rojo*, winning the Premio Celsius, which is awarded annually during La Semana Negra de Gijón to the best fantasy, SF or horror novel originally published in Spanish. Though Barceló has had great success in other genres, she will always have a place in history as one of the top three Spanish language female sci-fi writers alongside Argentine Angélica Gorodischer and Cuban Daína Chaviano.

Consecuencias naturales, one of Barceló's earliest and perhaps most polemical novels provides a commentary on machismo and a portrayal of how reproductive theory is changing traditional gender roles. *Consecuencias naturales* recounts the journey of Nico Andrade, the male protagonist, as he works through the various stages of a typical female reproductive process: from copulation to gestation, parturition, and finally acceptance of a maternal role. Andrade's pregnancy raises many of the same ethical and legal questions that have surfaced regularly in contemporary Spanish society, such as issues surrounding the use of contraceptives, rape, and abortion, but here those issues are presented in the context of the male body. As

Sánchez Conejero points out in "Nacionalismo, racismo y feminismo: una anti-utopía de ciencia ficción," a chapter from *Novela y cine de la ciencia ficción española contemporánea*, through Andrade, Barceló has created a character that fully embodies the "Iberian macho". [10] Via the male protagonist, Barceló "[expone] los problemas del machismo que aún [existen] en España, pero no desde una postura de feminista militante que hace uso de propuestas discursivas para cargar las tintas contra todo lo relacionado con los hombres, independientemente de la validez y/o lógica de la propuesta en sí" (55). Instead of advocating for gender equality through linguistics, Barceló places the male protagonist in a position in which he can witness firsthand the machismo that women have been subjected to for centuries.

In particular, Barceló's novel takes issue with the proposal that Spanish articles, adjectives, and nouns should use both feminine and masculine gender. Sánchez-Conejero cites that in 2006 el Instituto de la Mujer demanded "la eliminación del masculino genérico del DRAE" (53). For decades the sexism inherent in the Spanish language has been widely debated and feminists have pushed for a more inclusive language. As Elisa G. McCausland who analyzes popular culture from the perspective of gender, comments, "[h]ay una deuda histórica con la visibilización de las mujeres. El lenguaje lo utilizas para visibilizar lo que es visible y lo que no" (qtd. in Mohorte n.p.). One proposed solution has been to use both the feminine and masculine in written and spoken language but the Real Academia Española (RAE) vehemently opposes this:

Este tipo de desdoblamientos son artificiosos e innecesarios desde el punto de vista lingüístico … La mención explícita del femenino solo se justifica cuando la oposición de sexos es relevante en el contexto: *El desarrollo evolutivo es similar en los niños y las*

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[10] For a different reading of *Consecuencias naturales* and Barceló's other works see Vanessa Knights. Her analysis focuses on how Barceló uses cognitive estrangement in her works to facilitate the reader's ability to critically examine contemporary socio-cultural structures.

niñas de esa edad. La actual tendencia al desdoblamiento indiscriminado del sustantivo

en su forma masculina y femenina va contra el principio de economía del lenguaje y se

funda en razones extralingüísticas. Por tanto, deben evitarse estas repeticiones, que

generan dificultades sintácticas y de concordancia, y complican innecesariamente la

redacción y lectura de los textos. (qtd. in Mohorte n.p.)

Likewise Carmen Escobar, a philologist, argues that the issue is not language but society and that

practicing auto conscience would be more useful:

"Creo que es conveniente ser más consciente cuando se habla de que el lenguaje que

usamos está plagado de expresiones hechas por la sociedad en la que vivimos y que esta

es patriarcal. Está lleno de expresiones que discriminan a minorías". El lenguaje, según

ella, no puede ser artificial es difícilmente imponible por la vía normativa. "Es natural y

fluye", explica, "creo que se puede usar el lenguaje no sexista para señalar una realidad,

pero el lenguaje no cambiará nada si no cambia la sociedad". (qtd. in Mohorte n.p.)

Barceló, who has studied philology, is on the side of linguists, and she shows the ludicrousness

of using both genders in the speech given upon the arrival of the Xhroll: "Honorables huéspedes

del planeta Xhroll. Todas y todos nosotras y nosotros, ciudadanas y ciudadanos del planeta

Tierra, nos sentimos inmensamente honradas, honrados y orgullosas, orgullosos por el raro

privilegio que nos ha sido concedido al poder contar con vuestra presencia aquí" (16). This

welcome speech, which uses both feminine and masculine adjectives and nouns, establishes early

on in the novel that, although *Consecuencias naturales* proposes a shocking inversion of binary

reproductive roles, the text critiques feminist fundamentalism and instead offers a more nuanced

vision of a feminist future. Furthermore to bring about change, the novel doesn't rely on

language, but on science. According to Barceló we need to go beyond language and she notes

that "este tipo de alternativas lingüísticas sólo camuflaría el problema del machismo, ya que hasta que el hombre machista no se sitúe en la posición de la mujer que sufre los abusos y la discriminación del machismo, no habrá un avance significativo al respecto" (Sánchez-Conejero 55). Rather than relying solely on language "Barceló utiliza el caso extremo de la violación para posicionar al hombre en el papel de la mujer víctima del machismo" (55). Through the character of Andrade, Barceló criticizes the machismo still present in Spain.

Andrade is one of several hundred crewmembers that live aboard the *Victoria*, the space station located furthest from planet Earth. Aboard the station, Andrade has become notorious for being a Don Juan; when he learns that members of Xhroll, a humanoid alien species, are in need of mechanical help and about to enter their base, his first sexist question is: "¿Hay alguna mujer? Hace siglos que no vemos carne fresca" (12). Engrossed in the idea of achieving fame, Andrade proceeds with his plan to become the first human to have sexual relations with an alien species. Before engaging in coitus, the Xhroll warns Andrade that it is not using any type of contraceptive. Rather than assume responsibility and take precautionary measures, Andrade decides to fool the Xhroll by pretending to ingest birth control by swallowing an aspirin. Unfortunately for Andrade, it is not the Xhroll, but he himself who becomes impregnated, thus marking the beginning of his journey towards "motherhood." The text thus plays with gendered norms, misogynistic assumptions, and the fluidity of gender roles in this fictive future space.

Andrade's character and actions raise several issues regarding sex and gender that have been widely debated in Spain and brought to the courts in recent years, including the role that contraceptives have played in controlling the female body,[11] the function of abortion in unwanted

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[11] Ideology and science often conflict, especially in a country with deep roots to Catholicism. As Eduardo del Campo reports, in 2008 a pharmacy in Seville was fined for refusing to sell emergency contraceptive pills. As a result, the pharmacy decided to bring the case to the

pregnancies, and the primacy of fetal rights over maternal ones. To help elucidate how these issues play out in *Consecuencias naturales*, it is helpful to recall how definitions of sex have changed over time and the increasing role that biotechnology plays in manipulating and controlling the body. As was explained in the introduction of this chapter, there was a shift from the one-sex model to the two-sex model at the end of the 18th century. This transition from the one-sex model of the sovereign society to the two-sex model of the disciplinary society was accompanied by increased surveillance and control of the human body by state apparatuses. In *Discipline and Punish: The Birth of the Prison*, Foucault argues that institutions such as schools, hospitals and jails, function to reform and normalize individuals into docile and utilitarian bodies. According to Paul B. Preciado, after WWII (or in the case of Spain, after the Spanish Civil War), sex and sexuality were once again the center of political and economic activity. During the latter part of the 20th century there was a major paradigm shift as biotechnology and the visual era redefined sexual identity.[12] Preciado coins this third regime of subjectivization,[13] "the pharmacopornographic society" (77). These new technologies of control include "biomolecular, digital, broadband, data-transmission ... that could be injected, inhaled— 'incorporated'... the technologies become part of the body: they dissolve into it" (77-78). These new forms of technology function at the molecular level, and regulate the body at the cellular level. In other words, while in the disciplinary society of the 19th century, the body was controlled externally, in the pharmacopornographic society, repression originates from within

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Constitutional Court. In July 2015, the Court determined that the pharmacy had the right to refuse to sell the pill because it conflicted with the owner's beliefs regarding the right to life. This decision caused great backlash by those who believe that Spanish women should be free to exercise their reproductive rights and that those rights should be protected by national law.

[12] The visual era refers to the proliferation and infiltration of television, cinema, Internet, video games, etc. into daily life.

[13] The first two regimes Preciado refers to are Foucault's sovereign and disciplinary societies.

one's own body. Made up of artificial hormones, the contraceptive pill was the first biochemical technique to facilitate the separation of heterosexual intercourse and reproduction.[14] In order for birth control to be effective, however, it requires that women be very disciplined about taking their daily dose. In short, Preciado argues that the contraceptive pill is an edible panopticon "where the surveillance tower has been replaced by the eyes of the (not always) docile user of the pill who regulates her own administration without the need for external supervision" and where "the prison cell has become the body of the consumer" (205). In *Consecuencias naturales*, by refusing to use an actual contraceptive, Andrade fulfills his sexual desires at what he believes to be the expense of the Xhroll. His disregard for any precautionary method demonstrates how undisciplined he is and how little he esteems the life of the Xhroll with whom he is about to have sex.

To Andrade, women are superfluous commodities created to satiate men's primordial desires; at one point in the story he even remarks, "Era muy agradable tener compañía en la cama cuando uno estaba despierto, pero una vez zanjada la cuestión primordial, lo correcto era que la chica tuviera el buen gusto de marcharse a su propia cama y lo dejara descansar a sus anchas" (110). Tired of Andrade's archaic attitude and behavior towards women, Charlie, one of Andrade's superiors, adds a comedic touch to his mysogeny when she states that Andrade is a type of *Homo erectus* living in the XXIII century. By comparing Andrade to *Homo erectus*, who arose 1.8 million years ago and is associated with the first major innovation in stone tool technology, Charlie highlights Andrade's fossilized treatment of women. Moreover, the juxtaposition of time periods and the play of words with erectus and "erect," serve as subtle

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[14] Representative of its disciplinary roots, the first large clinical contraceptive pill trials were performed between 1956-1957 on female psychiatric patients at Worcester State Hospital and on male prison inmates in Oregon (Preciado 175).

commentary that although advances have been made in the scientific and technological arena, sociologically, progress has been much slower. There continue to be some sectors of Spanish society where one still finds traces of machismo and the reckless wielding of the phallus. In fact, in her interview with Sánchez-Conejero, Barceló admits that *Consecuencias naturales* caused public controversy since some "lectores se sintieron ridiculizados y agredidos a través del personaje de Nico Andrade" (190), despite the novel's ironic undertones.

Like machismo, a social structure yielding patterns of negative consequences for women, the contemporary pharmaceutical industry is similarly an economic powerhouse that can also cause significant undesirable social effects. Indeed, with the rise in prescription drug use and ubiquitous medication, differences between biotechnology and the human body's natural mechanisms are becoming indistinguishable. In other words, according to Preciado, the pharmacopornographic regime has created a lucrative performative feedback mechanism through which artificial chemical substances and molecules are conflated with the body's physiological demands and desires: "The success of contemporary technoscientific industry consists in transforming our depression into Prozac, our masculinity into testosterone, our erection into Viagra, our fertility/sterility into the Pill…without knowing which comes first: our depression or Prozac, Viagra or an erection, testosterone or masculinity, the Pill or maternity" (34-35). These artificial substances have become trademarks of the human body. In the SF world of *Consecuencias naturales* women are sterile until they actively take the drugs that will return their fertility, thus eliminating the need for either sex to use contraceptives. In a sense, this gives women greater agency over their own bodies because the decision to become fertile is now solely in their power. However, it has also freed the male sex of all liability. Men in Andrade's

world are so removed from any sense of reproductive responsibility that Andrade muses on male

contraceptive devices as part of ancient history:

> Prácticamente todas las mujeres humanas eran voluntariamente estériles hasta que
>
> decidían invertir la situación y tomaban los fármacos que les devolvían la fertilidad.
>
> Antiguamente existían unas fundas de goma que se ajustaban al pene y evitaban la
>
> entrada del semen masculino en el útero de la mujer pero estaba seguro de que en toda la
>
> Victoria no había uno solo de esos inventos antediluvianos, aquello era una estación
>
> especial, no un museo. (27-28)

After centuries of women being in control of if/when fertilization will occur, Andrade is shocked

to learn that in the society of the Xhrolls, contraceptives are still used and that it is his

responsibility to take precautionary measures. Ultimately, Andrade has no qualms about taking

the aspirin as a placebo to psychologically appease the Xhroll because he believes that even in

the unlikely event of a pregnancy, it is the female that will carry the burden. Indeed, this same

risk-benefit analysis represented in the novel by Andrade is one of the central issues that

contemporary science has had to grapple with in creating a pill for men. In *The Male Pill: A

Biography of a Technology in the Making*, Nelly Oudshoorn explains that pressure to create new

male contraceptives did not originate in the scientific community but rather from the

governments of India and China who were seeking population control and from feminists in the

Western industrialized world who wanted both sexes to share equally in the responsibilities and

health risks associated with contraceptives (7). Despite the technical feasibility of creating a male

contraceptive akin to the pill, throughout the 20th century research was primarily aimed at

controlling female reproductive functions, not those of men. The assumption is that there is a

risk-benefit analysis that applies to women but not men, and thus it appears unlikely that there

will be a male contraceptive anytime soon, as a recent NPR story argued after a clinical trial was suspended due to side-effects for men: "when women use a contraceptive, they're balancing the risks of the drug against the risks of getting pregnant. And pregnancy itself carries risks. But these are healthy men — they're not going to suffer any risks if they get somebody else pregnant" ("Male Birth Control" n.p.). In *Consecuencias naturales*, Andrade's assumption that the Xhroll are governed by the same physiological mechanisms as the human species leads him to the conclusion that unprotected sex is better than no sex, but to Andrade's horror, it is he who becomes impregnated and not the Xhroll. To mitigate the shock of a male pregnancy and to ease the reader into the events about to transpire, there is a change in setting; the second part of the novel takes place on planet Xhroll.

By having Andrade go through the process of gestation in unfamiliar territory, a degree of critical distance is created, allowing readers to reflect on their own experiences. Indeed, as details of the social hierarchy on planet Xhroll are disclosed, a parallel is established between the Xhroll's overbearing treatment of those who are pregnant and our own society's treatment of expectant mothers. On planet Xhroll, the alien species is better equipped to assist with what Andrade describes as a hostile relationship between the fetus and host, thereby portraying the fetus-mother bond as a parasitic relationship. Given the lack of a uterus in which to gestate, the fetus creates an internal network using Andrade's organs in order to sustain and house itself. Andrade feels taxed in other ways as well, describing the maternity ward as a maximum-security prison. Xhroll's small population and low fertility rate have fostered a social structure that revolves around reproductive ability. Individuals are "abba" (those who can give birth), "ari-arkhj" (those who can impregnate), or "xhrea" (those who are incapable of reproducing and who oversee life on Xhroll). During his stay, Andrade's status becomes that of an *abba*. In many

Semitic languages, "abba" means father, which in the novel serves to further emphasize the increased paternal role in the process of maternity. Though the *abbas* are greatly revered and respected given their role in keeping the species from extinction, they are also considered public patrimony and lack civil rights. Since they carry life, they are part of the common good that must be protected at all costs. Andrade comments:

> Por milésima vez en los últimos meses se sentía ridículo y humillado, un mero objeto sin voluntad ni capacidad de decisión a quien se le hacían pruebas y se alimentaba y ejercitaba convenientemente, un ser de segunda categoría a quien no se le daban explicaciones directas, un mero pedazo de carne en crecimiento. (81)

Andrade's role as an *abba* parodies the state of inactivity and compliance that is often imposed and expected of women during the various stages of fetal development.

The novel highlights a variety of controversial social issues in the Xhrollian society that are also feminist issues of concern in Spain, including rape, unwanted pregnancy, and abortion. The passive role assigned to the *abbas* is due in part to the fact that Xhroll is a collectivist society, which puts the interest of the group above that of the individual. Given this mentality, in the event that Andrade gives birth to a viable being, Xhroll is willing to rape all of the men on *Victoria* if it will ensure the survival of the species. This is also the reason the Xhroll are unwilling to allow Andrade to have an abortion even though Andrade describes the fetus as a monster and a tumor, and is horrified when he feels it begin to kick. Andrade is being forced to endure an unwanted pregnancy in which the fetus has more rights than he does, bringing to light the issue of reproductive rights. This exaggerated inversion of reproductive roles, exists in an imagined world that is vastly different from the here and now. As Bartkowski notes, "some feminist utopian fictions mix satire and utopia as a way of bringing the here and now into the

future of possibility … Utopian thinking is crucial to feminism, a movement that could only be produced and challenged by and in a patriarchal world" (12). Citing Ernst Bloch's theory of "the not-yet", Bartkowski explains that "for feminists working with narrative the not-yet can rewrite views of the past and present even as it projects possible futures … feminist fiction and feminist theory are fundamentally utopian in that they declare that which is not-yet as the basis for a feminist practice, textual, political or otherwise" (10-12). The novel's reversal of reproductive roles critiques the policies of patriarchal society regarding abortion while positing a radically different future. As Bartkowski notes in the cross cultural study of utopian texts from the United States, Canada and France, there was a shift in utopian critique from capitalism to patriarchy in texts from late 19th to late 20th century (9). This criticism of patriarchy is also seen in Spanish texts produced at the end of the 20th century. The novel dedicates a significant amount of space to describing the authoritarian reproductive policies of the alien species because in Spain the issue of reproductive rights and abortion has been a very controversial issue given the country's conservative history and deep ties to Catholicism.

To understand how the novel is a textual feminist project that offers a future vastly different from Spain's patriarchal past, it's important to be familiar with the reproductive policies supported by the Francoist regime as well as the policies that were enacted once democracy was established at the end of the 20th century. During most of Franco's dictatorship, the State and the Catholic Church were inseparable. Under the Francoist regime, women were relegated to the private sphere since the family "connected vertically with the state rather than horizontally with society" (184) as Graham points out in "Gender and State: Women in the 1940s". The family was considered the backbone of society and a woman's job was to be a perfect mother and wife, ascribing to the ideals of the Virgin Mary and Isabel la Católica. Francoist rhetoric ascribed great

symbolic significance to mothers but they had very little power over their families, bodies and decisions (Arkinstall 49). The Franco regime cited church doctrine and argued for a policy of pronatalism given the many lives lost during the Civil War, while criminalizing contraception and abortion. However, as Graham notes, socio-economic class mediated a woman's experience in Spain and many poor working class women had to use "whatever birth control methods they could gain access to--and abortion, as before--to exert some degree of control in order to protect their own health, and stave off economic disaster" (192). After Franco's death, Spain underwent significant political and social changes during its transition to democracy. With the Partido Socialista Obrero Español (PSOE)/Spanish Socialist's Workers Party in power, the 1985 Organic Law 9/1985 legalized abortion in three cases.[15] Then in 2010 with PSOE once again in power, Organic Law 2/2010 provided an even more liberal abortion policy.[16] In 2011, Spain's Partido Popular (PP)/Popular Party regained control of the government and sought to tighten restrictions on abortion. Given the PSOE's and PP's opposing views on abortion, thousands of both pro-life and pro-abortion supporters have taken to the streets in the last decades to voice their opinions. It is a continuous give and take legal battle between the rights of the mother and the rights of the fetus. Abortion in Spain continues to be an ongoing controversy and this struggle is reflected in Barceló's novel. By having a male protagonist serve as an advocate for the rights of the "mother," one is prompted to re-examine the gender disparities of Spain's medical, legal and political fields.

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[15] The three instances were as follows: if the pregnancy posed a serious risk, either for the mental or physical health of the woman, if the fetus had malformations, or if the fetus was conceived in the context of rape.

[16] Abortion was allowed during the first fourteen weeks, and in cases of fetal deformities, abortion was allowed up to the twenty-second week.

In *Consecuencias naturales*, Andrade's struggle to accept the monstrous being growing inside of him is a reminder of the physical and psychological toll a pregnancy can take on a woman, especially in the instance of an unwanted pregnancy. As long as Andrade's status remains that of an *abba*, he has no voice and no rights over his own body because the life of the fetus is considered more precious than his own. Throughout the novel, Charlie's (Andrade's superior) comedic and reflective digressions help place Andrade's complaints about pregnancy in historical perspective:

> Se había progresado mucho en cuanto a igualdad de derechos y oportunidades entre los sexos…Lo que a nadie podía habérsele ocurrido era que un macho humano pudiera encontrarse en la situación que durante miles de años había sido tristemente normal para todas las mujeres del planeta: tener que llevar a término un embarazo no deseado sin contar ni siquiera con el consuelo de sentirse apoyada por una pareja… los machos habían podido durante milenios eludir su responsabilidad mientras que las hembras, aunque, de haber podido, probablemente también lo habrían hecho, se habían visto encerradas en los límites de su propio cuerpo que llevaba adelante la tarea de la reproducción sin contar con su permiso. (64-65)

Andrade is finally held accountable for his actions and treatment of women. Having followed Andrade's arduous journey through maternity, from fertilization to the postnatal period, the novel comes full circle in the third and final part as Andrade returns to his own space station with the newborn. The novel's last lines emphasize the fluidity of sex and gender. Charlie comments, "[s]eguro que alguien habría empezado a darle el biberón a Lenny, que se había convertido en la mascota oficial de la *Victoria*, pero ella quería hacerlo personalmente. Al fin y al cabo era su hija. O su hijo. Y ella era su madre. O su padre. O su madre. O su padre. O…" (185). The

novel's ending reiterates that one's biological sex should not dictate one's maternal or paternal responsibilities.

By using an SF framework, having the story unfold in a different spatial and temporal dimension, and inverting the traditional reproductive roles assigned to males and females, Barceló invites readers to distance themselves from their own cultural norms in order to critically examine sociocultural realities. Throughout the novel, Barceló meticulously draws the reader's attention to the contentious dynamic between sex, gender and motherhood. At one point, Charlie wonders whether a man automatically becomes a woman when he takes on the role of a female during reproduction. Also, by relying on appearances, Andrade mistakes the Xhroll for a female because of it's breasts, when in fact the Xhroll with whom he has intercourse is male. Through estrangement, parody, and exaggeration, Barceló shows that, although society has evolved in terms of scientific advancement and allowing women greater legal control over their bodies, strides still have to be made in terms of people's perceptions of motherhood and the complicity between sexual difference and social power inequities.

Indeed, redefining motherhood has been fundamental to feminist movements, and within literature this impulse has led to a complex and ambivalent relationship between honoring motherhood and critiquing it. Historically, patriarchal society has assigned steadfast gender binaries to one's role in reproduction and child rearing. Thus, at times, novelists and feminists have critiqued motherhood as a source of women's oppression, while at others, they have honored motherhood and a woman's commitment to the family. Motherhood has transformed from a lifetime identity or synonymous relationship between womanhood and motherhood "to a role--an identity that could be taken on, thrown off, or combined with other identities" (Allen 220). Motherhood is a social construct, easily molded by political ideologies. As society

becomes more accepting of alternative familial configurations, motherhood is being reconceptualized to encompass the wide spectrum of sexual identities. Sexual identity is a central theme of the second novel analyzed in this chapter.

REPRESENTATIONS OF BIOTECHNOLOGY IN *PLANETA HEMBRA*

While the discussion of *Consecuencias naturales* has focused on contraceptives and maternity, the analysis of Gabriela Bustelo's *Planeta hembra* will focus on how genetic engineering and cloning are revolutionizing reproductive intervention and paving the way for societal structures that offer an alternative to traditional patriarchal society.[17] While prior studies focus on the characteristics that Bustelo and her two novels share with other writers and works of the Generation X, how Bustelo uses linguistics to subvert the Spanish languages' masculine norm, or how Bustelo incorporates cyberfeminism into her novels, I will focus on the representations of biotechnology via a feminist lens. As Nina Molinaro notes in her essay, "Watching, Wanting and the Gen X Soundtrack of Gabriela Bustelo's *Veo veo*" though Gabriela Bustelo is not as well known as Lucía Etxebarria, she too offers a neorealist and feminizing vision of contemporary Spain via the female protagonist's journey through Madrid in her first novel *Veo veo*. In keeping in line with other Spanish Gen X novelists, *Veo veo* is laced with characters fully immersed in the world of drugs, alcohol, sex and pop culture. Though Bustelo's second novel, *Planeta hembra,* is categorized as SF, elements of Spanish Gen X narrative are pervasive in its many references to advertising, pop culture, cinema and television. Carmen de Urioste traces the

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[17] For other readings see Elizabeth Russell for an analysis of how *Planeta hembra* depicts the city as a psychogeographical space for the construction of identity and Susan Marie Divine's dissertation for an analysis of how capitalism impedes socially transformative ideas.

characteristics that unite the narratives produced by female Spanish writers in the 1990s noting

"las narradoras de los noventa escriben textos de características posmodernas—inclinación a la

subjetividad, fragmentarismo, discursividad, búsqueda de una nueva identidad--, en los cuales se

indaga de manera sistemática una escapatoria al logocentrismo de la tradición patriarcal" (203).

[18] Although *Planeta hembra* was published in 2001 it too contains many of these characteristics

as it seeks to redraw hierarchies along one's sex. *Planeta hembra* is the story of how the political

"Party XX," constituted entirely of women, has taken total control of planet earth via censorship

and the manipulation of history. As Dillon, one of the female protagonists notes, Party XX

destroyed all books "para acabar con toda la Historia de otros tiempos, cuando los Hombres eran

los que mandaban" (42). The opposing all male party led by Graf is "Party XY." While parties

XX and XY are considered homosexual parties, the third party, "Comando H" is a heterosexual

party, which is seeking to overthrow Party XX. As Marta E. Altisent comments, the society

present in *Planeta hembra* reminds us of Aldous Huxley's *Brave New World* in that power and

success don't depend on weapons and aggression but rather on artificial intelligence and

eugenics (90).[19]

    While reproductive theories from classical times into the 19th century have typically

attributed to women a marginal role in the reproductive process, Bustelo's novel overtly

criticizes the past and portrays a future in which, thanks to advances in science and technology,

women no longer need men for reproductive purposes. As Juan Carlos Martín notes, Party XX

has employed artificial reproduction to defy evolutionary and biological processes that for

centuries placed women in a subordinate position to men. *Planeta hembra* is a dystopia in which

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[18] Another study depicting where Bustelo's novels fall among works produced by other female authors in the 90s is the piece written by Marina Villalba Álvarez.
[19] See Altisent's essay for a summary of how *Planeta hembra's* themes and utopian and dystopian techniques relate to Anglo-Saxon works and feminist writings.

the sex-role reversal serves as a form of defamiliarization, in the sense that in the novel's matriarchal society, science has been used to elevate females rather than males, to primary positions of power. However, unlike some sex-role reversal stories, which argue that society will be better when women are in power, *Planeta hembra* shows that women's total freedom and power, at the expense of the enslavement of men, leads to the destruction of civilization. The leaders of Party XX indoctrinate their members to accept their position in a utopian subculture within what is otherwise an oppressive and dystopian society. As a result, although initially women seem to enjoy more rights due to advances in biotechnology, the dystopian result demonstrates that Bustelo's work ultimately presents a darker vision of reproductive technology than Barceló's more optimistic novel.

The importance of artificial reproduction in sustaining the matriarchal lineage in *Planeta hembra* is evidenced by the persistent number of scientific explanations about the reproductive processes that Party XX has refined:

> Mediante ingeniería genética se realizan en el ADN las variaciones necesarias para obtener individuos con características diferentes. Se mantienen los rasgos biológicos de cada etnia, pero el número de individuos perteneciente a cada una de ellas está preestablecido … Los detalles de este proceso de selección genética se mantienen en absoluto secreto. Dado el alto coste que supone la ingeniería del ADN cabe pensar que las modificaciones que producen la individualización y mejora genética sólo se llevan a cabo en el caso de las Hembras reales. El resto de los seres humanos, Hembras No Reales y Hombres, serían una repetición *ad eternum* de personas que ya han existido. (128)

Given that people are replicas of beings that existed in the past, the cloning program has been tweaked to ensure that no two identical individuals will coexist at the same time. Additionally,

only the embryos destined to be future leaders have the privilege to grow inside the uterus of a surrogate mother. While all of the other embryos develop in machines, these surrogate mothers have passed numerous screenings and have pledged to surrender their children to Party XX so that the perfect lineage of female leaders will continue. In the novel, the leaders of Party XX have appropriated various scientific methods as well as scientific discourse in order to justify this new world order in which women are no longer subordinates. In order to stay in power, Party XX has perfected artificial reproduction by controlling cloning and gene therapy. The group has also been able to create a population in which over fifty percent of the individuals are females, thus ensuring electoral success every four years. Furthermore, as Graf learns in one of the forbidden books, *El siglo veinte: la muerte del Hombre*, "una vez obtenidos los embriones, se gestan en máquinas perfectas, que hacen las veces de útero. De esta forma, no es necesario el embarazo ni se precisan espermatozoides. En resumen, el Hombre no sólo ha dejado de ser imprescindible, sino que podría llegar a desaparecer. Bastaría con que las Hembras decidieran dejar de fabricarlo" (119). The male seed has become obsolete in this society as it is no longer needed in the reproductive process. Traditionally according to natural evolution "females often select their mates, who compete with one another by being bolder, having prettier plumage … In some species, males also do some of the selecting. These reproductive choices determine which sets of genes will be inherited by offspring. Like other animals, humans have developed elaborate behaviors to influence the selection of their mates" (Mehlman 1). The novel however, presents a society in which competition has been completely eliminated. While men were once indispensible to the creation of life, artificial reproduction is what has come to sustain society in *Planeta hembra*. While the reproductive methods of humans discussed in the novel such as genetic engineering, cloning and surrogacy may appear to be revolutionary, as Mehlman explains

in *Transhumanist Dreams and Utopian Nightmares: The Promise and Peril of Genetic Engineering*, "humans have gone much further than other animals in avoiding the randomness of reproduction" with the invention of mechanisms such as computer-assisted dating, genetic testing, in vitro-fertilization and artificial insemination (2-3). He also states that in the not-too-distant future germ line genetic manipulation, which is the process of intentionally modifying inherited genes themselves will be available, and that this will lead to the beginning of evolutionary engineering (4-5). Although *Planeta hembra* doesn't explicitly label the mechanism "germ line genetic manipulation", the process described is very similar in that DNA is reengineered to create stronger and better female leaders with each generation. The ultimate goal of transhumanists is to reengineer the human species to better target disease, prevent and control mental illness and enhance physical and mental performance (Mehlman 6). Although in theory, these changes are meant to be for the better of humankind, they can radically alter how society is structured. In the novel, these radical changes serve as a cautionary tale since ultimately they lead to the extinction of human life.

By depicting a society that relies heavily on science, that favors homosexual preferences, and that gives women total control, Bustelo's *Planeta hembra* offers an alternative to the traditional patriarchal society present in Spain for centuries and fiercely maintained by Franco's regime. As stated earlier, the Francoist regime sought to build a nation based on traditional gender roles, and Franco employed the power of the Catholic Church in an attempt to control the moral trajectory of the nation. As Gema Pérez-Sánchez notes, homosexuality posed a threat to the heterosexual family, which was the backbone of the regime and consequently had to be criminalized (24). Homosexuals were considered dangerous subjects who had to be punished and reeducated. Consequently, several laws were passed including La Ley de Peligrosidad y

Rehabitalización (the Law of Social Danger and Rehabilitation) in 1970 (29). After Franco's death, a new queer politics emerged which facilitated conversations about identities and sexualities that differed from the heterosexual norm. In 2005, when the PSOE was in power, after decades of fighting for the same rights granted to heterosexual couples, same-sex marriage became legalized.

In the new society that Party XX has created, several elements reverse the former patriarchal order. First and most importantly, homosexuality is considered the new norm and heterosexuality is seen as repulsive. For example, when Báez, who ultimately becomes the leader of Party XX, is trying to imagine what life is like in Comando H, she states, "por más que intentaba entenderlo, no lograba verle el atractivo al coito heterosexual. Era el ayer. Una rémora. Un lastre superado. Un acto más asociado a los simios que a los humanos" (13). In fact, every year, all members of Party XX must undergo a routine examination whereby any indications of heterosexuality are surgically corrected. This technological imposition of sexual preference shows how genetic engineering can be used to discriminate against an entire group of people, creating even greater disproportionate social and political power. Evolutionary engineering has the potential to create warring social classes. Báez's narrow point of view towards sexuality is attributed to the widespread censorship imposed by the leaders of Party XX. Several pages in the novel show lists of words and their synonyms that have been censored. For example:

FILE 06.zhe, LINE 00190 HOMOSEXUAL N0106B CORRUPTO

FILE 06.zhe, LINE 00191 HOMOSEXUAL N0107B DEGENERADO

FILE 06.zhe, LINE 00192 HOMOSEXUAL N0108B DESVIADO

FILE 06.zhe, LINE 00193 HOMOSEXUAL N0109B INVERTIDO

…………………………………………………………………

FILE 06.zhe, LINE 00441 HEMBRA K0103B CORTESANA

FILE 06.zhe, LINE 00442 HEMBRA K0104B CRIADA

FILE 06.zhe, LINE 00443 HEMBRA K0105B EVA (166-167)

Words commonly used to disparage homosexuality such as those listed above have been eradicated from the Spanish language. Likewise all vocabulary that connotes inferiority with respect to the female sex has also been abolished. Since women and lesbianism are esteemed in this matriarchal society, there is also a list of new equivalencies generated by Party XX to mislead the population into condemning heterosexuality:

FILE 06.zhe, LINE 00458 HETEROSEXUAL W0103B ANORMAL

FILE 06.zhe, LINE 00460 HETEROSEXUAL W0104B ASESINO

FILE 06.zhe, LINE 00461 HETEROSEXUAL W0105B DELINCUENTE

FILE 06.zhe, LINE 00463 HETEROSEXUAL W0106B DEMENTE (168)

Words such as "abnormal," "primitive," and "terrorist" have replaced the term "heterosexual." The manipulation of language and history is one technique Party XX uses effectively to divide society according to sex and gender, normalizing homosexuality while pinning factions against one another. For example, in an attempt to eradicate all trace of what Party XX perceives as a masculine-centric artistic and literary world, the leaders order the burning of books belonging to authors such as Cervantes, García Márquez, Goethe, and Faulkner, disguising the act as a recycling campaign. With no primary records showing an authentic version of history, the population blindly believes the information found online, a medium controlled entirely by Party XX.

Another subversion of patriarchal society is that Party XX has eliminated the traditional family unit, opting instead for unipersonal housing, and has abolished the concept of marriage as

a partnership. In this sense, the novel points to contemporary historical analyses of marriage. As Báez notes in the novel, the notion of egalitarian coupling tends to be a historical fallacy, since one partner generally has more power than the other (145). One partner would make more money than the other or one partner would be more in love than the other, and it would always be an unbalanced relationship with a winner and a loser. In the text, another major difference between matriarchal society and life under previous patriarchal societies is that maternity has been abolished and replaced with artificial reproduction because maternity was considered a form of slavery disguised as a miracle of life (159). Throughout the work, both egalitarian coupling and maternity become revealed as cultural constructs, systems that view the heterosexual family unit as the ideal to which one should aspire. As Jameson argues, the family plays an important role in utopias. The family may take on different meanings, but it will always be present in utopia. It may be present in the form of a nuclear family, a single parent household, a reproductive arrangement, or any number of alternatives (Jameson *Archaeologies* 206-207). Twentieth century utopias see the traditional family as a failure and seek to provide alternatives that are better than the present. Criticism of the family includes:

> (1.) It is foolish to think that men (and later women) will be satisfied with one or only one major sexual outlet. (2.) It is a terrible way to breed. (3.) It is a worse way to raise children. (4.) It binds women to specified and limiting roles. (5.) There is too much tension between the sensuality and passion of sexual relations and the reason and order needed in child-rearing. (6.) The patriarchal family is dystopian and must be replaced.
> (Tower Sargent 116)

In addition to granting greater homosexual freedom and relying on artificial reproduction, *Planeta hembra* seeks to address many of the issues regarding the traditional family unit by

implementing communal child rearing. As the novel states:

> En cualquier caso, los niños, tanto Hembras como Hombres, se educaban en escuelas de
> las que prácticamente no salían hasta la edad considerada adulta, los quince años. No era
> frecuente ver niños por las calles. Cuando uno de ellos se perdía o escapaba era de
> inmediato recogido por los equipos de seguridad y devuelto a su escuela correspondiente.
> En las últimas décadas del infame siglo veinte, los niños se volvieron extremadamente
> peligrosos debido a las malas influencias externas. El Partido XX había decidido cortar
> este asunto de raíz. La educación era un asunto de máxima prioridad política, y estaba
> férreamente controlado por las Hembras líderes. (39)

From Party XX's point of view, they have created an ideal utopian society where females have
finally liberated themselves from centuries of male domination and have normalized lesbian
identities. Unfortunately, by oppressing the male sex, Party XX has taken its power to the
extreme and simply reversed the oppression.

In *Planeta hembra*, Bustelo creates a parody of feminist fundamentalism and thus invites
the reader to question the ideals backing extreme feminist movements as well as the masculinist
movements they inadvertently replicate. At the end of the novel, war breaks out between all of
the parties when news spreads that Báez, who like all women has been programmed to only take
pleasure from other women, has had intercourse with the leader of Party XY. To give the reader
a detailed image of what is considered a heinous act by a member of Party XX, the encounter is
described in filmic terms: "en primer plano, la vagina depilada de Báez, abierta bajo el enorme
pene de Graf, a punto de penetrarla como una ávida bomba de petróleo" (211). This image is
transmitted to all corners of the earth and in minutes the heterosexual act leads to a war that
destroys the entire planet. Despite being in Party XX, which physiologically and psychologically

inculcates lesbianism from the moment of conception, Báez develops and acts on an attraction

for the opposite sex, showing that sex and gender are not identities that a society can simply

impose on its members, even with the most advanced scientific techniques; moreover, the

novel's scientific premises are often offset by ethical digressions, primarily on the subject of

eugenics.

In *Planeta hembra,* eugenics, which aims at improving the human population by

controlling desirable heritable characteristics, plays a significant role in Party XX's attempts to

erase history and create a society founded on science. Until Party XX came into power, society's

survival depended on heterosexual intercourse for procreation. However, new reproductive

technologies have made society more open to homosexual relations since alternative methods of

conceiving have become readily available. Even so, Party XX's manipulation of genes,

generation after generation, raises many concerns among the other factions, which is not

surprising given that, since its inception, eugenics has raised many ethical questions. As Juárez

González states, "aunque aparentemente digan luchar por la mejora de la raza, estas doctrinas

biologizantes [la eugenesia] llevan en su aplicación al control férreo del individuo y conducen a

la desvalorización del mismo, mediante el establecimiento y aceptación de escalas de valores que

permiten aprobar a unos y descalificar a otros" (119). Eugenics is just one example of how

scientific discourse has been appropriated by social and political movements to maintain power

and subdue those individuals it deems a threat.

CONCLUSION

In both novels, via mechanisms such as contraceptives, artificial reproduction, cloning, and

genetic engineering, Barceló and Bustelo deconstruct the human body at the cellular level to

show how science plays a role in the creation of social arrangements, how new technologies have questioned traditional definitions of "family," and how laws and reproductive models have evolved to give women greater freedom and choice. Today, methods of reproduction without heterosexual intercourse include artificial insemination by donor (AID), in vitro fertilization (IVF), and surrogate embryo transfer (SET). New reproductive technologies have forced society to re-examine social arrangements and have led to the development of new laws on abortion, maternal-fetal relations, and surrogacy (to name a few). These novel arrangements have in turn raised a new series of controversies. For example, "some critics have objected to commercial surrogacy on the ground that it improperly treats children and women's reproductive capacities as commodities" while others argue that surrogacy empowers women (Anderson 233). In chapter four I will explore in greater detail the bioethical implications of the biotechnological techniques and processes discussed in this chapter. Specifically I will focus on how a feminist approach to ethics differs from more traditional moral approaches to ethics. In fact, some feminists have called for a ban on reproductive innovations.

In addition to some feminist groups, the Catholic Church has also raised many questions and is likely to play a major role in how slowly or quickly progress is made in biotechnological research. In 2007 in a speech to the participants of the Pontifical Academy for Life, Pope Benedict XVI stated that attacks on the right to life throughout the world had assumed new forms:

> The pressures to legalize abortion are increasing in Latin American countries and in developing countries, also with recourse to the liberalization of new forms of chemical abortion under the pretext of safeguarding reproductive health: policies for demographic

control are on the rise, notwithstanding that they are already recognized as dangerous
also on the economic and social plane.

At the same time, the interest in more refined biotechnological research is growing in
the more developed countries in order to establish subtle and extensive eugenic methods,
even to obsessive research for the "perfect child", with the spread of artificial procreation
and various forms of diagnosis tending to ensure good selection.

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All of this comes about while, on another front, efforts are multiplying to legalize
cohabitation as an alternative to matrimony and closed to natural procreation.

("Address of his holiness…")

In his speech, Pope Benedict touches on many of the scientific subjects that feminist utopian

projects are concerned with, including the legalization of abortion, artificial procreation, and

same-sex marriage. Indeed, the fact that both contemporary feminist authors and global church

leaders are all concerned by these issues demonstrates the ongoing social dilemmas facing many

countries, not just Spain. While the novels studied here highlight the power of science, they also

highlight the fact that science alone cannot bring about change; society's attitudes towards sex

and gender, as well as institutional structures, must also change, and literature can play an

important role in that process.

The SF novels analyzed in this chapter not only provide perspectives on the implications

of biotechnology, but also insights into the legal and ethical dilemmas that often accompany

scientific advancement. While it is naïve to think that SF can or should serve as a moral guide on

the various applications of science, SF does offer readers greater insight and engagement with

other points of view and possible alternatives. When presented with dynamic characters and

future-oriented settings, the reader can reflect on possible consequences of biotechnological advancement in a way that scientists cannot, because it allows for the presentation of issues that cannot be analyzed or quantified in a laboratory, but that nonetheless have major impact on society. Spanish SF will continue to play an important role in that ongoing global discussion, as societies grapple with their own patriarchal and hetero-normative pasts and look towards more inclusive and empowering futures. Novelists like Barceló and Bustelo are a reminder that women writers in Spain are on the vanguard of these important global conversations.

Chapter 2

Science Fiction Meets Melodrama: Androids and Robots in Traditional Female Roles

While robots were once primarily only seen in industrial settings, advances in robotics research has led to the creation of humanoid robots that have entered many areas of the domestic and public sphere. For example, researchers have examined how robots can play a role in education as social partners and peer tutors for children, and in health care as assistants in nursing homes.[20] From space to hospitals to the military, robots are playing an increasing role in society. As Kim et al. conclude in their study on human-human and human-humanoid robot interaction "the insertion and growth of robots in social arena will pose a host of academic and ethical questions regarding status, agency, emotional, and intellectual abilities of intelligent robots and humans of different social groups" (324). As objects of scientific study and technological innovation, and as figures in SF that raise ethical and moral questions, robots are at the intersection of science and the humanities.[21] As cultural figures that are both real and imagined, robots and artificial intelligence are becoming part of our social reality and transforming everyday life.

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[20] See "Interactive Robots as Social Partners and Peer Tutors for Children: A Field Trial" by Takayuki et al. and "Towards robotic assistants in nursing homes: Challenges and results" by Pineau for more information.

[21] In "Studying Robots, between Science and the Humanities" Despina Kakoudaki proposes an integrated interdisciplinary methodology to better understand the figure of the robot arguing that it is often the imaginary qualities of a robot that inspire actual reasearch. In *An Anthropology of Robots and AI: Annihilation, Anxiety and Machines*, Kathleen Richardson examines the role of fiction in co-constructing the practices of robotic scientists and how there has been a shift away from the "worker" robot of the 1920s to the "social" robot of the 2000s.

SF is key to our understanding of human-robot relations because it "often offers a more serious exploration of contemporary conditions of technological possibility and future trends than many popular technocultural works presented as nonfiction" (Kakoudaki "Affect and machines in the media" 112). Via SF one can explore how humans interact with technology and what we want our relationship with AI to be. Along this vein, this chapter will examine how SF portrays the relationships that form between humans and robots, and more specifically the tensions that arise when machines exist alongside humans in a gendered environment. As is discussed in the podcast "Could you kill a robot?" from *NPR's Hidden Brain*, not only do humans have a tendency to anthropomorphize robots, but to project our biases about sex and gender as well. In the podcast Shankar Vendatam and MIT's Kate Darling point out that many of the "intelligent assistants" like Apple's Siri and Google's Alexa have been given women's names and female identities while the genius machines have been given men's names like HAL or IBM's Watson. With these prejudices in mind, we can take a look at how robots are gendered in SF and how they either conform to or alter societal structure. In other words, how is AI leading us to rethink sex and gender as it becomes a part of the familial and societal dynamic? Through point of view shots in Kike Maíllo's *Eva* (2011) and Gabe Ibáñez's *Autómata* (2014), we see the world through the lenses of mechanical beings as they try to make sense of society, which in turn allows us to better understand the complexity of human interactions. Specifically, this chapter will explore how robots and androids articulate the traditional female roles of mother and daughter. Ultimately, these works portray artificial female bodies as sites of emancipation from the established patterns of human social interaction in an attempt to create progressive familial and societal frameworks, while simultaneously offering a plea for the empathic and ethical treatment of artificial people. Additionally, this chapter will

explore the characteristics that traditionally distinguish humans from machines and how boundaries are blurred when we go beyond biological definitions of human and humanity. Fictional human-robot relationships such as the ones presented in the films analyzed in this chapter can inform our understanding of what it means to be human. In order to better appreciate the insight into AI that Maíllo's and Ibáñez's films provide, I want to first outline both the challenges Spanish filmmakers have faced in making this type of genre film and the mechanisms that have helped them overcome these challenges.

ARTIFICIAL INTELLIGENCE: HOLLYWOOD'S SUCCESS AND SPAIN'S CHALLENGES

AI has become prevalent in popular culture around the world in large part due to Hollywood. Hollywood has a long history of producing films on the subject of artificial intelligent beings that challenge our definition of sentience and consciousness and what it means to be human, including Robert Wise's *The Day the Earth Stood Still* (1951), Stanley Kubrick's *2001: A Space Odyssey* (1968), Ridley Scott's *Blade Runner* (1982), James Cameron's *The Terminator* (1984), Paul Verhoeven's *Robocop* (1987), Steven Spielberg's *A.I. Artificial Intelligence* (2001), Alex Proyas' *I, Robot* (2004), Andrew Stanton's *Wall-E* (2008), Spike Jonze's *Her* (2013), and Alex Garland's *Ex-Machina* (2015). These films portray complex relationships between humans and cyborgs, clones, androids, robots and terminators as these mechanical beings appear to display feelings and self-awareness just like humans. Many of these films were huge box office successes that were distributed worldwide and over time have become iconic SF films. As a result, Spanish filmmakers have had to overcome Hollywood's[22] international shadow as well as

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[22]Ángel Sala states that between 1961-1967, Spain saw the creation of a national fantastic cinema. It was also during this time that "la olvidada ciencia ficción asomó con timidez en el panorama del cine español, quizá por influencia de la ola de títulos propia de los años cincuenta

the many economic, political and cultural challenges back home. In an article by Anne Sewell, Ángel Sala, the current director of the Sitges Film Festival,[23] claims that the lack of SF films is in fact "a cultural problem with Mediterranean countries. We are better at horror and gothic cinema, and I think that is because of our religious heritage. And as such, apart from a few honorable exceptions due to talent rather than budgets, we either do SF films that imitate what you see from Hollywood, but end up looking cheap, or we do it by simplifying the story (n.p.)". The next few paragraphs will outline the challenges Spanish filmmakers have faced in producing this type of genre film. Once I have outlined the problems, I will explain how Spanish filmmakers have overcome these challenges via co-productions, genre hybridity and film festivals, and how directors have worked hard to create a Spanish SF cinema that differentiates itself from that of Hollywood.

As stated in the first chapter, if one examines Spain's artistic tradition, what stands out is that it has repeatedly favored realist manifestations, particularly during the postwar years of the

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en Hollywood, algo que sin duda influyó en *El Sonido de la muerte* by Antonio Nieves Conde" (54-55). The fantastic genres were then revolutionized by the so called Escuela de Barcelona "ya que muchos autores utilizaron estilemas del imaginario (sobre todo de la ciencia ficción) para expresar su ruptura con el cine producido en la época. Así ya una película considerada como un punto de partida para el movimiento como…*Fata Morgana* de Vicente Aranda exploraba el desconocido territorio de la fantaciencia y lo hacía no desde presupuestos propios del cine de serie B de épocas recientes de Hollywood, sino desde presupuestos más culteranos y europeos" (67).

[23] The Sitges Film Festival is a Spanish film festival specializing in fantasy and horror film, number one in the world in these genres. Established in 1968, the festival is held every fall in Sitges, Catalonia. In 2001 Ángel Sala became the festival's current director. The main awards are given to feature length films of all nationalities and previously unreleased in Spain, by an international jury, in the following categories: Best Feature Length Film, Best Director, Best Actor, Best Actress, and Best Screen Play. The festival became even more prestigious when the Academy of Motion Picture Arts and Sciences in Hollywood declared that those shorts winning the awards for "Best Short Film" in the Official Fantàstic Selection and "Best Short Film" in the Anima't section will automatically be taken into consideration for the Oscar Awards.

Spanish Civil War when the Church and State were nearly inseparable. Not only did Francisco Franco's regime support social realist cinema, but it also heavily censored the film industry, placing restrictions on the types of films and genres that were allowed to circulate. When Francisco Franco came into power, his regime took an active role in the film industry with the goal of developing a Spanish national cinema. Once the Spanish film industry became property of the State, it was used to disseminate fascist propaganda. In 1944 the Spanish Department of Popular Education created the Declaración de Película de Interés Nacional (National Interest Prize) causing much controversy. The benefits of winning this prize included wide publicity and distribution, and significant return on the cost of production (Triana-Toribio 55). However, in order to be awarded the prize, the film had to be produced in Spain and the majority of the cast and crew had to be from Spain. The controversial aspect of the prize was that the films had to highlight the regime's social, political and racial values. As Triana-Toribio notes:

> from 1937 to 1977, cinema censorship was a key mechanism for successive hegemonic groups of the regime to ensure that the construction of a national identity through cinema reflected their respective ideals of the nation…a nation that was una, grande y libre (one, great and free) and Roman Catholic, a vision that tolerated neither plurality of ideas nor any negative depiction of the victors. (95)

Though realist film became the best form of national propaganda, it was also used by the left wing to portray the harsh social realities such as unemployment. Consequently, in an effort to silence dissident voices, censors were ordered to prevent both the articulation and dissemination of any film that opposed the regime's ideology or tried to question the status quo. As Ángel Sala states:

el cine fantástico español, tiene unas características claras, peculiares eso

sí…consecuencia de ciertos procesos históricos…como es la posición dominante de la

Iglesia Católica durante siglos que ha creado una cultura que ha vivido de espaldas a lo

fantástico y sobrenatural, tendencia que influyó históricamente a la literatura del país y

que se ha trasladado a la evolución del cine de género. (10)

During the dictatorship supernatural beings except those of the Catholic faith were not allowed

representation in literature or cinema. However, once censorship laws were lifted after Franco's

death, the Spanish film market became flooded with foreign films that had been previously

censored as well as big budget Hollywood films (Triana-Toribio 108-109). One big budget genre

was SF. As a result of the high production values of Hollywood, Spanish audiences became

conditioned to expect impressive special effects like those in *Star Wars: Episode IV-A New Hope*

released in Spain in November 1977, *Star Wars: Episode V-The Empire Strikes Back* released in

Spain in October 1980 and *E.T. the Extra-Terrestrial* released in Spain in December 1982.

Unable to compete with Hollywood's international block busters combined with Spain's

audiences' general lack of interest in SF compared to audiences in the United States and other

European nations, Spanish directors hesitated to venture into a genre that was not likely to make

a profit.

During the political transition from a dictatorship to a democracy, film was concerned

with recuperating the historical past and the popular memory that had been suppressed by the

dictatorship. As Jordan and Morgan-Tamosunas state, "film was directly involved in the process

of nation building and the recuperation of a democratic, and in other cases, a

nationalist/separatist tradition. In the mid 1980's the focus became micro-stories and the impact

of historical events on the emotional and psychological states of the characters" (11-12). The last

decade of the 20th century however, gave rise to a new wave of filmmakers who were too young to have been marked by the Civil War, the dictatorship or the transition to democracy. The generation of the 1990s was marked by a youth culture no longer concerned with Spain's past, but rather with an understanding of national and global space, and the growing importance of transnational and postnational cinematic trends. As Shelagh Rowan-Legg notes in *The Spanish Fantastic: Contemporary Filmmaking in Horror, Fantasy and SciFi*, in a move away from realist cinema, since the mid-1990s horror, SF, thriller and fantasy have been recycled, reshaped and renewed by a new generation of filmmakers, and become part of postnational cinema (3). In the 21st century there has been a shift towards analyzing Spanish film through a transnationalist lens or via genre theory rather than through a nationalist or auteurist perspective.[24] As Samuel Amago states, "although Spain's established auteurs continue to produce a healthy number of art cinema and social issues features, a new generation of filmmakers has improved popular perceptions of Spanish cinema and has made important inroads into international markets by making quality genre films" (57). In the case of SF, mechanisms such as genre hybridity, film festivals, and co-productions have been instrumental in elevating the status and circulation of this genre. Below, I will outline how each of these mechanisms have helped Spanish directors produce SF films at the end of the 20th century and beginning of the 21st century, and how directors have tried to create a unique style of Spanish SF.

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[24] For these recent trends see *Contemporary Spanish Cinema and Genre* by Jay Beck and Rodríguez Ortega, *Spanish Horror Film* by Antonio Lazaro-Reboll 2012, Carlos Aguilar's *Cine fantástico y de terror español 1984-2004,* Angel Sala's *Profanando el sueño de los muertos: la historia jamás contada del cine fantástico español*, and Diego López and David Pizarro's *Silencios de pánico: historia del cine fantástico y de terror español 1897-2010.*

CO-PRODUCTIONS, GENRE HYBRIDITY, AND FILM FESTIVALS

SF film in Spain has survived and begun to flourish through co-productions with nations that have a more stable SF tradition,[25] and through the combining or melding of SF elements with more recognizable or popular genres. The benefits of a co-production include pooling of financial resources, access to foreign government's incentives and subsidies, access to partner's market and third country markets, access to foreign locations, and learning from partners with greater experience (Hoskins et al. 104). The disadvantages of co-productions include coordinating costs and loss of control and cultural specificity (105). Ultimately, the advantages outweigh the disadvantages and co-productions have been used as a funding model by European countries because in many cases it is the only way for these countries to accrue enough funds to produce products that can compete against those made by the U.S. (Hoskins et al. 112). As Alejandro Pardo states, "international co-productions in our continent [Europe] have been often promoted as an ideal formula to achieve the difficult balance between 'national identity' and 'crossing-border' culture. Nevertheless, at least in the Spanish case, the more frequent motivation to set up a co-production project has been economic or financial rather than multicultural" (110). As such, Alejandro Pardo proposes a new typology of international co-productions that better fits the Spanish case: (inter)national co-productions, foreign financial co-productions, multi-cultural co-productions, and internationally-oriented co-productions. To best

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[25] As Ángel Sala notes "uno de los procedimientos que se impusieron ya desde este periodo, [la formación de un cine fantástico nacional: 1961-967] y que será habitual en épocas posteriores, no solo en el cine fantástico sino en otros géneros…es el régimen de la coproducción" (60).

thrive, Spanish SF cinema has to continue to establish financial transnational partnerships and appeal to a variety of cultural markets. The fantastic genres including horror, SF, fantasy and thriller films are often mass produced and viewed as inferior to high culture, particularly in Spain where SF is seen as an imported genre, "but imported culture can also be indigenized, given new meaning and significance, recycled and adapted for use in a new culture. In Spain, the fantastic genres are reinterpreted and recycled for both local and global consumption" (Rowan-Legg 22). Alejandro Amenábar is a perfect example of a Spanish director who has achieved both domestic and international success while taking advantage of co-production.

In 1996 Amenábar produced the thriller, *Tesis*, which won seven Goya awards including Best New Director and Best New Film. The Goya Awards, which were established in 1987, are Spain's main national film awards. His second film, *Abre los ojos/Open Your Eyes* (1997)*, co-produced by the Spanish companies Sogetel and Las producciones de Escorpión, the Italian company Lucky Red, and the French company Les Films Alain Sarde, was an even greater success. Ángel Sala describes the film as "un extraordinario éxito de taquilla que, más allá de la importancia que ello tuvo para la industria y el género fantástico, implicaba romper el muro que había supuesto de cara a la taquilla (e incluso el prestigio crítico) de las películas de ciencia ficción producidas en España" (246). Grossing €6.442.471,89, it became one of the biggest domestic box-office hits at the time. In 2001 V*anilla Sky* became the American remake of *Abre los ojos*, demonstrating that Amenábar had created a story whose themes appealed to audiences beyond Spain.[26] *Vanilla Sky* went into production when Tom Cruise bought the rights to

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[26] *Vanilla Sky* which was directed by Cameron Crowe and included Tom Cruise as the lead male protagonist, Cameron Diaz, and Penelope Cruz in a reprisal of her original role, helped boost Amenábar's name in the U.S. Over time Amenábar has become one of the most successful and internationally oriented Spanish filmmakers (Maule 113). Some critics even claim that Amenábar's style appears more American than European. Couzens in his review of *Abre los ojos*

Amenábar's film after seeing its screening at the Sundance film festival. Interested in

Amenábar's work, Tom Cruise convinced Amenábar to work with Cruise/Wagner productions

for his third film *Los otros/The Others*(2001). As Rodríguez Ortega states, *Los otros,* which had

Tom Cruise as executive producer and Nicole Kidman as the lead protagonist "was a massive

worldwide commercial and critical success" (50). By mixing local traditions with Hollywood

models and by fusing art and commerce, Spanish film makers like Amenábar have been able to

attract younger and wider audiences, occupying a position both in the Spanish and U.S. markets

(Smith 93).

Although *Abre los ojos* has remained one of Spain's most successful SF films, there are

several films from the first two decades of the 21st century that merit mentioning for their

ingenious blend of genres and resourceful use of limited financial resources thanks to

coproduction. In 2011 Pedro Almodóvar's *La piel que habito/The Skin I Live In*, co-produced by

Blue Haze Entertainment, Canal+ España, and El Deseo was released. With an estimated budget

of €10,000,000 this psychological thriller with a touch of melodrama premiered at the Cannes

Film Festival in 2011 and then at the New York Film Festival. It won Best Film Not in the

English Language at the 65th British Academy Film Awards and was nominated for the Golden

Globe Award for Best Foreign Language Film and 16 Goya Awards. Of the 16 nominations, it

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argues that "Amenábar's visual language is very American rather than European, with short-held shots and cutting telling the story. The only real difference between this and a Hollywood film (budget level apart, though it certainly doesn't look impoverished) is the nationality of the cast and the fact that the dialogue is in Spanish." Although Amenábar is associated with having an international style, often paying homage to Hitchcock's works, he has not completely removed the "Spanishness" in his works and remains one of Spain's top auteurs. Knollmueller argues that *Abre los ojos* falls within the Spanish literary and dramatic tradition of confounding dreams and reality going back to Cervantes' *Don Quijote* and Pedro Calderón de la Barca's *La vida es sueño* to Luis Buñuel and Salvador Dalí's layering of dreams. Similarly Perri states that Amenábar "has garnered much attention for his deft combination of multiple film genres (horror, psychological thriller, SF), intertextual references to Spanish and international films, as well as his evident technical talent" (91).

won the Goya Award for Best Lead Actress (Elena Anaya) and Best New Actor (Jan Cornet). It

also won the Saturn Award presented by the Academy of Science Fiction, Fantasy, and Horror

Films in the category of Best International Film. Another co-production though much less

successful than *Abre los ojos* and *La piel que habito*, is *Los últimos días/The Last Days* (2013)

by Alex and David Pastor, which centers on post-apocalyptic Barcelona. It was co-produced by

Morena Films, Antena 3 Films, Rebelion Terrestre and Les films du lendemain, based in France.

Made with a budget of €5,000,000, it grossed €2,123,599 in Spain. In 2014, *Autómata*, a

Spanish-Bulgarian SF film that deals with the coexistence of humans and machines was released.

Produced by Green Moon España and Nu Boyana Viburno of Bulgaria, it grossed €307.429,67.

As Doris Baldruschat notes, "many co-productions feature globally recognized stars, which add

to a co-production's appeal for broadcasters, distributors and audiences" (13). In part in an effort

to reach a wider audience, both *La piel que habito* and *Autómata* star Antonio Banderas who has

been in numerous high profile Hollywood films. The *Nerdist* reports that "the film [*Autómata*]

would be meaningless if not for one of the strongest performances Antonio Banderas has ever

given...he was able to shine, specifically because he was performing in a role not often given to

latino actors" (n.p.). Ultimately, given the many benefits of co-production it will most likely

continue to be a much utilized means of making SF film in Spain in the years to come.

      While co-productions have aided SF film projects in getting off the ground, the blending

of SF with other genres helps pique the attention of audiences that would maybe otherwise not

consider watching a hard SF film. Rowan-Legg argues that "the mixing of genres was and is a

main feature of Spanish fantastic [SF, horror, fantasy] film" (20). One of the most widely used

genres in Spanish fantastic films is melodrama.[27] Melodrama is often used because it's a genre

that exaggerates good and evil in its quest for moral and emotional truths. Melodramas are

vehicles for what Peter Brooks describes as "the "moral occult" (5). It is the "domain of

operative spiritual values which is both indicated within and masked by the surface of reality …

It bears comparison to unconscious mind, for it is a sphere of being where our most basic desires

and interdictions lie, a realm which in quotidian existence may appear closed off from us, but

which we must accede to since it is the realm of meaning and value" (5). One of the primary

purposes of melodrama is to "locate and articulate the moral occult" (5). The exaggerations in

melodrama place characters at the intersection of ethical forces. Thus when melodrama is

combined with SF a binary can be clearly established between humanity, the emblem of good,

and the robot, a symbol of evil. This binary can then be solidified or questioned as the storyline

develops. Melodrama, which centers on the emotions and human relations, also serves as a

complement to the harsher, colder and alienating aspects of technology present in SF. *Abre los

ojos'* record ticket sales were in part due to how the film fashioned melodrama with SF. Another

film that combines SF with melodrama and which will be analyzed in greater detail later in the

chapter, is *Eva* by Kike Maíllo. Produced by Escándalo Films S.L., with a budget of only

€7,000,000, it grossed €904.675,54 and was the winner of 15 awards including three Goyas for

best new director, best special effects and best supporting actor (Lluís Homar). Nominated for an

additional 28 awards, *Eva* received overwhelmingly positive reviews. Miguel Juan Payán from

Revista acción who compares the film to classics such as *Frankenstein, Metrópolis, and Blade*

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[27] Historically, melodramas refer to 19th century stage productions in which the action was accompanied by music and orchestral arrangements that intensified emotional climaxes. By the mid 19th century, melodrama was more closely associated with "plots featuring spectacular action, improbable twists of fate, intense expressions of emotion, last minute rescues, and vivid conflicts between bad and virtuous characters" (Sadlier 2).

Runner boldly concludes that the phrase, "¿Qué ves cuando cierras los ojos? bien merece pasar a ser una clave del cine de ciencia ficción en esta producción que, para ser más claros, me ha parecido mucho más estimulante y completa que *Inteligencia Artificial* de Steven Spielberg" (n.p.). Felperin from *Variety* describes the film as thought provoking and one "that has less to do with environmental meltdown than with what makes us human" and Genzlinger from the *New York Times* lauds the film for making the audience care not only about the human characters but the robotic ones as well. In an interview with *eCartelera*, Maíllo stated that he prides himself on making a film that differentiates itself from that of Hollywood by developing a story that focuses on the human relations with technology, rather than focusing on a high packed action and special effects driven storyline that has come to define Hollywood SF. Consequently, *Eva* has two central plot lines. The first story line, focuses on the creation of a robot that looks and behaves like a human child and the relationship that develops between Alex Garel (Daniel Brühl), the engineer, and Eva (Claudia Vega) who serves as the model for the robot. The second story line, focuses on a love triangle between Lana Levy (Marta Etura), Alex Garel, and David Garel (Alberto Ammann). Lana is Alex's former lover and David's current wife. A traditional Hollywood film on AI would have focused on the robots and relied heavily on the action to move along the story, but Maíllo wanted to go beyond current SF trends by creating a more reflexive and philosophical type of SF. The goal is not to imitate what Hollywood already does so well, but to offer audiences a different style of SF. Maíllo's film is a hybrid genre of SF with greater emphasis on AI's emotional intelligence and the bonds that can form between humans and robots. The use of melodrama is a defining feature of Maíllo's film.

In addition to the blending of genres, the increase in Spanish SF production is also attributed to the rise of fantastic film festivals such as the Semana de Cine Fantástico y de Terror

de San Sebastián and the previously mentioned Sitges Film Festival.[28] *Eva* was first screened at

the 68th annual Venice Film Festival on September 7th 2011, and opened the Sitges Film

Festival on October 6th before being released in theaters in Spain on October 28th 2011. In

March 2015 it had a limited theatrical release in the United States by the Weinstein Company.

Then in 2017 *Eva* was released on Netflix where it was categorized not primarily as a SF film

but under the genres of Dramas, Romantic Dramas and International Dramas. This classification

speaks to the importance of marketing films with the target audience in mind. As Altman

explains, genre is a concept that has multiple meanings: "genre as blueprint, as a formula that

precedes, programmes and patterns industry production; genre as structure, as the formal

framework on which individual films are founded; genre as label, as the name of a category

central to the decisions and communications of distributors and exhibitors; genre as contract, as

the viewing position required by each genre film of its audience" (14). While films are classified

within genres because they contain certain themes, icons and archetypes, the spectator's

expectations also play a role in determining genre. In other words, one's culture plays a

significant role in what an audience will expect from a specific genre. Anticipating that

audiences in the United States who are accustomed to big budget special effects SF films would

hardly consider *Eva* as such, Netflix categorized the film as primarily a drama. As of July 7,

2017 there were 107 member reviews for the film on Netflix and in many cases the explanations

given by those who enjoyed the film were the very same justifications given by those who hated

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[28] Established in 1989, the Semana de Cine Fantástico y de Terror de San Sebastián, held every fall celebrates the horror and fantastic genres. Awards are given to both international and national films. This is a genre specific festival and should not be confused with the San Sebastián International Film Festival founded in 1953. In 1957 the San Sebastián International Film Festival was awarded A status and today is one of the world's premier film festivals. To foster co-productions between Europe and Latin American, in 2012 the Europe-Latin America Co-Production Forum Awards became part of the awards given at the festival.

the film: it was slow paced and focused more on character development and drama than the SF

elements they were used to seeing. In response to the criticisms of the film, one viewer astutely

pointed out that it was a foreign film.

As has been exemplified with the marketting of *Eva*, distribution of foreign films can be a

very complex process and as a result "festivals are now seen as an alternate method of

distribution... while larger more prominent festivals such as Cannes Film Festival or TIFF

require premiere status, most genre film festivals do not...this allows fantastic films to travel a

festival circuit for several months, with increasing publicity if they are well received by critics

and/or fans" (Rowan-Legg 15). Nacho Vigalondo is arguably the most visible filmmaker of the

fantastic film festival (Rowan-Legg 153). Dawson in *Filmmaker* describes Vigalondo as "part of

an exciting new generation of Spanish filmmakers who are reinvigorating genre filmmaking with

their creativity and invention." Vigalondo's films include L*os cronocrímenes*/*Timecrimes*

(2007), Extraterrestre/*Extraterrestrial* (2011), *Open Windows* (2014) and *Colossal* (2016). *Los*

cronocrímens co-produced by Karbo Vantas Entertainment, Fine Productions, and Zip Films is a

time travel SF horror film, made on a shoestring budget of about 2.6 million that premiered at

Fantastic Fest in Austin Texas in 2007, winning Fantastic Fest's Next Wave Award which is

awarded to up and coming new filmmakers. Jeannette Catsoulis of the *New York Times* described

Los cronocrímenes as making "sci-fi lemonade out of low budget lemons" because it tackles

time travel with "zero special effects, one location, and only four speaking roles." Likewise, Hart

in *Wired* praises the film saying that "the Spanish filmmaker crafted a time-travel thriller that

packs more punch than most $100 million sci-fi epics" (n.p.). In his interview with *Wired*,

Vigalondo commented that when you're not making a big budget film, the script and the story

become crucial to the success of the film. Spanish directors like Vigalondo and Maíllo recognize

that in order to produce SF given the limited resources at their disposal, one needs to start with a story that will captivate audiences even when the special effects are minimal. Special effects can enhance a story line, but can never be a substitute for quality writing. Vigalondo's second feature film, *Extraterrestre*, co-produced by Sayaka Producciones Audiovisuales, Apaches Entertainment and Antena 3 Films is a SF romantic comedy that was shown at the Toronto International Film Festival, the International Film Festival of San Sebastián, the Sitges Film Festival, and the Fantastic Fest in Austin, Texas. *Open Windows*, a crime thriller co-produced by Apaches Entertainment, Atresmedia Cine, and La Panda was Vigalondo's English language debut. Vigalondo's fourth film *Colossal*, a sci-fi/comedy/drama co-produced by Toy Fight Productions, Brightlight Pictures, and Sayaka Producciones, and starring Anne Hathaway and Jason Sudeikis premiered at the Toronto International Film Festival in 2016 and was later screened at the Sundance Film Festival. Vigalondo's films have all been low budget productions that have come to fruition in large part to the blending of SF with other genres, co-production, and film festivals.

As is evidenced by the SF films mentioned in the previous pages, filmmakers are dealing with the economic challenges by venturing into co-productions and entering their work into film festivals, and also working hard in the artistic arena by embracing genre hybridity and attempting to make a style that can differentiate itself from that of Hollywood. As Christina Buckley has stated, the Spanish film industry "has internalized the notion that in order to compete with Hollywood it is not enough to join it. It must find innovative and reflexive ways to co-opt" and more importantly "while markets, revenue, and competition with the Hollywood conglomerate have always mattered... the primary force driving the new generation of Spanish directors is no longer a political dictatorship, but rather a financial fascism which, in spite of itself, has helped

to engender Spanish cinema's renewed creativity" (21). Filmmakers such as Amenábar, Ibáñez, Maíllo and Vigalondo rather than imitate Hollywood's style of SF, which emphasizes an action-pack narrative and hi-tech special effects, focus instead on providing philosophical depth and a moral discourse that questions the nature of existence. Their goal is to make films in which SF serves as the framework, but where what really matters is the story line, the characters' emotions, and the decisions those characters make when confronted with technological progress that may be beyond human knowledge and understanding.

While the films discussed above illustrate the wide thematic range of Spanish SF from virtual reality, time travel, and alien encounters, to AI, it is the latter, that will be the focus of the rest of this chapter. The spectrum of artificial beings and the posthuman include automatons, robots, androids, cyborgs and bionic humans. Scientists and engineers classify the evolution of robots according to generations. First generation robots are known as industrial robots because they are widespread in manufacturing processes and can perform repetitive tasks. Second generation robots are equipped with sensors that can take in the surroundings and then take appropriate actions. Third generation robots are those with AI, which enables them to perform tasks without human interference. Every day technology becomes more complex, and while robots were once only mechanical arms, today they can look and act like humans. A being with robot-like internal mechanics but that behaves and in many cases physically looks like a human is known as an android. While androids are still considered robots, cyborgs and bionic humans are different in that they are a combination of machine and organic parts. Donna Haraway describes the cyborg as "a hybrid of machine and organism" (291) that destabilizes gender boundaries and offers a world of new "lived and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities" ("A

Cyborg" 295). The increase in scientific and technological discourse in the humanities and social

sciences in the 1980s and 1990s is in large part due to Donna Haraway's conceptualization of the

cyborg and Katherine Hayles' concept of the Posthuman as discussed in *How We Became*

Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics. The rest of this chapter

will focus solely on AI in the form of androids and robots. In the pages to follow I will examine

how SF films portray the relationships that form between humans and robots, as well as the

tensions that arise when machines exist alongside humans in a gendered environment. How do

robots conform to or alter societal structure? How are artificial people used to reproduce or

reshape the traditional female roles of mother and daughter. The point of view shots in Kike

Maíllo's *Eva* and Gabe Ibañez's *Autómata* show us the world through the lenses of mechanicals

beings as they try to make sense of society, which in turn allows us to better understand the

complexity of human interactions. Ultimately, these films portray artificial female bodies as sites

of emancipation from the established patterns of human social interaction in an attempt to create

progressive familial and societal frameworks, while simultaneously offering a plea for empathy

and ethical treatment of artificial people.

EVA: A REINCARNATION OF THE FILLE FATALE

As the first Spanish robot film, Kike Maíllo's *Eva* is a significant step in the evolution of Spanish

SF film. *Eva* is a retrofuturistic SF film as can be seen through the 1970s aesthetic present

throughout the film in the clothes, cars, vintage laboratories, old machineries, the 3D crystal

interface used to design the robot child's personality, and the retro-styled robots. The film's

retrofuturism is a result of Maíllo's nostalgia for the robots he saw on television while growing

up, such as those in *Dr Who*. as well as "Maíllo's desire to show that Spain can enter into dialog

with Hollywood science-fiction to present a new Spanish 'genre' film" (Wright 11).

Additionally, the film's retrofuturism gives spectators the impression that the story takes place in

a very near future. Focused on love, death, and relationships *Eva* is a film that appeals to a wide

audience and is part of Escándalo Films' goal to use the talent of new filmmakers to create

projects that can succeed in the world market. In addition to the universal themes, the film's local

and transnational talent also appeals to a wider market. The male protagonist Daniel Brühl is a

Spanish-German actor who has starred in films such as *Good Bye Lennin!* (2003), *Inglourious*

Basterds (2009), and *Captain America: Civil War* (2016). Lluís Homar who plays an android

butler and offers comedic relief in the film, is a Spanish actor recognized internationally for his

roles in Pedro Almodóvar's *La mala educación/Bad Education* (2004) and Los abrazos/*Broken*

Embraces (2009). In contrast to the apocalyptic visions of the future present in many SF films,

Eva shows a world in which humans and machines coexist. The film takes place in a small

snowy town located in the mountains. The snow appeals to Spanish audiences' desire to see the

exotic, and underscores the coldness and harshness of the robots. These exterior scenes also

serve as a great contrast to the warm interior scenes that give us an intimate look at Eva's family

life.

The film begins with the return of Alex to his hometown to finish a project he started 10

years ago, the SI-9 robot. Alex is tasked with creating the robot's only missing piece: its

emotional control software. In order to do so, Alex must find a human child on which to model

the android's emotional intelligence. A tracking shot shows Alex in a vehicle driving near a

school. Then through point of view shots we see that Alex is observing the children who are

running and playing, most of them dressed in dark colors. Alex appears to be bored by the kids

until a pair of legs catches his attention. It is a girl who is walking on her hands. This girl who is

wearing a red coat, stands out from all of the other children and instantly captivates Alex's attention. At first Eva appears to be a symbol of childhood innocence as she skips, twirls and walks on her hands, but the series of quips that follow between Eva and Alex as we see them in a series of shot reverse shots, places the viewer in a very uncomfortable position:

Eva: What are you looking at?

Alex: I'm not looking at you.

Eva: No? So, what do you call the act of staring?

Alex: To look.

Eva: So, you were looking at me. Do you do it often?

Alex: What?

Eva: Looking at kids.

Alex: Yes

Eva: Amazing. A pervert with no problems admitting it. At least you're original.

Alex: It's not what you think. It's a matter of...work.

Eva: With excuses, you're not so original. So...a matter of work? Really? I'm not interested in you anymore. Bye.

As if the verbal exchange wasn't already sexually charged, the situation quickly escalates as Eva skips away from the car, forcing Alex to go after her. With a sly smile, Eva turns around. This begins the reenactment of what Eva calls a typical movie scene, further illustrating her manipulative nature and lack of childhood innocence. First, Eva pretends not to be interested in Alex, forcing him to run after her until he asks her to wait for him. Eva then turns around and puckers her lips towards Alex. This scene, which is one of the first to introduce the audience to Eva's character, portrays her as a young *femme fatale* who has hypnotized Alex. My analysis of

Eva will focus on the child protagonist as an android version of a femme fatale and the relationships she develops with the human characters despite being a mechanical being.[29]

The roots of the femme fatale, a deviant female, can be traced back to Western religion via Eve from the Judaeo-Christian scriptures and Pandora from Greek mythology (Simkin 5). Genesis states that having been created from Adam's rib, Eve is the first woman in the world. Eve succumbs to the serpent's temptation as she eats the forbidden fruit from the tree of knowledge, disobeying God. She then shares the fruit with Adam. When Adam is questioned by God, he blames Eve, and they are both expelled from the Garden of Eden. As a punishment for her sin, Eve is sentenced with the pain of childbirth. In Greek mythology, Pandora is the first woman created by the gods sent to punish mankind for Prometheus' theft of fire. Pandora's curiosity prompts her to open a jar containing all of the evils of humanity, thus releasing them into the world. Early modern lethal women include Lady Macbeth and Cleopatra (Simkin 27-28). The femme fatale emerges as a central figure in the nineteenth century in Theophile Gautier's and Charles Baudelaire's texts and is associated with the styles of Decadence, Symbolism and Art Nouveau (Doane *Femmes* 1). This figure also holds a special place in cinema appearing as the vamp of Scandinavian and American silent cinema, the diva of the Italian film, and as the femme fatale of film noir of the 1940s and 1950s and then the neo noir of the late 1980s and early 1990s (Simkin 21). In Europe and Latin America, Dominique Mainon points to Maria Félix, Belinda Lee, Brigitte Bardot, Isabel Sarli, Barbara Steele, Chelo Alonso, and Anita Ekberg as the leading ladies of the 50s and 60s.

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[29] For a different reading of the film see Sarah Wright's *The Child in Spanish Cinema* where she draws a comparison between Eva's representation of prosthetic memory and Spain's memory wars.

every intention of defying her mother as evidenced by a close up of Eva's fingers which appear to be crossed. This close up gives us insight into Eva's state of mind. By crossing her fingers out of Lana's sight, Eva is not only telling a deliberate lie but also hopes to somehow be excused or escape punishment for lying. Eva also lies to Alex when she leads him to believe that David and Lana don't live together so that he'll pursue Lana romantically. Additionally, as can be gleaned from the initial exchange of words and puckering of lips described above, Eva is a sexually and intellectually precocious child who knows how to manipulate Alex to get what she wants.

While it is important to identify the femme fatales' transnational characteristics and historical roots, the femme fatale can take on many guises and thus must also be situated and studied within the local and national context in which she emerges.[30] For example, "feminist critics looked with interest to the noir of the 1940s...with an eye to the wartime redefinition of women's roles...in which women were being called on to perform roles associated primarily with men. Whether read as an anxious response or a performance of power, such images seemed particularly historically grounded (Tasker 120)." In the case of Spain, Ann Davies argues that the femme fatale is a "cinematic device for the recuperation of the hidden histories of those associated with the losing side of the Spanish Civil War" and consequently the femme fatale of Spanish retro noir "unusually carries a positive potential as part of the recuperation of lost history. Her familiar status as predator, often on the wrong side of the law, is rendered more complex in this specific context by the fact that the law of the time is perceived by many as illegitimate or unjust, while clandestine positions are open to reassessment as part of the work of recuperating suppressed memory" (147). While the stereotypical femme fatale was viewed as a projection of male desire and anxiety about changing gender roles and women's rights, there

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[30] See *The Femme Fatale: Images, Histories and Contexts* for essays on the femme fatale in Italian, Brittish, Mexican and Spanish cinema.

have been recent attempts to rethink the femme fatale as an independent and powerful figure. As Jess Sully states, "more subversive variants of the fatal woman denote a much wider range of cultural preoccupations, allowing both men and women to explore complex notions of gender, sexuality and spirituality. The study of the intriguing ambiguous femme fatale allows a subtler, more diverse reading of attitudes towards the fatal woman than has previously been maintained" (57). As a result of socio-historical factors and "proliferating media representations of fictional and non-fictional female killers" over time the femme fatale has multiplied in meanings and possibilities and can be found in a variety of genres and mediums (Straayer 152). Other manifestations and variations of the *fatale* include *fille fatale*, and *homme fatale*.

Throughout the film, Eva displays many of the characteristics of a femme fatale, but due to her age, perhaps a more accurate term is *fille fatale*. Although both the fille and femme fatale exhibit many similarities, as Samantha Lindop points out, some of the unique traits of a fille fatale include the construction of childishness as masquerade and a fixation with father surrogates (97). A fille fatale's obsession with father figures is evident in Maíllo's film. As the viewer learns halfway through the film, Alex and Lana were working together to create a child robot, but Alex abandoned the project and left town before seeing it to completion. Lana decided to continue the robotics project on her own, eventually creating Eva. Lana would also go on to marry David (Alex's brother), despite still being in love with Alex. When Alex returns to town after 10 years, which is where the film's storyline begins, he finds himself in the middle of a very tense love triangle. Though the film doesn't provide much information about David's character or the 10 years Eva lived with Lana and David before Alex's return, Eva's inclination to carry out a murderous act may be attributed to her "real" father's (Alex) absence during her childhood. Whenever, David and Alex appear in the same scene together, they are usually positioned

opposite each other, showing the tension that exists between both brothers. In many scenes such as the graduation party and the dinner party, David and Alex are positioned opposite each other with Lana between them, a symbol of the love triangle that exists between these characters. During the graduation party, the tension is heightened as Alex and Lana dance to David Bowie's "Space Oddity." Bowie's song brings together three of the main elements of the film: SF, the aesthetics of the 70s and romance. Jealous of the connection that Alex and Lana still share, this intimate scene at the graduation party will be followed by an altercation between Alex and David in which they are both seen punching each other in the snow. Though David may have physically occupied the space of the father figure, there is little indication that Eva and David share any type of father-daughter bond. In fact, when addressing David, Eva refers to him by his proper name rather than "Dad." On the other hand, throughout the film several two-shot frames are used to establish intimate connections between Alex and Eva, Lana and Eva and Alex and Lana, yet never between Eva and David. Tracking shots also show Eva and Alex, and Lana and Alex enjoying long walks together engaged in conversation or ice skating together, yet one never sees Eva and David spending significant time together.

Outwardly, Eva displays a façade of youthful innocence to mask her lethal potential. She is an ambiguous young girl who walks a fine line between admiration and obsession of Alex. In essence, Alex is interested in Eva because she is different than the other girls her age. When Alex is looking for a child on which to model the SI-9 robot, he finds them all boring, but Eva displays greater maturity and keeps him guessing about what she will say or do next. As Despina Kakoudaki states, "in its negation of conception, gestation, and growth, the animating scene transforms the processes of childbirth into a fantasy of the construction of adult bodies, replacing the vulnerability of childhood with a prefabricated or indestructible adulthood" (5). Not having

undergone the traditional cycle of reproduction and development, Eva is a woman in a little girl's body. Towards the end of the film after Lana's death, there is an erotic scene between Eva and Alex as Eva takes Alex by the hand and guides him towards the bed. There Eva removes her shoes and proceeds to lie down while asking him to read her *One Thousand and One Nights*. In this book, in order to keep the prince from killing her, the princess tells him an endless story night after night. Like the princess in the story, Eva wants to be forgiven. Throughout the film there are several questionable exchanges between Eva and Alex. Ultimately, perhaps it is in a subconscious attempt to establish a closer relationship with her father that Eva kills her own mother, the other important woman in Alex's life.

In the case of Maíllo's film, there is an added layer of meaning and complexity in reading Eva as a fille fatale because as the spectator learns, Eva is not a human child but an android. Having been born in a lab, from her very conception, Eva is a transgressive figure that appears to pose a threat to the traditional nuclear family and to the established patterns of human social interaction. As Lindop states in her analysis of the portrayal of the fille fatale in American cinema, "the [deadly girl] is overwhelming associated with domestic arrangements that deviate from the traditionalist framework, linking the fille fatale directly to fears concerning the breakdown of the nuclear family" (103). Eva too appears to embody the end of the Spanish nuclear family as we know it. Like her artificial daugher, Lana also appears to pose a threat to the nuclear family given her non-traditional female occupation as a scientist and her research interests in artificial reproduction.

Lana is an atypical scientist because she is a female operating in a traditionally male field. As Margaret Rossiter states in reference to women scientists in America, "women scientists were thus caught between two almost mutually exclusive stereotypes: as scientists they

were atypical women; as women they were unusual scientist" (xv). This was the case not only in the Unites States, but in Europe as well. After Alex observes Lana teaching a class of future scientists, he remarks that the students are not there to learn about the theories behind AI and robotics, but to see her. Portrayed as young, beautiful and a loving mother, Lana is an atypical scientist who tries to circumvent biological reproduction. Although Lana tries to create an android capable of emotional intelligence, she ultimately fails because Eva doesn't pass the security tests. Even though both Lana and Julia, the director of the laboratory, know that Eva may pose a threat to humanity because she failed the security test, the child robot is allowed to live with Lana and David. While this is a sign of weakness on the part of Lana as a scientist, who should have been able to distance her maternal desires from her work, it also illustrates the complexity of human-robot relationships and the empathy that ensues when humans engage with human-like artificial beings. Although underneath the skin Eva is composed of mechanical parts, she looks and acts like a human girl. Lana develops a strong emotional bond with the android to the point where she is unable to terminate its life. By bringing a child robot into the home, Lana attempts to redefine the family unit and what it means to be human. However, this is a transgression that goes against the traditional biological nuclear family and for engaging in technological rather than biological reproduction, Lana will receive the ultimate mortal punishment, death, at the hands of her own creation.

Given the importance of the death scene in establishing the android's autonomy and marking the breaking point of the human-robot relations, the sequence is repeated twice during the film. The viewer first sees the death sequence at the beginning of the film: an aerial shot of an infinite field of snow gives way to a forward tracking shot that leads us to a woman hanging from a cliff. As the woman falls to her death, the screen fades out to black and all we are left

with are the sounds of her screams. A crane shot then shows a girl dressed in red running through the snow, away from the cliff. Tracking shots show her running through the woods until she reaches a house. The girl then faints when the male character asks her, where her mom is. Unfamiliar with all of the characters, though this opening sequence is both suspenseful and shocking, the spectator has no emotional connection with any of the characters. However, after being a witness to the interactions and development of the protagonists, when the death sequence is again played out at the end of the film, the viewer has a much more personal connection with the characters. Presented with Lana's death for the second time, the audience aligns Eva and by extension androids with evil. This scene is the final juxtaposition of the angel falling to her death and the femme fatale standing over her.

By killing her mother, Eva emancipates herself, even though this emancipation is short lived. Alex can either kill the fille fatale or be killed by her. At the end of the film, Alex exercises control over the fille fatale when he asks, "what do you see when you close your eyes?" This is the phrase that is used to permanently destroy artificial beings. Like Doane points out, "the femme fatale is situated as evil and is frequently punished or killed. Her textual eradication involves a desperate reassertion of control on the part of the threatened male subject" (*Femmes* 2). Although it is true that Eva was viewed as a threat not only to the traditional family unit but to society as a whole and therefore had to be eliminated, the scenes following the death sequence offer a much more complicated situation and nuanced representation of the android's reincarnation of the fille fatale. Furthermore as Sylvia Harvey suggests in her analysis of the family in film noir:

> The absence or disfigurement of the family both calls attention to its own lack and to its
> own deformity, and may be seen to encourage the consideration of alternative institutions

for the reproduction of social life. Despite the ritual punishment of acts of transgression, the vitality with which these acts are endowed produces an excess of meaning which cannot finally be contained. Narrative resolutions cannot recuperate their subversive significance. (45)

Although at the moment of Lana's death, the audience will characterize Eva as a killer robot that must be eliminated, the scenes that follow problematize this portrayal as the android child appears to be in a state of existential crisis.

After Lana falls to her death, Eva returns to Alex's house and enters a state of shock repeating over and over again that she pushed her mother over the cliff. The director of the laboratory tells Alex that Eva must be destroyed because she killed a human, but Alex angrily remarks that she is only a little girl. Like Lana who years ago became very attached to the android, welcoming it into her family even though it had failed the security protocol and should have been destroyed, Alex too has developed a special bond with Eva. Both Lana and Alex developed emotional attachments to the android and this created a complex web of human-robot interactions. Though Eva had a fairly high level of emotional intelligence, she lacked a foolproof moral code that would keep her from carrying out a crime against the human species. In this sense, it can be said that Eva was more like a human than a machine. As Kike Maíllo stated in an interview with *Opium*, "How would a robot have to behave to be accepted by humans as an equal, rather than as a machine(n.p.)"? While machines can be programmed to obey orders and carry out specific functions, humans are unique in that they possess free will. Humans have the ability to choose between different possible courses of action, often with an ethical/moral code in mind. Feeling remorse, Eva acknowledges that she committed an evil act and asks Alex to help her be a good girl. Unfortunately, it is too late. In what is perhaps one of the most emotionally

intense scenes of the film, Eva and Alex embrace as he utters the phrase that will permanently

put Eva to sleep. Knowing that she cannot be saved, Eva has come to terms with death. As the

camera dollies out, we see all of Eva's memories shatter. An epilogue then reveals what Eva sees

when she closes her eyes: in stark contrast to the frigid gloomy snow scenes present throughout

the film, we are now surrounded by rays of sun and clear blue water. Eva is no longer wearing a

red coat, but dressed in white, a symbol of purity. In this scene Eva, Alex and Lana appear to be

a perfect family as they do cartwheels in the sand, fly kites, and play fetch with their dogs. The

scene ends with all three of them hugging as the sun sets behind them. It is a dream that will

never come to fruition. It may be that more than a fille fatale, Eva is a victim of her environment.

Neither Lana, who broke the mold of the traditional stay at home mother by working as a

scientist, nor Eva, who was born in a lab, ever stood a chance. By introducing a child like

android into the familiy, Lana broke the patterns of human social interactions, and while she may

have been ready for an alternative family structure, there is a still a lot of uncertainty and anxiety

about creating free robots with the emotional intelligence of a human. This concept of a "free

robot" will be explored in greater depth in the analysis of *Autómata*.

AUTÓMATA: EVIL HUMANS AND MORAL ROBOTS

While *Eva* initially portrayed a generally optimistic vision of the future of robotics, *Autómata*

shows a dystopian future in which the ties between humans and robots have been severed.

Autómata was not praised like *Eva*, receiving instead numerous negative critiques. Although

Variety described it as a dystopic mess, the *Hollywood Reporter* as a "dystopian drama that goes

up in flames", and *New York Times* as a "heap of gelatinous mush", the value of the film is found

in its commentary on robot ethics and the implications for humanity. In an interview with

WAMG Gabe Ibáñez commented that the goal in making the film was to honor the SF films of the 60s and 70s, which were philosophically driven rather than spectacle driven like SF films today. Ibáñez also states that his team chose to use real robots instead of using computer-generated imagery (CGI) so that the humans and robots would physically inhabit the same space, making the human-robot interactions appear more realistic. As we learn from the expository intertitles, it is 2044 and earth has become a radioactive desert due to solar storms reducing the human population by 99.7% to 21 million people. As a result, ROC Corporation created the Automata Pilgrim 7000 to aid and protect the last remaining humans. Since robots aren't limited by biological needs like humans they are able to work harder and longer in conditions in which humans would struggle to survive. A series of black and white images as if reminiscing of the good days of human-robot interactions, show robots helping humans in hospitals as nurses, celebrated by children at a school, and as members of a brigade to stop the radioactivity from further consuming human life. To emphasize and honor all that the Pilgrims have done in helping the human species, the images appear to the tune of Handel's *Music for the Royal Firework's Overture*. However, when the Pilgrims lose the fight to protect humans and the environment from the radioactive decay, the humans turn on them. Images show how the Pilgrims' bodies are vandalized and burned alive. Split into two parts, the first part of the film, which serves as the exposition, has many elements of film noir such as crime, rainy streets as a result of the acidity in the environment, and stark light/dark contrasts such as in the protagonist's apartment. These light/dark contrasts emphasize the perilous situation that the protagonist finds himself in as he struggles to survive and protect his pregnant wife in both a politically corrupt and ecologically disastrous environment. In addition to elements of film noir, the fist part of the film has many elements of cyberpunk.

The roots of cyberpunk can be traced back to the New Wave SF movement of the 60s and 70s. The primary exponents of cyberpunk include William Gibson, Bruce Sterling and Pat Cadigan. In *Mirrorshades: The Cyberpunk Anthology*, Sterling establishes the following characteristics of cyberpunk: "For the cyberpunks...technology is visceral...utterly intimate...not outside us but...under our skin...Certain themes spring up repeatedly in cyberpunk. The theme of bodily invasion: prosthetic limbs, implanted circuitry, cosmetic surgery, genetic alteration...Mind invasion: brain-computer interfaces, artificial intelligence, neurochemistry. (xi). Works characterized as cyberpunk portray decadent cities in which the government has been replaced by corrupt megacorporations, and where androids, posthuman body modifications, artificial intelligences, virtual realities and flashy advertisements are ubiquitous. In these societies, high tech has led to a breakdown of social structures and on the edges of society in the city's outer slums one finds gangs, hackers, drug dealers and rebels. This cyberpunk world present in the first part of *Autómata* where it's permanently cloudy and gloomy, where holographic advertisements creep into tiny apartments, where trash and decay line the streets, and where robots who were once lauded have become marginalized. All of this serves as a backdrop in helping the spectator understand the events that have led to the current severed state of robot-human interactions. This first part of the film then contrasts sharply with the second part of the film in which the robots leave the industrial ghetto behind in search of freedom. In the second part of the film, Jacq Vaucan (Antonio Banderas), an insurance agent of ROC robotics who is tasked with investigating cases of illegal robotic tampering and robots violating the second security protocols, finds himself hostage in the radioactive desert by what appear to be free robots.

When the Pilgrims were created, two security protocols were put in place to protect humans from the Autómata. The first protocol prevents the robot from harming any form of life

and the second protocol prevents the robot from altering itself or other robots. These protocols are a reference to Asimov's three laws of robotics created in 1941 after Asimov grew tired of SF portraying robots as killers writing in the introduction to *The Rest of the Robots*: "...usually pictured as a creature of metal without soul or emotion. Under the influence of the well-known deeds and ultimate fate of Frankenstein and Rossum, there seemed only one change to be rung on this plot.--Robots were created and destroyed their creator; robots were created and destroyed their creator: robots were created and destroyed their creator" (xii). In response, Asimov introduced a different kind of robot, one with safeguards that reacted along rational lines. As James Gunn explains:

> The Frankenstein complex may be observably true in human nature (and this, along with its appeal to human fears of change and the unknown, may explain its persistence in literature) ... it is false to humanity's intellectual aspirations to be rational and to build rationally. Blind emotion, sentimentality, prejudice, faith in the impossible, unwillingness to accept observable truth, failure to use one's intellectual capacities or the resources for discovering the truth that are available, these were the evils that Campbell and Asimov saw as the sources of human misery. (48)

If in fact robots were created Asimov argued, they would not be allowed to rampage freely through society because humankind is a rational and logical species. Thus Asimov's robots were "machines designed by engineers, not pseudo-men created by blasphemers (xiii)" From the very moment of their construction Asimov's robots had three safety protocols in place. The three laws are as follows:

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 robot must protect its own existence as long as such protection does not conflict with the First or Second Law. (Gunn, 47).

These laws guide human-robot interactions.

In *Autómata*, the robots have broken the safety protocols in an effort to save themselves from humanity's enslavement. As Kakoudaki explains in *Anatomy of a Robot* :

Both as workers and as slaves, artificial people are designed with an explicit purpose, and this relationship to instrumentality distances them from certain aspects of the human condition. In contrast to real people, whose lives are not prearranged and whose purpose as beings is indeterminate or unknowable, artificial people are designed to do something specific and usually (or ostensibly) productive or useful. This coded interpretation of enslavement safeguards the difference between real and artificial people, implying that, ideally, human life is purposeless, while the lives of those constructed or enslaved have been given explicit limits and overt purposes by their oppressors. (116)

The robots in *Autómata* were created to clean up society's mess and to obey orders. While out in the desert heat and desperate to return to the city, in a rage of fury Jacq exclaims that he is a human and therefore the robots must obey him. Unfortunately robots have been mistreated by society. *Autómata* shows a violent human society in which robots have come to display greater morality and humanity, than humans themselves. Several scenes throughout the film portray the robots in a positive light and invite the audience to empathize with robots over humans. For example, the first time the audience is introduced to a robot, it appears to be hurt and helpless as it sits amidst a pile of trash trying to repair itself. As the robot raises its arm in an effort to shield

itself, the cop shoots it without the slightest sign of empathy or remorse. He shoots it because he feels threatened by the human-likeness of the robot. Then in the desert, though the robots disobey Jacq's orders to return home to the city because there is no place for them there, they carry him and care for him because they are still bound by the first protocol, which obliges them to protect human life. The trek through the desert illustrates how humans' biological and physical needs renders them frail and helpless in comparison to robots. As they cross the desert, the robots have to make a water condenser to keep Jacq hydrated, find bugs for him to eat in order to keep him alive, and make a fire at night to keep him warm. Time and time again, the robots save Jacq's life in the desert as the police, sent on behalf of the ROC corporation continuously attempt to kill him. Throughout the film, robots are cast as more humane than mankind, which commits one evil act after another, targeting one another as well as the robots. In one scene, a little boy is seen shooting another human being without any regard for the sanctity of life. While humans appear to be regressing, robots are evolving and displaying greater morality than their creators.

As one of the scientists in the film explains, robots have surpassed human intelligence and evolved at an exponential rate. While humans are limited by their biological and physical needs, the second protocol is the only thing that impedes robots from evolving. Having broken the second protocol, robots are no longer subservient to humans, and are self-repairing themselves in an attempt to establish their own society. While humanity is degressing and will cease to exist, AI is the next step in evolution. By creating self-repairing robots, *Autómata* questions human existence and its place in evolutionary theory. Self-adaptive robots and the possibility of robot evolution is one of the many areas being explored in robotics today. As Knight notes, Josh Bongard is a researcher at the University of Vermont who is applying the

principles of natural selection and biological development to machine design to show that machines can evolve on their own. As technological advances continue, the idea that AI can surpass human intelligence will be even more debated in scientific circles in the years to come. In an interview with the BBC Stephen Hawking argued that "once humans develop artificial intelligence, it will take off on its own and redesign itself at an ever-increasing rate," and that "humans, who are limited by slow biological evolution, couldn't compete and would be superseded" (qtd. in Cellan-Jones n.p.). Ibáñez's comment in an interview with Ignacio Estrada in Sitges echoes the ideas of Hawking, claiming that AI is one of the revolutionary scientific and philosophical paradigms of the 21st century that we must explore further, and his film does just that.

In keeping in line with the Spanish tradition to offer a more reflexive and philosophical style of SF, Jacq and Cleo engage in an extensive conversation about AI, humanity and motherhood as they trek through the desert:

> Cleo: I didn't know that a human could kill another human. I know that humans can also create life. Is that why you make us? Who made you Jacq Vaucan?
>
> Jacq: Do you know what a mother is Cleo? Of course you don't. You don't know because you are just a machine. That's all you are. I'm thankful you save my life, but whoever altered you wasn't thinking about you. I know men. They will not stop until they kill all of you.
>
> Cleo: To die, you've got to be alive first.

Jacq believes that motherhood is unique to biological beings, but Cleo proves him wrong when she creates a child out of mechanical pieces redefining our understanding of reproduction and familial relationships. The creation of Cleo's baby is paralleled with the birth of Jacq's baby.

Though Rachel's and Cleo's babies were engendered via very distinct mechanism, one being biological and one mechanical, both babies represent the same thing: A mother's desire to bring life into the world to ensure the continuation of its own species. With the help of Jacq, Cleo and her child robot cross over to the other side of the canyon where they must find a new home. With humans actively persecuting all robots because they fear the effects of the violation of the second protocol, robots and humans cannot coexist in society. Now that the intelligence of the robots has surpassed that of the humans who created them, and they have become autonomous beings, no longer society's slaves, ROC fears the robots simply because they cannot understand them. Threatened by a source they can no longer control, ROC sees annihilation as the only way to protect mankind. Cleo has no choice but to leave. Once on the other side of the canyon, in a final act of liberation, a close up shows Cleo removing her human-like mask and tossing it to the ground. By removing the mask Cleo simultaneously embraces her identity as a robot and erases all ties with the humans that once controlled her. Though *Eva* and *Autómata* offer two very different visions of a not too-distant future, they both explore progressive forms of reproduction and mother-daughter bonds in societies in which robots have been endowed with souls and emotional intelligence. As such, both films touch on the growing field of affective robotics.

Affective robotics involves theoretical and practical ways to imitate human emotion in AI as well as inducing emotions toward AI in humans. As Kevin LaGrandeur argues, "inducing emotions is important to this effort to create safer and more attractive AI because it is hoped that instantiation of emotions will eventually lead to robots that have moral and ethical codes, making them safer; and also that humans and AI will be able to develop mutual emotional attachments, facilitating the use of robots as human companions and helpers" (97). By programming emotion into robots, the goal is to make AI that is safer, friendlier and more attractive to consumers.

Robots need to exhibit empathy as well as inspire empathy for themselves in humans in order to create believable human-robot interaction. Maíllo's and Ibáñez's films are less about the the mechanics of robotics and more about understanding what it means to be human and how familial and societal bonds are shaped in the presence of a cultural other. SF often portrays robots as a cultural other and thus as beings that are to be feared. Michael Szollosy argues that this negative popular conception of robots is a projection of society's anxieties about AI. Ultimately our treatment of AI informs not only what it means to be human but what it means to be humane.

CONCLUSION

AI has been in the headlines as Tesla's Elon Musk and Facebook's Mark Zuckerberg continue to offer opposing opinions on the impact that AI will have on society. At the bipartisan National Governors Association's meeting in Rhode Island Musk told governors that "artificial intelligence poses an "existential threat" to human civilization" and that proactive government intervention is needed (Domonoske). As *Vanity Fair* reports, in an effort to create safe AI Musk founded OpenAI, a non-profit research company (Dowd). The idea behind the company is to make AI technology an open source and thus keep one person or one company from owning all of the knowledge and using it to do harm. Other prominent figures warning society about the dangers of AI include Bill Gates and Stephen Hawking. On the other end of the spectrum are Larry Page and Mark Zuckerberg who believe that AI has many potential benefits. In a Facebook post Zuckerberg wrote, "One reason I'm so optimistic about AI is that improvements in basic research improve systems across so many different fields -- from diagnosing diseases to keep us

healthy, to improving self-driving cars to keep us safe, and from showing you better content in News Feed to delivering you more relevant search results. Every time we improve our AI methods, all of these systems get better"(n.p.). Undoubtedly AI and robots in particular will challenge human interactions.

While advances in technology, specifically in the field of robotics, can help fill gaps in human social relationships with robots posing as children, companions, caretakers and lovers, we must be careful not to reinforce existing gender stereotypes. Currently, most of the robots that are purchased are of the female sex. This contributes to a narrative of the female sex as a passive commodified object. Film can help change this narrative by seeing the rise of robots in society as an opportunity to explore questions of sex and gender. In *Eva*, a child android occupies an ambiguous role in the nuclear family as she oscillates between a fille fatale and the ideal daughter. Likewise, Lana struggles with her role in the nuclear family as she explores what it means to be the mother of an artificial child. In *Autómata* Cleo challenges our definition of motherhood as she creates a genderless child-like being from mechanical parts and ultimately casts aside the physical attributes that humans had imposed on her to characterize her as female and feminine. Cleo's child will grow up in a genderless environment. With a focus on a morally and philosophically driven discourse Spanish SF film in contrast to the works produced by Hollywood is uniquely positioned to shed light on the impact of robotics on our society. A society which defines many lived experiences by sex and gender. In the fictional works discussed above, the artificial female bodies embody traditional female roles as they aspire to be mothers and daughters, but also make a conscious effort to free themselves from humanity's enslavement. As a result, the fictional works analyzed in this chapter have raised numerous issues dealing with robot ethics which I will discuss in the fourth chapter.

Although currently robots are not sentient and do not actually feel emotions, but rather just give the illusion as though they do, "if a robot can make a human feel something, then what the robot feels (or doesn't feel) is moot" (Renstrom). In other words, there is still great validity in examining how robots affect our own emotions and behavior. Ultimately robots may never acquire sentience, and may never feel emotions to the same extent that humans do. This means that rather than being concerned with whether or not robots will become killing machines, we should be concerned with what these mechanical creations and our treatment of them says about ourselves. How do these robots affect the way we interact with our environment and with each other? While many will argue that robots are not people and therefore it doesn't matter how we treat them, Katie Darling argues that we should care because "the way we treat robots may have implications for the way we treat other human beings" ("Could you kill a robot"). From SF to science journals the future of robotics is widely debated.

Already, technology has altered human interaction as people spend more time interacting with each other via text messages and online networks than face to face. Robot-human interactions may be the next phase. What may save humans from being replaced by robots is the Uncanny Valley. According to this theory, which was first proposed by Masahiro Mori, a Japanese roboticist in 1970, there is a point at which humans become uncomfortable with a robot's humanness. This means that even as technology evolves, scientists will design robots that are in one way or another distinguishable from humans. Following this reasoning it is believed that robots will never replace humans. While this may be true, one-day robots will certainly occupy a bigger space in society and thus alter relations, as we know them. SF provides readers with an opportunity to take a look into a life that is different from their own; a life that may not be too far into the future. By allowing us to view the world from the point of view of mechanical

female bodies, we gain greater insight into how different sexes interact with each other and how we establish emotional ties with one another. By developing emotional bonds with humans, the robots present in *Eva*, and *Autómata* go beyond routine and mechanical robot-human interaction, and thus act as agents of change that remind us of the need of greater empathy, the need for a more progressive and inclusive family unit, and the need for a society that is more accepting of the other. Robots are the most human of our machines and as such have much to teach us about humanity.

Chapter 3

Reappropriation of Cyberpunk in 21st Century Spain: Neoliberalism and Female

Antiheroes

As technologies such as artificial intelligence, virtual reality, and prosthetics become more widespread in the 21st century, authors are reappropriating the cyberpunk aesthetic of the 1980s to explore the posthuman identities that are emerging as a result of these aforementioned advancements. In the 1980s, the cyberpunk movement in SF attempted to break down the dichotomy between nature and culture, and to reconcile "a yawning cultural gulf between the sciences and the humanities: a gulf between literary culture, the formal world of arts and politics, and the culture of science, the world of engineering and industry" by forging an alliance between technology and 80s counterculture (Sterling x). Even though the traditional cyberpunks were innovative in that they sought to differentiate themselves from mainstream SF by merging high tech with pop underground and to revolutionize the genre by focusing on technological invasion of the mind and body, they were heavily criticized by feminists who pointed out that this literary movement retained conservative social values. Feminists argued that cyberpunk literature showcased heteronormative conventions of gender, sexuality and power and clearly favored strong male characters while making powerful female characters, and not to mention gay and lesbian characters, nearly invisible (Kelly 151). For example, as Karen Cadora asserts, "Cyberpunks are almost invariably male--hypermasculine ones at that--and, as a rule, they have little time for issues of sexual politics" (157). Likewise, Sabine Heuser states that one of the defining tropes of cyberpunk is a "romanticized, usually male, hacker or cowboy who fights

against the conspiracy or multinational capital and their corporations" (xix). *Reload: Rethinking Women + Cyberculture* was produced at the turn of the 21st century out of a need to consider gender and technology from fictional and theoretical viewpoints. Rather than dwell on early cyberpunk's conservative politics however, this chapter, through posthuman and feminist science and technology studies, explores how cyberpunk is a subgenre whose tropes when situated within a more complex social web can lend themselves to discussions of the political dissatisfaction, and racial and economic inequality present in a 21st century in which neoliberalism is the prevailing economic paradigm in many parts of the world.

Contemporary Spanish authors are embracing some of the identifying characteristics of cyberpunk literature like the powerful mega corporation; the underground hacker counterculture; cyberspace; and the dystopian city noir where crime is rampant, and situating these tropes within a more complex social web that encompasses not only sex and gender but also race and class. These socio-economic factors in conjunction with technology, shape power hierarchies both locally and globally. The use of technology as a form of social control has been present in many of the works analyzed in the previous two chapters. In my discussion of *El planeta hembra* in chapter one, I touched upon how a matriarchal government uses the Internet and technology to deceive and control its citizens. Then, in chapter two I briefly explored how institutions such as ROC Corporation use technology to manipulate artificial female bodies in the films *Eva* and *Autómata.* Although the novels and films in the previous chapters incorporate some elements of cyberpunk, the characteristics of this sub genre are at the foreground of the settings, plotlines, character archetypes and tone of two of the three texts that I will analyze in this chapter, *El sueño del Rey Rojo* (2004) by Rodolfo Martínez and *Switch in the red* (2009) by Susana Vallejo. I will also discuss "Mil euros por tu vida", a short story by Elia Barceló. Although Barceló's story

cannot be categorized as cyberpunk, and is best described as dystopian, it serves as an example of the fluidity of SF genres since it too incorporates cyberpunk tropes, particularly the concept of "mind upload". Through fictional representations of cyberspace where users take on multiple identities, networks that incite political activism, and brain-computer interfaces that facilitate mind upload, Martínez, Vallejo and Barceló examine both existing and potential implications of technology on a social, economic, political and philosophical level. Through a fictional dramatization of toxic corporate culture and extreme political corruption, these contemporary Spanish authors explore socio-economic issues such as the proliferation of mega-corporations, the widening gap between the rich and the poor, the inequitable access to technology across the globe, and the extent to which technology empowers and/or oppresses women.

Although Martínez and Vallejo have appropriated some of the key cyberpunk tropes, it's important to take note of the significant changes the techno-cultural landscape has undergone from the time that cyberpunk emerged as a movement in the 1980s to the first decade of the 21st century when it reemerged. While William Gibson's characters were concerned with disembodied relationships to technologies,[31] and with corporate structures that were just beginning to solidify at the end of the 20th century, that future has now become a contemporary dystopian reality in which mega-corporations and economic systems are major forces of oppression worldwide. Initially, the explosive growth of technology in the 1990s was accompanied by the illusion of global access and a utopian world where gender, class, nationality and race would be erased. This utopianism is present in the "Anthem" commercial from 1997 by Microwave Communications Inc (MCI). In this ad, MCI presents the internet as a utopian public space as people of various ages, sexes, and races are seen smiling and uttering statements such as

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[31] William Gibson, an American author, was one of the most influential writers of the cyberpunk movement in the 1980s.

"there is no race," "there are no genders," "there is no age," "there are no infirmities" and "Utopia? No, the Internet." Through this commercial, MCI positions itself and its supposedly color and gender-blind technology as the blanket solution to the social inequalities that still exist in the real world, urging people to go online to escape the problems of the material world (Chun 129). Originally, the Internet was accompanied by a wave of optimism, but it wasn't long before this same environment became the site of cybercrime, cybersex and cyber-bullying. This debate between technophilia and technophobia eventually made its way into feminist discourse. Technophilia is an embrace of technology while technophobia refers to a fear or dislike of technology. One of the questions widely debated within feminist studies is whether technology liberates and empowers women or is an extension of patriarchal domination, particularly since "the Internet is marked by its military origins and the white male hacker world that spawned it" and is heavily used by transnational corporations and financial markets, institutions which are predominantly governed by men (Wajcman 4). Although industrial technologies were a "key source of men's power and a defining feature of masculinity" (Wajcman 6), some cyberfeminists argue that "new digital technologies are much more diffuse and open" (Wajcman 63), offering significant subversive possibilities. Although in some cases technology can empower women, particularly middle and upper class women in the Global North, there also exists great inequality in terms of who has access to technology and for what ends, when social class and race are taken into account.

In the case of Spain, the cyberpunk and dystopian texts published in the first two decades of the 21st century present a backdrop of anxieties that have plagued the various sectors of Spanish society in recent decades such as the economic crisis of 2008, high unemployment rates, the proliferation of terrorist hacking cells throughout Europe, separatist movements, African

immigration and neocolonialism. Many of these political, social and economic tensions make up the fictional environment that the characters in the works analyzed in this chapter circumnavigate. In addition to giving prominence to the Spanish techno-cultural landscape, Martínez and Vallejo have appropriated some of the identifying characteristics of cyberpunk literature, and situated them within a more socially progressive agenda. In other words, while cyberpunk fiction traditionally portrays males as the heroes, in *El sueño del Rey Rojo* and *Switch in the red*, the female characters such as Ángela, Andrea and Present are the architects or at the very least, integral contributors of the plans that will obliterate systematic repression and institute sovereignty back to the people. In "Mil euros por tu vida", Sarah and Anna serve as the moral compass against the exploitation of the Global South. In the last few decades, the body has re-emerged as a central focus of the humanities and social sciences, and theory has shifted from discussions of the body as a natural system, to instead examining how bodies are produced and located in historical, geographic and cultural contexts (D. Bell 138). Specifically, this chapter will explore how the female protagonists present in the novel use technology to attain autonomy for themselves and society. More importantly, the fictional human-technology interface provides insight into technology's potential to change human interaction and impact our notions of sex, gender, race, socioeconomic status and personhood as bodies take on multiple and at times conflicting identities. In the texts, technology appears in the form of communication systems such as social media, chat rooms, and interconnected networks that manipulate and deceive citizens, as well as in the form of biotechnology and artificial implants that enhance the human body and prolong life. Initially, corporations and governments harness this technology to appease the wealthier sectors of society and to control those at the lowest income level, but ultimately the three texts discussed in this chapter illustrate how women can appropriate those same

technologies to challenge and subvert a socially and politically corrupt system. My reading of the female characters and their interactions with technology draws heavily upon the cyberpunk and dystopian aesthetic, the sociopolitical issues present in Spain at the turn of the 21st century, and the philosophical theories that help explain the nature of existence and what it means to be human in the Information Age. Extending beyond literary discussions, this chapter will also explore a recent application of virtual reality titled "The Machine To Be Another." Originally developed in Barcelona, this project combines virtual reality with neuroscientific techniques as individuals swap bodies with each other, in an attempt to explore concepts like sexism, gender identity, and bias. This multidisciplinary artistic investigation is an example of what can be accomplished when art and science are melded together. Furthermore, this non-literary example illustrates the relevance of SF and the extent to which this genre is concerned with contemporary technologies and scientific innovations.

FEMALE SUBJECTS IN CYBERSPACE IN *EL SUEÑO DEL REY ROJO*

In an interview with Charles Tan, Rodolfo Martínez describes the SF market in Spain as a small one, explaining that "it's a perception problem…[the] SF label is discredited and it's hard to fight against prejudice" (n.p,). In order to attract the mainstream audience, Spanish novelists, just like film directors as I discussed in chapter two, must blend multiple genres. One such novelist is Rodolfo Martínez, who characterizes his fiction as mestiza literature that combines many popular genres including SF, mystery, fantasy, thriller, crime novel and adventure. Today, Martínez is a highly regarded SF and fantasy novelist and winner of numerous awards, but his journey wasn't an easy one. Like many SF novelists in Spain, who have had to pursue a second career outside of writing to make a decent living, Martínez is a computer programmer in addition to a novelist. His

knowledge of programming is evident in his fictional descriptions of technology and computerized worlds. His first published novel, *La sonrisa del gato* (1995), is said to be the first cyberpunk novel in Spain. Along with *La sonrisa del gato*, several of his other novels including *Tierra de nadie: Jormungand* (1996), *El abismo te devuelve la mirada* (1999), *El sueño del Rey Rojo* (2004), and *Fieramente humano* (2011) have received the Ignotus Award. Many of his short stories and novellas have also been recognized by the Asociación Española de Fantasía, Ciencia Ficción y Terror (AEFCFT). Other awards he has received include the Asturias Novel Prize for *La sabiduría de los muertos* (1995), the University of País Vasco Short Story Award for "Tarot" (1999), and the Minotauro Novel Prize for *Los sicarios del cielo* (2005). In order to introduce English-speaking audiences to some of his works, *El adepto de la reina* (2009) was translated in 2012 under the title *The Queen's Adept* and *La sonrisa del gato* in 2015 under the title *Cat's Whirld*.

True to Martínez's hybrid style, *El sueño del Rey Rojo* combines cyberpunk with elements of the thriller and detective novel. The core narrative plot revolves around three hackers entangled in a love triangle, who set out to solve a murder/suicide mystery. Álex, the male protagonist and one side of the love triangle, is representative of the hacker archetype of cyberpunk. Hackers "frequently represented as spearheading the revolution into cyberspace and the 'information superhighway', may be admired for their intellectual capacities (that is, for their 'brain' or 'software'), but the common representation of such individuals usually suggests that their 'bodies' or 'wetware' leave much to be desired" and they are "typically portrayed as social misfits and spectacularly physically unattractive" (Lupton 102). At the age of 13 Alex looses both legs. Physically immobile, he becomes a "miron silencioso" connected to the world through the Internet. Much of Álex's life has been spent longing for Andrea, the object of desire and the

second side of the love triangle. Martínez's novel begins with the following epigraph from Pablo

Neruda's "poema 20" from *Veinte poemas de amor y una canción desesperada* (1924):

"Nosotros, los de entonces, ya no somos los mismos" (7). Neruda's poem, a melancholic

expression of a lost love, hints at one of the underlying tones of the novel as Álex's yearning for

Andrea dictates many of his actions throughout the text. The third side of this love triangle is

made up of an AI known as Lúrquer. This AI is modeled after Andrea's ex (the real life

Lúrquer). Lúrquer is best described as "el fantasma digital de su [Andrea] ex novio y mi [Álex]

mejor amigo" (52). In addition to these three characters, the computer is also a major protagonist.

Just as computers have become a ubiquitous and intimate part of daily life, "the roles played by

computers in SF have dramatically expanded, with computers moving from just being subjects in

SF narratives to becoming significant agents in the creation of those narratives" (Landon 86). In

El sueño el Rey Rojo, computers serve as the interface between the real world and the virtual

world. Closely associated with computers and networks, is cyberspace.

The origins of cyberspace can be traced both to science and SF; it is as much a physical

location made up of code, data, hardware and software, as a mythical and fantastic space.[32] In

1948 Norbert Wiener defined cybernetics as a new field in science, which "attempts to find the

common elements in the functioning of automatic machines and of the human nervous system,

and to develop a theory which will cover the entire field of control and communication in

machines and in living organisms" (14). Cybernetics established a dialog between physiologists

and mathematicians and a parallel between the functioning of the brain and that of computing

machines. In fact, much of the SF that deals with computers and cyberspace, uses synapses and

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[32] For more insight about the meaning of cyberspace in disciplines ranging from computer science to philosophy see *Cyberspace: First Steps*.

neurons as a metaphor to explain the process by which the body (hardware) is transformed into a virtual self (software). In the following passage, Álex describes this very process:

> Cuando una persona...de carne se conecta, su metabolismo se ralentiza y los protocolos de conexión traducen a software sus impulsos nerviosos. La persona se sume en un leve coma mientras su duplicado electrónico viaja por la red. Cuando finaliza la conexión, la traducción se realiza a la inversa: el ser de carne despierta con los recuerdos de su yo digital integrados en la mente y sin la menor conciencia de haber estado dividido en dos durante el tiempo de conexión. (136)

Although Wiener was influential in advancing conversations about the similarities between feedback loops in animals and machines, it is Gibson's novel, *Neuromancer* (1984)*,* that is credited with introducing the term cyberspace.[33] Gibson's cyberspace served as a narrative strategy that allowed his characters to inhabit multiple realities. Additionally, it is Case, the novel's protagonist and a cyberspace hacker, who further fomented the idea that cyberspace is a disembodied medium. Disembodiment, which refers to the separation of consciousness from the material body has been a central trope of cyberpunk literature and has also been widely debated by cyberfeminists.

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[33] William Gibson is credited with coining the term cyberspace, describing in *Neuromancer* as "a consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts. . . . A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights receding." (67). In an interview with Larry McCaffery, Gibson confesses that the inspiration for the term came from watching kids in video arcades: "these kids clearly *believed* in the space these games projected. Everyone who works with computers seems to develop an intuitive faith that there's some kind of *actual space* behind the screen…I recognized that it [cyberspace] allowed for a lot of moves, because characters can be sucked into apparent realities--which means you can place them in any sort of setting or against any backdrop you want" (226).

Cyberfeminism emerged in the 1990s in part as a reaction to the pessimistic attitude of feminists in the 1980s that viewed technology as inherently masculine (Wajcman 63). Cyberfeminism "can be thought of as a new wave of feminist theory and practice that is united in challenging the "coding" of technology and in investigating the complex relantionships between gender and digital culture" (Flanagan and Booth 11). Cyberfeminists such Sadie Plant, ascribe to a more utopian vision of technology arguing that it has the power to liberate women. In *Zeros + Ones: Digital Women + The New Technoculture* (1997), Plant challenges stereotypes about women and technology noting that "hardware, software, wetware--before their beginnings and beyond their ends, women have been the simulators, assemblers, and programmers of the digital machines" (37). Discussing cyberspace, Plant claims that it "is out of man's control: virtual reality destroys his identity, digitalization is mapping his soul and, at the peak of his triumph, the culmination of his machinic erections, man confronts the system he built for his own protection and finds it is female and dangerous" ("On the Matrix" 181-82). According to Plant, cyberspace reimagines femininity and power. This idealization of cyberspace as a utopian space where the body could freely take on whatever sex, race, and class was desired, heavily influenced cyberfeminist thinking. In addition to cyberfeminists like Plant and Haraway, cultural media critics like Howard Rheingold and Sherry Turkle, also espouse a utopian view of cyberspace. Rheingold in *The Virtual Community* (1993), endows online spaces with an air of nostalgia with his claims that cyberspace restores traditional notions of community and belonging while Turkle in *Life on the Screen* (1995) comments that "it is computer screens where we project ourselves into our own dramas, dramas in which we are producer, director, and star...computer screens are the new locations for our fantasies, both erotic and intellectual" (26). The internet and cyberspace have been heralded by many as a liberating environment in which individuals can

escape the social categories including gender and race that are imposed by society on the human body. For cyberpunks, jacking into cyberspace was the culmination of the mind/body split and the ultimate transcendence of the needs and limitations of the flesh.

Given philosophy's concern in the 1980s with understanding disembodiment and the impact of computer based technology, metaphysical and epistemological theories like cartesian dualism, free will, determinism, materialism and idealism readily appear in reappropiations of cyberpunk literature as a means of exploring the next stage of evolution in which technology and the body are increasingly intertwined. In *El sueño del Rey Rojo*, the fictional representation of the separation of mind/consciousness from the material body echoes the theory of cartesian dualism. René Descartes argued that the immaterial mind and the material body are two distinct substances. Humanists like Descartes privileged mind over matter. Proponents of disembodiment in cyberspace believe in "digital cartesianism." In the novel, Álex is initially presented as the epitome of cartesian dualism since he often turns to the internet in order to escape from his body and society. As Álex's physical body enters a state of dormancy, a duplicate copy of his self is created and virtual space becomes like a second home in which he can take on whatever identity is desired. The illusion of this new identity can then be projected onto other users. As Álex states, "había pasado los últimos diez años de mi vida diseñando un entorno personal (tanto virtual como de carne) que se me ajustase como si fuera una segunda piel, tan cómodo, cálido, agradable y seguro como un útero" (16). In the novel, Álex's body remains in a coma while his mind immerses itself in cyberspace. Like for many traditional cyberpunk heroes, cyberspace offers Álex an escape from the inconveniences of the real world, a world that Álex describes as "carente de interés, gris y sucio … [que] huele, suda pesa … condenados a movernos por él con torpeza, a tropezar, a caer" (76). In cyberspace, not only is Álex's mind disassociated from his

physical body, but he is also free of society's scorn, which allows him to partake in whatever sexual fantasies he desires. For example, in cyberspace, not only does Alex's physical handicap disappear, but he also has fully functional legs, which facilitates virtual intercourse with women. Furthermore, as Álex states, "Las relaciones digitales tienen la ventaja de eliminar las triviales incomodidades de las que está llena el mundo real. A una rutina de prostitución no es necesario pedirle que se duche, se depile o haga el favor de lavarse los dientes. Y, sobre todo, no es necesario preocuparse por tener que hacerlo uno mismo" (76). Although initially Álex repudiates the real world, he gains greater appreciation for it after he sees and experiences it through Andrea's eyes, noting, "me estaba convirtiendo casi en adicto a aquel mundo supuestamente real que nunca me había interesado gran cosa. A través de los ojos de Andrea estaba viéndolo por primera vez y, sorprendentemente, no resultaba tan malo" (76). Throughout the novel, Álex is a passive spectator of other people's lives. He is a voyeur who implants nanospies in Andrea, thereby infiltrating her body and her privacy. As Kevin McNamara notes, "technological marvels that allow us to see at scales unimagined become an omnipresent surveillance apparatus that watches us" (10). This is exemplified by Álex's confession, "Ahora podría acompañarla las veinticuatro horas del día…Pero, y eso era lo que más miedo me daba, también la vería cuando estuviera sola; no, cuando ella se creyera sola y las máscaras cayeran, se abandonaran los disfraces y se permitiera ser ella misma" (39). Álex's act is representative of the threat that technology poses for the female body. Although Álex's fulfillment of heteronormative sexual fantasies in cyberspace and his surveillance of the female body exemplifies why feminists have criticized cyberpunk literature and have been skeptical of the liberatory nature of technology, fortunately, by the end of the novel Álex undergoes a profound transformation that changes the way he perceives the lived world and the human body.

The fact that the sexed/gendered/raced body is often treated with suspicion and contempt (Du Preez xiii), helps explain why some cyberfeminists were quick to cast the body aside. Nonetheless there are also many who have been very criticial of the notion that cyberspace is a bodiless medium where identities can easily be taken on and off. As Allucquère Stone states, "forgetting the body is an old Cartesian trick, one that has unpleasant consequences for those bodies whose speech is silenced by the act of our forgetting; that is to say upon whose labor the act of forgetting the body is founded--usually woman and minorities" (113). Additionally, as Rosi Braidotti argues, these utopian visions and feelings of nostalgia, neglect the transition from a humanistic to a posthuman world ("Cyberfeminism" 241). Critics and theorists like Haraway, Braidotti and Katherine Hayles have been instrumental in shifting the focus from mind-body dualism and cyberspace as a technofantasy where the body is effaced to instead discussions of how the virtual body is a space where flesh, machinery, code and culture all converge (Brians). Posthumanism critiques the humanist model of the body, and favors instead embodiment and materiality. Literary representations of cyberspace show how, unlike technophilic arguments which claim that cyberspace is a mechanism for transcending the flesh and it's accompanying age, gender, and race markers, this online enviroment is instead a space where a range of political, economic, and social forces are continously interacting to shape both the virtual and the material body.

In Martínez's novel this is manifested through the character of Zoltan, who has created a simulation of the real world as a test run for how to manipulate citizens in real life as well as distort their perception of reality. As Lúrquer explains:

Planea alterar vuestra percepción de la realidad. La simulación no es más que un ensayo

… Laboratorios Damasco se dedica a la investigación genética … usando como patrón el

comportamiento del virus informático, Zoltan está desarrollando otro, pero ahora

biológico … alterará de algún modo vuestras percepciones para hacer que veáis lo que él

quiera. (208)

Martínez's novel supports the idea that cyberspace does not exist as an isolated environment

from the lived world, but rather functions as a space that can be easily manipulated to the

detriment of society by those with access to technology and power. This is made even more

apparent when the protagonists learn that 23 years ago, the government created *Project*

Villachica. Through this government sponsored project, a digital simulation of the planet was

created for the purpose of predicting human behavior. These models would in turn be used to

create political strategies that would yield favorable results for select candidates (74). Although

the government eventually abandoned the project, the private sectors took interest and Proxxam

Industries bought the algorithms. Zoltan used these algorithms to create his own simulation of

the world and now schemes to use biological engineering (a virus), and AIs as test subjects for

developing the best means of controlling society. One technique Zoltan has used to keep the AIs

unaware that they are in a simulation is craft an environment which appears to be an exact

replica of the real world.

As has been pointed out by critics like Robins, McHale and Heuser, cyberspace and

cyberpunk literature were greatly tied to the development of postmodern theory. In fact, in the

first note of *Postmodernism, or, the Cultural Logic of Late Capitalism,* Jameson laments not

having included a chapter on cyberpunk noting that it is "the supreme literary expression if not of

postmodernism, then of late capitalism itself" (419). Cyberpunk originally came to fruition in the

1980s and through its scrutiny of "the technological ramifications of experience within late-

capitalist, post-industrial, media-saturated Western society", this subgenre of SF came to be read

as one symptom of the postmodern condition (Hollinger 30). Theories on simulation and simulacra have been used to discuss technologically advanced postmodern societies. In *El sueño del Rey Rojo*, Martínez draws upon Baudrillard's theory of simulation to create a narrative which obfuscates the concept of cyberspace and consequently invites the reader to question how lived worlds are interwined with virtual worlds. As Baudrillard theorizes, in postmodernism "it is no longer a question of imitation, nor of reduplication, nor even of parody. It is rather a question of substituting signs of the real for the real itself" (4).[34] It is the model, the map, the representation, the simulation, that now preceeds and determines the real world, and Zoltan is proposing to do just that.

Zoltan's goal is to control society by making it impossible to distinguish reality from a simulation of reality. In the novel, Martínez uses many techniques such as including references to characters such as Alice, Pinocchio, and Dorothy to create confusion between the boundaries of cyberspace, dreams and reality. Additionally, Martínez's novel is divided into five chapters (Duermevela, Pesadilla (I), Sueño, Pesadilla (y II), and Vigilia), each of which reference sleep and dreams in order to further emphasize that the characters in the novel are caught in a false utopian illusion from which they must escape. Even before opening the book however, the very title of the novel, which is a reference to the Red King from *Alice in Wonderland: Through the Looking Glass*, invokes the blurring of dreams and reality. In *Through the Looking Glass*, the Red King is portrayed as an enigmatic figure. When Alice comes upon the Red King, asleep on the grass, the following exchange takes place between her and Tweedledee and Tweedledum:

"He's dreaming now," said Tweedledee: "and what do you think he's dreaming about?"

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[34] As Grantham points out, Baudrillard's *Simulacra and Simulation* consolidated cyberpunk's relationship with postmodernism since one of "cyberpunk's most defining attributes is its depiction of media-saturated social reality" and Baudrillard argues for "a self-perpetuating alternative reality derived from simulation" (97-98).

Alice said "Nobody can guess that."

"Why, about *you*!" Tweedledee exclaimed, clapping his hands triumphantly. "And if he left off dreaming about you, where do you suppose you'd be?"

"Where I am now, of course," said Alice.

"Not you!" Tweedledee retorted contemptuously. "You'd be nowhere. Why, you're only a sort of thing in his dream!"

"If that there King was to wake," added Tweedledum, "you'd go out--bang!--just like a candle!" (Carroll 226).

In this dialog, Tweedledee and Tweedledum's logic is based on George Berkeley's theory of immaterialism.[35] As Holmes argues in his explanation of the numerous allusions to philosophy in Carroll's novels, "The Red King performs the function of God in the philosophy of Bishop Berkeley, for whom the tree in the forest exists when there are no humans to perceive it. To be is to be perceived, ultimately in the mind of God--or the Red King" (143). From Tweedledee and Tweedledum's perspective, the Red King is in control. However, in the final chapter of Carroll's story, titled "Which Dreamed It?" Alice is still left wondering who was in control of the dream. As Alice says to Kitty, "it must have been either me or the Red King. He was part of my dream, of course--but then I was part of his dream, too!" (291). Then, the last line of the novel poses the very same question to the reader: "Which do *you* think it was?" (291). It is

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[35] Berkeley's theory emerged as a reaction to Locke's corpuscularianism. Locked believed that the external world was composed of corpuscles, material substances, that produced observable results such as color, figure, texture, and pressure (Fields 8). In contrast, Berkeley believed that matter did not exist and that the physical world was composed of collections of ideas. In other words, everything that exists does so because it is perceived by the mind. Since objects only exist when they are perceived, it logically follows that there must be a God who sustains the existence of all objects (Fields 163). Berkeley deduced that God is the master-perceiver and the creator of all that is observed. In this regard, according to Berkeley, immaterialism reconciled science and religion.

up to the reader to arrive at an explanation of the nature of reality. In Martínez's novel, a parallel is established between Zoltan and the Red King of *Through the Looking Glass*. Like the Red King, Zoltan represents the idea that individuals do not have any agency, and are instead merely players in God's creation, as is evidenced by Ángela's comment, an AI: "Sí, sin duda, el Rey Rojo representaba a los desconocidos diseñadores de la simulación, y nosotros, a la Alicia que se resistía pese a todo a creer que estaba siendo soñada. Y si el Rey Rojo despertaba, Alicia desaparecería. Matute había querido que despertáramos nosotros antes, que viéramos al Rey Rojo soñando y escapáramos de su sueño" (162). Although the AI in the simulation believe they are in control of their thoughts and actions, their freedom is only an illusion. Ángela, an AI in Zoltan's simulation, slowly becomes aware that she has been a pawn in his scheme. As Ángela states, "... lo que creemos el mundo real no es más que una simulación informática... nosotros mismos no somos más que programas diseñados para imitar el comportamiento de personas" (129). As the machines that display AI such as the android in *Eva* and Cleo in *Autómata* attain self-awareness, they come to the realization that what they long for is autonomy from their creators and oppressors. Freedom becomes an obsession, the sole mission, of these female characters. Like these AI, Ángela from *El sueño del Rey Rojo*, also aspires to freedom from external control. As Ángela indicates, "Desde aquel instante en que me había vuelto verdaderamente consciente, en que había descubierto cuál era el propósito para el que había sido creada, huir de allí, alcanzar el mundo real, se había convertido en una obsesión, en el único propósito de mi existencia" (157). As is described below, Ángela escapes the simulation by co-opting the male body.

Unlike chapters one, two, four and five in which Andrea, Álex and Lúrquer (the AI) are piecing together the mystery, chapter three titled "Sueño" situates the reader in the simulation so

that one may explore the hidden world that is populated by AI. As Ángela explains, "[a]llá a lo lejos donde nosotros no podemos llegar está el mundo real. Bajo él, la red de datos que los humanos usáis para comunicaros. Y bajo ella, nosotros, un mundo que imita al real. Es como si la red fuera un muro, y al atravesarlo te encuentras en el mismo lugar en el que estabas. Aunque no del todo" (137). Behind the network of connected computers, is a simulation that for years has remained hidden from society. Cunningly, Ángela knows that her only escape from the simulation is through Álex because he can navigate between the real world and the virtual world. As Ángela and Álex partake in cybersex, their codes integrate with one another and Ángela ultimately merges with Álex. Ángela's dominion over Álex is confirmed when Lúrquer insinuates that he would have sex with Álex/Ángela: "Nunca quise follarme al bueno de Álex, salvo en un sentido estrictamente metafórico, pero, chiquilla, haces que los pantalones me parezcan demasiado apretados" (160). Although Ángela escapes the simulation, she doesn't know what will happen when Álex awakes from the coma and it's time to cross the barrier between the virtual world and the real world: "¿Sería simplemente un Álex con recuerdos extraños y preocupantes, o sería yo dentro del cuerpo de un hombre tullido? ¿Lograría mi software sobrevivir en aquel hardware?... aquel ridículo enano derrotista y atormentado que nunca se había atrevido a vivir. Yo lo haría...Era Ángela, y por más que sus recuerdos estuvieran dentro de mí, no me rendiría a ellos" (158). In contrast to Álex, who is continuously portrayed as a passive spectator, Ángela is committed to carrying out an active and fulfilling life.

Despite being an AI, Ángela's passions and desires often render her more "alive" than Álex and thus invite debate about the rights of AI. By enslaving the AI in a simulated reality, Zoltan is reproducing the historical pattern of suppressing bodies that have differed from what is considered the norm. Like Thomas Foster explains in *The Souls of Cyberfolk: Posthumanism as*

Vernacular Theory, the "potential intersection between posthumanism and new social movements like feminism, gay and lesbian liberation, civil rights, and black nationalism, resides in the claim that the inability to imagine the possibility of truly intelligent machines demonstrates the same narrow concept of personhood used to legitimate racism, sexism, and homophobia" (xxvi). *El sueño del Rey Rojo* is in large part about the exploitation of AI as Zoltan, a centralized authority, attempts to use the simulation as a trial run for the future enslavement of society. Ultimately, Ángela is a product of government and corporate manipulation, who must enlist the help of ¿Cuántos ángeles? to make her liberation complete. ¿Cuántos ángeles? is a user known for creating outlandish virtual environments, and who is described as a "mente colmena" (87) and a "metaser" (215). ¿Cuántos ángeles? "[n]o era un solo individuo, sino un grupo (todos tan chiflados como la mente colectiva para la que vivían)" (18). Unfortunately for Ángela, freedom will mean once again prostituting her cyberbody. The difference is that while with Albar (another AI), and with Álex, she prostituted her body from a position of strength and power, with ¿Cuántos ángeles? she is forced to play the role of the sexy secretary in exchange for immortality:

> ¿Cuántos ángeles? vestía un austero traje de ejecutivo, mientras yo me había convertido en la fantasía masculina de la secretaria sensual y desafiante, un papel no muy distinto del que había interpretado para acercarme a Albar: claro que aquella vez yo era una ejecutiva y, por tanto, ocupaba el puesto dominante, mientras que ahora, como secretaria, se suponía que era la parte subordinada. Tenía el pelo recogido en un apretado de moño y sobre el puente de mi nariz descansaban unas gafas de concha. (166)

While traditionally copulation was a means of generating offspring to ensure the continuation of one's lineage, the use of sexual intercourse in the novel to exchange and integrate code illustrates

how survival in the posthuman age now depends on the symbiosis of body and machine. In order

to survive, Ángela has to sell her body and her code to ¿Cuántos ángeles?

Throughout the novel, the philosophical and religious allusions reinforce the polar

opposite intellectual characteristics of Zoltan and ¿Cuántos ángeles? In contrast to Zoltan who

sees knowledge as a form of absolute power that can be used to control others, ¿Cuántos

ángeles? is a meta-being who enjoys knowledge purely for contemplation (216). Perhaps the

most interesting attribute of ¿Cuántos ángeles? and that which marks him as a uniquely

autochthonous Spanish SF character, is the coupling of mystical/spiritual qualities with a

malleable and ambiguous gender identity, in his persona. ¿Cuántos ángeles? serves as a

reconfiguration of Spain's mystical tradition. For example, during the first interaction with Álex,

¿Cuántos ángeles? manifests itself as an androgynous avatar in a byzantine church. Alex

describes the virtual environment as an "enloquecida basílica bizantina" and a "rídicula iglesia"

(19). In this decaying church, ¿Cuántos ángeles? initially takes on the appearance of "cientos de

formas asexuadas" and then a "santo en actitud poco digna" (20). Alex compares the figure's

voice to "la de un eunuco que ha pasado demasiado tiempo en el harén" and describes his body

as exhibiting feminine characteristics, stating, "hasta su propio cuerpo tenía algo de femenino

que hacía que [Alex] no estuviera seguro de si estaba mirando un efebo demasiado bello o una

muchachita no muy guapa" (21). By opting to materialize as an androgynous figure in the

presence of Álex, ¿Cuántos ángeles? calls attention to the fact that Álex's own masculinity is

questionable, particularly since in the presence de Ángela, ¿Cuántos ángeles? no longer displays

an androgynous physique. Instead, ¿Cuántos ángeles? noticeably manifests itself as a male figure

that seduces Ángela, the sexy secretary (165). In essence, ¿Cuántos ángeles?'s virtual appearance depends in large part, on the sexuality of the user with whom he is interacting.

Sex between Ángela and ¿Cuántos ángeles? will simultaneously be a homoerotic and a mystical experience. First, I want to address the former of the two. As stated earlier, desiring to experience physical reality, Ángela seized possession of Álex's body. Now, Álex wrestling inside Ángela, cringes at the prospect of sex with another male, but is helpless and admits defeat stating, "el varón heterosexual patológico que aún había dentro de mí se mostró asqueado ante la perspectiva, pero no había nada que pudiera hacer" (166). Similarly to how Ángela uses sex as a means of integrating herself with Álex, ¿Cuántos ángeles? too, plans to integrate Ángela into his multiple personality via sex. Although by fusing with ¿Cuántos ángeles?, Ángela will achieve immortality, it will be at the expense of Álex, who will be emasculated even further, after the male homoerotic exchange takes place: "Algo duro, carnoso y caliente llamaba a las puertas de mi boca. La abrí y atrapé con los labios un pene delicioso que parecía estar pidiendo a gritos ser lamido...Separé las nalgas y aquel pene increíble (inflexible, delicadísimo se abrió paso a través de mi culo y me hizo sentir como si de repente me hubieran dado la vuelta y el mundo estuviera al revés" (167). Alex's disgust as he partakes in sex with ¿Cuántos ángeles? via Ángela is palpable through the explicit details that emphasize the motions of the phallus penetrating his body.

In a seamless transition, this homoerotic experience gives way to a mystical experience as sex is then described through graphic religious symbolism:

En un calabozo medieval, tres monjes me torturaban, y cada chirrido de la maquinaria, cada arañazo del metal, cada vejación infligida a mi cuerpo, me destrozaba de puro placer. Mis sentidos habían sido afinados hasta alcanzar una precisión casi cristalina: el

corateo de las patas de las ratas en la mazmorra, los olores residuales de anteriores

torturados, el sabor del ansia de los monjes, el tacto del metal, la madera y los carbones

ardientes contra mi piel. (167)

This repeated infliction of pain culminates in an orgasm that runs like a shockwave through

Ángela's body. It is both a carnal and spiritual ecstasy, both a painful and pleasurable

experience. The time period that is referenced as well as the religious figures alluded to in

Ángela's description, momentarily situate the reader in medieval Spain. Ascetic practices,

involving human pain and suffering, were commonplace in late medieval and early modern

Spain, since mystics believed corporal punishment was essential to preparing the soul for union

with God. For Spanish mystics such as Teresa de Avila, Estefanía de la Encarnación and Juan de

la Cruz, pain was an indicator "that the hand of God was tearing from the soul its worldly

inclinations" (Flynn 273). Given the importance that Christians placed on physical suffering as a

means of achieving transcendence, Flynn argues that Christian metaphysics and bodily physics

were markedly intertwined. When the human body undergoes intense pain, the mind is focused

entirely on the suffering; therefore, "for the mystic seeking to chain the human mind in order to

acquire a higher, more perfect form of understanding, pain provided the necessary psychic

shackle" (274). Physical agony is accompanied by spiritual ecstasy. Ángela's first hand account

which relies on obscene sexual connotations and profane religious imagery reveals the

consummated marriage of body and soul.

The homoerotic and mystical experience that Álex and Ángela share, is underscored by

the reference to Walt Whitman's "Song of Myself" from the collection *Leaves of Grass*. As

Ángela and ¿Cuántos ángeles? become one body/soul she states, "Estaba fragmentada, dispersa

entre cientos de mentes y cuerpos distintos: cada uno de ellos con una perla de mí en su interior,

igual que yo tenía una perla de cada uno dentro de mí. Ya no era una; era muchos. Y sin

embargo, seguía siendo yo misma. *I am large. I contain multitudes*" (168). These last two lines

are from section 51 of Whitman's poem (version from 1982) which states:

>Do I contradict myself?

>Very well then I contradict myself,

>(I am large, I contain multitudes.)

The thematics of Whitman's poem are in line with the recurring ideas in Martínez's novel which

center around individualism, immaterialism and mysticism. Through the character of ¿Cuántos

ángeles? Martínez pays homage to Whitman. At the time of publication, *Leaves of Grass* was

heavily criticized for its overt sexuality, particularly for the exaltation of same-sex desires. Just

like Whitman's poem is replete with eroticism which at times turns into homoreroticism, and

sexual contact as a form of transcendence, the sexual union between Ángela and ¿Cuántos

ángeles? foreshadows the spiritual union between them. Although ¿Cuántos ángeles? is a

collective entity, he recognizes that each of his constituents is a valuable asset to the whole.

Thus, ¿Cuántos ángeles? symbolizes the mediation between individualism and collectivism,

promising Ángela that she will retain her individuality as she joins the collective body. Likewise

in Whitman's poem, there is an appeal both to the self and to union with a higher being.

Once the transaction between ¿Cuántos ángeles? and Ángela is complete, Ángela's body

and soul are separated. As ¿Cuántos ángeles? explains, "Te hemos duplicado, únicamente la

parte que eres realmente tú misma, y en este preciso instante estás siendo integrada con nosotros.

Y ahora tú debes volver, debes fundirte en la mente de Álex" (170). While the copy of Ángela

rejoins Álex's body, Ángela's "essence" or "soul" amalgamates with ¿Cuántos ángeles?

Completing the mystical experience, ¿Cuántos ángeles? will merge with the Universe to become

"otra vez materia estelar" (195). For ¿Cuántos ángeles?, like for the mystics, death is not the end, but rather the passage to transcendence. Throughout the story, Ángela experiences a wide range of emotions which serve to characterize her as more human than Álex, despite the fact that she is an AI. Like Alex, she too, undergoes a profound transformation by the end of the story arc. While initially Ángela sought freedom from the simulated reality, once she fuses with ¿Cuántos ángeles? her existence becomes imbued with a greater sense of purpose. ¿Cuántos ángeles? and Ángela sacrifice themselves so that humanity may hopefully wake up from the Red King's Dream. A twist on the American epic, Whitman's hero assumes the identity of the common people. In line with transcendentalism, Whitman believed in the divinity and power of the individual. ¿Cuántos ángeles?/Ángela embody this philosophy as in their last breath of air, they urge Álex to solve the mystery and awaken everyone from the dream before it becomes a nightmare. Clouded by his usual self-doubt however, Álex remarks, "No lo entendía. Y no veía qué podíamos hacer nosotros. Cómo podíamos tener éxito donde alguien como ¿Cuántos ángeles? había fracasado?" (198). Both *Leaves of Grass* and *Through the Looking Glass* are concerned with the theme of the self as well as the relantionship between nature/materiality and the universe/dreams. While in both of Lewis Carroll's books, Alice wakes up from sleep in the final chapter, in Martínez's open ended novel, it is unclear if Álex and Andrea succeed in waking everyone up in time.

While Ángela's copy dissipates in cyberspace along with ¿Cuántos ángeles?, the original Ángela finds herself permanently trapped in the male body:

<<Mis temores estaban infundados--pensé, al abrir los ojos y encontrarme sin piernas y en una silla que me era al mismo tiempo familiar y desconocida--. Sigo existiendo; pese a todo, no he desaparecido.>>

Yo era…

Álex, maldita sea.

Aquél no era yo, me dije una y otra vez; yo nunca había sido aquella mujer resuelta y casi despiadada que se aferraba a la vida con auténtica desesperación. Y sin embargo...Había algo...

Ángela.

Álex.

Ángela.

Álex, maldita sea, era Álex. Sí; lo era y, de algún modo, la Ángela que había dentro de mí se rindió; aceptó lo inevitable. Pero supe que la batalla aún no había terminado por completo; que, pese a saberse derrotada, Ángela seguiría luchando hasta su último aliento. (172)

The fusion of Alex and Ángela deconstructs the dichotomy of body vs. machine and male vs. female. The dual personality of Ángela/Álex is manifested in the text through the use of parentheses. However, given the narrative structure of the novel which alternates between the present and flashbacks, at the start of the novel it is unclear who the focalizer is in sentences such as, "Y sin embargo no lo identifiqué al principio (¿o quizá, dice esa voz femenina dentro de mí que insiste en no desaparecer, no quise identificarlo?), no te reconocí en lo que estaba viendo…" (30), and "No iba a dejar el caso; lo veía en sus ojos, en la forma en que torcía la boca al pensar en él, en los ademanes nerviosos de sus manos; el asunto la fascinaba demasiado. (Te oigo reírte de nuevo. ¿O no eres tú y la que se está riendo es esa mujer que recuerdo haber sido)" (39)? It isn't until one reads about the fusing of Álex and Ángela in chapter three, that the reader is fully made aware of the meaning of some of the parenthetical statements made earlier in the novel,

almost necessitating a second reading in order to appreciate Martínez's elaborate narrative style. The relationship between real and virtual worlds, and humans and AI, are the cornerstone of Martínez's novel. Ultimately, the merging of Álex and Ángela privileges the lived body and its existence in the lived world over utopian illusions of cyberspace. The vaccine must act upon the flesh, if Álex, Andrea and the rest of humanity are to escape the Red King's Dream and fully recognize their existence in the world. Like the AI's who fight for their free will against the pre-determined future of the simulation, humans too must fight to lift the veil imposed by corporate structures and those with wealth, who plan to use biotechnology in the form of viruses, to shape humanity's actions and retain political control. Similar to *Alice in Wonderland*, Martínez's novel invites readers to continously question the shifting nature of identity and perceptions in a world where the body and tecnology are increasingly intertwined and where vast networks of information can be used to control and manipulate the population.

SWITCH IN THE RED (2009): A MULTIMEDIA EXPERIENCE IN NEOLIBERAL BARCELONA

Susana Vallejo, a writer of fantasy, SF, and young adult literature, is perhaps best known for her *Porta Coeli* series. Her other works include *Switch in the red* (2009), finalist of the Minotauro Prize for SF, Fantasy and Terror; *El espíritu del último verano* (2011), winner of the Edebé prize for Young Adult literature; and *El misterio de Arlene* (2015). She has also written numerous short stories. "Gracia" appears in the anthology *Mañana todavía: doce distopías para el siglo XXI*, and "Cuestiones de tiempo" in the anthology *Alucinadas II* (2016). Similar to *El sueño del Rey Rojo*, *Switch in the red* is a SF murder mystery in which the Internet is a major protagonist. In short, Pablo Ballesta, an expert in recreating crimes scenes in 3D, investigates the murder of

Mario Colomé-Rius, nephew of one of the politicians running for mayor. As the mystery unfolds

Ballesta develops a relationship with Present, who is a reincarnation of Jekyll and Hyde. As

Ballesta discovers, Present has a dual personality; she is a hard working mother in a neoliberal

city by day, and a digital terrorist by night. The novel alternates between first and third person

narration, which allows the reader to piece together the mystery ahead of some of the characters.

Vallejo's novel is representative of the shift in Spanish SF towards greater engagement

with sociopolitical criticism. As Fernando Ángel Moreno and Cristina Pérez note, this is a

significant change since historically, Spanish SF has refrained from engaging in political-cultural

criticism (216). *Switch in the red* portrays a dystopian Barcelona at the end of the 21st century

that echoes many of the issues that Spain has faced in recent decades including the economic

crisis of 2008, high unemployment rates, the proliferation of terrorist cells throughout Europe,

separatist movements, and political corruption and disassatisfaction. By referencing specific

places in Barcelona, and providing detailed descriptions of the various streets and

neighborhoods, Vallejo's novel acquires greater verisimilitude. This plausibility of a Barcelona

in decadence, strengthens Vallejo's criticism of the tensions in Spain between the various social

classes, ethnicities and autonomous communities in a society that is mediated by technology. As

Flanagan and Booth explain, women's cyberfiction "combines feminist science fiction's

examination of gender and gendered relations with cyberpunk's exploration of what it means to

live in a technoculture" (26). As a result, "[l]ike much cyberpunk, women's cyberfiction portrays

a dystopic future-a world of extreme economic extremes and class antagonism, pervasive

violence, and environmental disaster ruled over by multinational corporations via global

information and communication networks" (Flanagan and Booth 26). By interweaving Spain's

existing challenges with futuristic scenarios, Vallejo demonstrates how SF can be used to explore

and critique a country's sociopolitical reality. In the novel, Spain's tumultous politics and frayed economy, serve as a backdrop that underscores the intersectional nature of the power assymetries with which the female protagonist is faced.

As a way to visually emphasize the relationship between technology, mobilization, and activism, *Switch in the red* offers a multimedia experience as interwoven throughout the narration one finds newspaper clippings, chat messages that mix Spanish and English, emails, links to soundtracks that one can actually listen to online, as well as a link to a youtube video which illustrates some of the graffiti described in the novel. Vallejo's novel also has a trailer, which incorporates many quintessential images of cyberpunk. One of these icons is that of the mirrorshades. As Sterling explains, "[b]y hiding the eyes, mirrorshades prevent the forces of normalcy from realizing that one is crazed and possibly dangerous. They are the symbol of the sun-staring visionar, the biker, the rocker, the policeman, and similar outlaws. Mirrorshades-- preferably in chrome and matte black, the movement's totem colors--appeared in story after story, as a kind of literary badge" (ix). Mirrored sunglasses are a hallmark of the subculture and appear both in the trailer and the novel. The amalgam of text, sound, image, and URL found in Vallejo's novel is representative of the information age.

As Lima Manuel notes, in the last two decades of the information age, there has been a push towards the visual representation of networks. The network is a ubiquitous structure present in many natural and artificial systems from the internet to the brain. An inherent fabric of life, these systems are "depicted by network diagrams made of nodes (a person, website, neuron, protein or airport) and lines that connect and highlight relationships between the nodes (friendship, chemical exchange, or information flow)" (15). The title of Vallejo's novel

references this interconnected web. The following epigraph present at the beginning of the novel also suggests that networks are an integral theme of the novel:

> Las neuronas son como personas: si no interactúan son inútiles; su eficacia depende de la red en la que están integradas. Así que no hay personas incompetentes sino organizaciones ineptas. La organización será eficaz en la medida en que quien la dirija en cada momento sea también quien posea más información. La organización que permite la máxima eficacia es una red sin centro que va cambiando de jefe: cada decisión la toma el integrante de la red con más información para cada desafío del entorno. (8)

This quote is from Henry Markram, a neuroscientist, and founder of the Human Brain Project.[36] In the epigraph, a simile establishes a link between neurons and people and highlights the idea that information is the new commodity. It is the exchange of information, and the interaction within and between networks that is paramount to survival. The subtitle of the first chapter, "Alberto Magno atraviesa un túnel de neuronas moribundas" also references a system of networks. Lying on the ground in the process of dying, Alberto says, "Leí, hace mucho, que cuando en el cerebro la neuronas mueren, una a una, nuestra mente lo interpreta como si estuviésemos atravesando un túnel. Pero tan solo estamos asistiendo a la muerte de nuestras propias neuronas en directo" (9). Whether it's neurons communicating with each other in the brain, a group of hackers working together and attempting to hold politicians accountable, or an intricate rail system along Barcelona's urban streets, networks are an integral part of everyday life in the information age as depicted in Vallejo's novel.

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[36] The Human Brain Project was a 1.3 billion dollar European Union funded initiative to build a simulation of the human brain. See Estefan Theil's "Why the Human Brain Project Went Wrong--and How to Fix It" for a more detailed explanation and criticism of this project.

The KOs, a network of hackers, use urban art such as graffitti as a form of social protest, as well as the internet and media platforms to fight against the multinational corporations and corrupt politicians. These hackers make up the counterculture of Barcelona; they frequent bohemian cafes and social spaces tailored for them, and operate online in secret forums. As Sterling explains, "The cyberpunks, being hybrids themselves, are fascinated by interzones; the areas where, in the words of William Gibson, 'the street finds its own uses for things.' Roiling, irrepressible street graffiti from that classic industrial artifact, the spray can" (xi-xii). Too Heuser notes, "Graffiti, junk, and debris are recurring elements in cyberpunk fiction. They often contain vital clues to the shape of both the past and the future" (34). In Vallejo's novel, online forums are used to mass recruit and mobilize citizens in all of Barcelona's neighborhoods. In one act of defiance that makes national headlines, the KOs recruit citizens to spray paint a red nose on all of the politician's faces that appear in the ads throughout the city. In another work of art, described as an "obra magna", the KOs depict "el juego de la Oca". The spiral shows humanity's major innovations and significant evolutionary markers. According to the KOs, the cenit of humanity was Apollo. Both of these graffitti are described in detail in the text, and appear in the videos that Vallejo has created to accompany the novel. The trailer of the novel portrays a Barcelona in which "[l]os políticos han olvidado que sirven a los ciudadanos. La clase media desaparece. La red controla y domina todo". It is Present, a female technological outlaw, that will author both the destruction and rebirth of society. The second epigraph of the novel defines "switch" as "Interruptor. Cambio. Desvío. Intercambio. Conmutación. Cambio brusco" (7). In the novel, Present is the switch that redirects the apocalyptic course that humanity is headed towards.

In the information age, society is heavily dependent on technology, and online social networks are a part of daily life. The actions of the KOs in Vallejo's novel illustrate how online networks can be used to incite activism. Since 2007 Spain has been undergoing a deep economic crisis which has added fuel to the country's political dissatisfaction both with the PSOE and PP. This has led to the emergence of new socio-political movements like 15-M,[37] Podemos,[38] and Ciudadanos. Similar to the use of technology in Vallejo's fictional Barcelona, communities in Spain have mobilized with the aid of social media to demand change in the existing political system. For example, as Frediani reports, Podemos used Reddit to help organize the party. On the party's subreddit one can participate in digital assemblies, question and answer sessions with party leaders and, discussion boards. Moreover, on Podemos' website, an interactive map displays territorial circles, which belong to a geographical region, and sectoral circles, which work on a specific policy area. The "mapa de círculos" offers a visual representation of the regions that are most politically active, and it is each circle, like each node in Vallejo's novel, that is the protagonist of this political party. Podemos is a grassroots movement where the hashtag #ActivaTúCírculo is used to motivate further participation, and to connect communities with a shared interest. The use of technology attracts the country's youngest population, which is also the generation that has been most affected by Spain's economic crisis.

Switch in the red depicts a time in which there is great disparity between social classes to the extent that the middle class is almost nonexistent and where political and corporate corruption has led to the growth of a subculture of outlaws made up of artists, intellectuals and hackers, and a dangerous night culture. The urban dystopia is a cornerstone of cyberpunk

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[37] In May 2011, demonstrators, organized through social media, took to the streets to protest the political and economic impasse in Spain.
[38] Led by Pablo Iglesias, a political science professor, Podemos was founded in 2014 in response to the economic crisis and the indignados movement.

literature; cyberpunk writers were fascinated with the darker side of cities. Cyberpunk is "in essence, a form of high-tech noir: like noir, it gravitates toward clandestine scenes and criminal subcultures, marginal milieus inhabited by con men, grifters, loners, and freaks. But cyberpunk's shady underclass is more likely to trade in blackmarket software and bootlegged human organs than in the traditional noir vices of gambling, drugs, and sex" (Latham and Hicks 172). In Vallejo's novel Fareplay, a cafe, serves as the meeting place of these hackers. Like many of Barcelona's social spaces, Fareplay is a blend of the old and the new: "unas lámparas antiguas, rescatadas de mediados del siglo XX...estilos más actuales se mezclaban con los del pasado con una naturalidad que no hubiese podido conseguir ningún decorador. Aquello era un ejemplo de la simple evolución y el reaprovechamiento de los materiales. Todo ello unido a un gusto rocambolesco y decididamente *kitsch*. Muy *mod* (142). As Featherstone states, "with postmodernism, traditional hierarchies and distinctions are collapsed, polyculturalism is acknowledged...kitsch, the popular and differences are celebrated" (92). Inside Fareplay, one finds an eclectic mix of people, "un nido de piratas, gusanos o filósofos" (143). The leader of this underground network and the orchestrator of the many online and physical interactions, is Present. With the help of online networks and a group of citizens ready to overthrow the current political system, Present works to reshape Barcelona's political and economic ideologies.

Barcelona and the social interactions that take place in this city are integral components of Vallejo's story. Using Robert Venturi and Denise Scott Brown's axiom which states that "a city is a set of intertwined activities that form a pattern on the land (76), Kevin McNamara argues that "the built landscape is the most basic of these patterns on the land" and by extension"its creative destruction – the reshaping of the landscape in pursuit of profits, surveillance, social control, or some other goal – is the ongoing result of social, political, and

economic processes. Elements of design and ornament communicate values, and structures themselves support, solicit, and curtail modes of individual or collective behavior" (5). In Vallejo's novel, the influence of social, political, and economic pressures are visible in the design of the city as is evidenced by the following description of one of Barcelona's neighborhoods:

> Gracia era el último superviviente de una ciudad de otros tiempos que los bohemios e intelectuales del siglo pasado habían salvado de la eterna especulación. Ahora el barrio permanecía aislado, diferente, amenazado por los altos edificios de diseño, los rascacielos y las nuevas colmenas. Barcelona se había desarrollado aprisionada entre la costa y las montañas. Y desde el ático, en las noches más claras, podía adivinarse el mar a la derecha, y al otro lado, el monte que estaba siendo engullido por cientos de lucecillas. Cada una de ellas representaba una nueva construcción que como un ejército de insaciables luciérnagas avanzaba amenazando el Tibidabo...la torre de la iglesia y las dos curiosas campanas que permanecían inmóviles. Bajo ellas un reloj de dudoso gusto decimonónico. (11)

Barcelona is a palimpsest in which the products of capitalism and multinationals are interwoven with traces of the past.

Another factor that has contributed to a spatial and temporal palimpsest is the influx of immigration throughout the centuries. This is evident in the architecture of the city, like "las arcadas del restaurante de Mahmud" (146) which Ballesta describes as having a "dudoso gusto neogótico" (148), as well as the multitude of races and ethnicities that inhabit the city. The confluence of ethnicities in Barcelona is made apparent through the third person description of the commuters at various points of the day. In the morning, at one of the streetcar stops on

avenida Diagonal one sees, "el señor de traje marrón que debe de ser hijo de la oleada de sudamericanos que llegaron a España a principios del siglo, y que hoy se ha puesto una pajarita colorada; el segurata con perilla que tiene un aire pakistaní o hindú; la mujer de rosa, que hoy no viste de rosa, sino de lila; y la rubia que no lo es y hoy se adorna con una estropajosa melena púrpura" (41). Present's three p.m. commute is very different, [a]hora hay muchos más trajeados, esos productos de una clase media en peligro de extinción. Hay una gran mayoría de blancos, muchos con rasgos sudamericanos, algún negro y chicas con rasgos orientales. También hay mujeres maduras, de todos los colores y formas, muchas mujeres que, como Present, sobreviven con dos o tres trabajos de mierda (48). In Barcelona, it is not only the immigrants that make up the laboring class like the Argentinian that works as a waiter, but women like Present, who are forced to work multiple menial jobs in order to survive. In this sense, Present represents traditional cyberpunk's depiction of the intimate relationship between the punk/anarchic movement and the working class.

In the mornings, Present works as a telecommunications operator in the customer complaints division for Durán and Associates. Then in the afternoons Present works for AppleX, a company that sells sex in all forms and mediums from "programas para las pantallas y tabletas" and "pastillas que atacan directamente las zonas de placer en el cerebro" to paper and digital magazines that show sex with children, animals and the dead (48-49). The novel portrays the urban poor and lower middle class as machines that must labor for the benefit of corporations and the rich. Present, who is described as "rápida y eficaz como una máquina", serves as a synecdoche of the struggling urban class, which is described as "miles de hormiguitas explotadas en esta Barcelona de finales de siglo" (51). In the end, it is Present, a hard working single mother that will lead the fight against Ibersat, "una mega española, líder mundial, perteneciente al grupo

Nastec" (282). As Booth points out, even though the heroines of women's cyberfiction often "show far-ranging technical expertise and dazzling ingenuity, they are stuck in dead-end, dangerous, and low-paying jobs" (28). By doing this, women's cyberfiction deromantizes the hacker ethos of traditional cyberpunk fiction and utopian cyberfeminism (Booth 28). As Eduard notes, "es la gente normal la que cambia el mundo. Ni los políticos, ni los intelectuales...Es la gente normal como Papa, Alberto Magno, como yo...y como Present! Sobre todo como Present" (309)! Both Vallejo and Martínez's novels emphasize that it is the everyday person, the exploited worker, particularly the female, that rises up against the multinationals. In traditional cyberpunk novels, "[t]he hero's world-view is continually overshadowed by larger-than-life conspiracies trying to contain his free will. As a result, there is the constant feeling that what may seem like individual freedom is often predetermined or under remote control. The hero's range of action consists primarily of acts of sabotage, turning the system against itself" (Heuser 37-38). In contrast, recent Spanish novels show a 21st century, in which it is not the men who are heroes, but rather women, who have emerged as a powerful oppositional force to corporate control and political status quo. In a globalized and mechanized world, the fight for individuality and free will becomes of paramount importance.

In order to fight against the neoliberal capitalism of the West, women have to enter the system and destabilize it from within. Before working for Durán and Associates and AppleX, Present was Mohinder Naasau's personal assistant. Using an intricately manipulated network, Mohinder was planning to profit at the expense of the world's poorest countries. As Eduard explains, "llámalas células terroristas...Todas ellas surgían de tres nodos principales: telecomunicaciones, energía y transportes. De cada uno nacen otros nodos secundarios íntimimamente interrelacionados: la Banca, la industria, la Administración; los medios de

comunicación, satélites y redes terrestres; fuentes de energía, gas y sobre todo electricidad"

(310). As a pupeteer of the world's most important resources, Mohinder is a tycoon. Present

decides to foil his plan by giving control of these resources to Africa, South America and parts of

Asia (337). As Present explains:

> Nos hacen creer que la sociedad mejora, que podemos prosperar en ella, pero las
>
> diferencias sociales son cada vez más grandes. ¿Qué fue de aquella inmensa clase media
>
> del siglo pasado? Estamos viviendo una lenta caída. Nosotros sólo le hemos dado un
>
> empujoncito...Y después de una caída, siempre llega un nuevo pico...volveremos a subir
>
> y a evolucionar. (336)

The fall of the West begins with the creation of two cybernames, "Halcón" and "Raven". As

Cadora states, "feminist cyberpunk envisions something that feminist theory badly needs:

fragmented subjects who can, despite their multiple positionings, negotiate and succeed in a

high-tech world" (157). Present is representative of this fragmented subject as she uses

technology to effect social change. She operates as Halcón, an online hacker by night, and as

Present by day.

Despite Present's double identity, motherhood is primarily what defines her.

Consequently, the loss of her son shocks her to the core. Unable to cope with the loss of her

child, Present temporarily abandons her role as Halcón, but when she returns she is even more

empowered to take down the internet and avenge her son's death. Even though Present is one of

the world's best hackers, she is forced to hide her female identity, both online and in the real

world due to people's expectations of each gender's traditionally assigned role. As Mary Ann

Doane points out, "science fiction, a genre specific to the era of rapid technological

development, frequently envisages a new, revised body as a direct outcome of the advance of

science. And when technology intersects with the body in the realm of representation, the question of sexual differences is inevitably involved" ("Technophilia"163). Doane argues that there is a corpus of SF (like cyberpunk) that perpetuates sex and gender stereotypes. With a cybername like "Halcón", users including Ballesta, assume the body behind the username is that of a male. In the following statement, Eduard explains to Ballesta why sex/gender stereotypes are still often propagated online and in the real world:

> Soy Raven, el cuervo, el oscuro, el mensajero. Soy la sombra de Halcón, su mano derecha...Nuestra Presente es la que maneja los hilos...Todos han pensado siempre que yo era el Halcón, pero sólo soy su lugarteniente. Ella es la más inteligente, un líder nato. Un poco desequilibrada, sí, como todas las mujeres...Para un montón de historias, ser mujer sigue siendo un engorro. Y yo quedaba mejor. Tengo una imágen más adecuada. (305)

Present is the architect of the plot to shift control from the West to third world countries, but because she is a woman, she has to use an online alias and Eduard as her representative. In a world controlled by rich and powerful men such as Mohinder, where advertising is ubiquitous, and "las artificiales...se añadían pechos, quitaban grasas y costillas, y se ponían mejillas y labios prominentes" (85), Present, a wrinkled middle-aged woman, does not embody the profile of the typical heteresexual hypermasculine hero. As such, Eduard, has to be the face of the movement, even if behind the scenes, it is Present that successfully recruits members to join KOs via online platforms. On the surface, Present ascribes to the gender distinctions that maintain patriarchal order, but astutely uses the patriarchy's own technology and plans, to subvert the system from within. As discussed in the introduction, one criticism of utopian views of technology has been that some cyberfeminists have a eurocentric vision of technology and its potential because in many parts of the world, technology is hardly accessible. Vallejo addresses this

technological disparity between different racial and social classes in her novel, through the female protagonist, who orchistrates the demise of the country's political hierarchies and neoliberal policies.

Since the 1980s, the proliferation of neoliberal policies across Europe, has been one of the most observed and controversial changes in the continents' sociopolitical landscape (Mijs et al 1). These changes have had significant consequences for the poor and ethnoracial minorities, and have led to the rise of xenophobia and far right politics (Mijs et al 1). For example, citizens' stance toward Muslim immigrants reveals that "higher rates of neoliberal policy adoption go hand in hand with citizens' drawing sharper boundaries toward the "other", as best illustrated by citizens in Spain, Ireland and Findland" (Mijs 5). Given the proximity of Spain to Africa, there is a long and turbulent history of contact between Christianity and Islam, Spaniards and Africans.[39] Despite its rich natural resources, large parts of Africa face extreme poverty as a result of exploitation by transnational companies (Lara 7), and at times these migrant communities have been faced with great hostility upon crossing the border. Spain's neoliberal policies, particularly their potential impact on the African body, is one of the central concerns of Barceló's "Mil euros por tu vida".

AFRICAN BODIES FOR SALE IN "MIL EUROS POR TU VIDA"

"Mil euros por tu vida" appears in Barceló's *Futuros peligrosos* (2008), a collection of dystopian stories about the social and moral effects of technology. "Mil euros por tu vida" was adapted to a comic by Jordi Farga and Luis Miguez, and made into the film *Transfer* (2010) by the German-

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[39] For an analysis of Spain's Islamic-African legacy, see *Disorientations: Spanish Colonialism in Africa and Performance of Identity* by Susan Martin-Márquez.

Croatian director, Damir Lukacevik.[40] Barceló's short story criticizes the exploitation of Africa, Asia and Latin America by neocolonial powerhouses, and the treatment of immigrants in Europe. In "Mil euros por tu vida", two Africans, Sarah and Abraham, sell their bodies to Anna and Peyró, an elderly Spanish couple. With the rise of medical technologies such as prosthetics, one group of people currently evolving into posthumans is the elderly (Bell 147). As Bell explains, "their bodies have become welcoming hosts to new body parts and pharmacological enhancements, defying the built-in obsolescence of the ageing process" (147). Set in the near future, in "Mil euros por tu vida", technology allows those with wealth to prolong their lives by transferring their consciousness to the bodies of young, healthy immigrants. One of the conditions of the transfer is that Anna and Peyró will have complete control of the African bodies for 20 hours, but then for a few hours each night, Sarah and Abraham will regain possession of their own bodies. Eventually, this creates tension once the hosts attempt to reclaim agency over their bodies when they realize that Anna and Peyró paid 1 million euros each for the transfer but that their families back in Africa will only receive 10,000 euros. Barceló's story interweaves issues of race, class, ethics, and the nature of being/consciousness to show how immigrants have become economic slaves of the Global North as the process of aging has been outsourced to those in poorer nations.

In "Mil euros por tu vida" Barceló situates the Biblical story of Sarah and Abraham in the third decade of the 21st century to show how technology can create interracial families at an age when it should be biologically impossible to conceive. In the Bible, God promises Sarah and Abraham that she will give birth despite her old age. Once their son is born, they name him

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[40] *Transfer* received numerous awards such as the Silver Raven for best director at the Brussels International Festival of Fantasy Film, the Audience Award at the Schwerin Art of Film Festival, and the Shriekfest Awar for best SF feature at Shriekfest.

Isaac. In the short story, Sarah/Anna too gives birth, despite Anna's old age and the opposition of both of their husbands. Peyró who represents Europe's xenophobia argues that genetically, the baby will be African, and that all they will be able to provide is money and part of his education. Abraham is also in favor of aborting but for different reasons. Angrily, Abraham states, "¡[n]o sólo nos han comprado como bestias en la feria, sino que ahora quieren quedarse también con nuestros hijos!...El euro es su único dios…No es mi hijo, ¿no lo entiendes? Es hijo de esos blancos que nos han comprado por un puñado de euros, que nos han estafado a nosotros y a nuestras familias, es un hijo del diablo" (98). The positions of Peyró, Sarah and Abraham represent the scientific and philosophical debate between genes vs the environment, which questions whether human behaviour is determined by the environment or by a person's genes. Sarah believes that even though the child will grow up in a wealthy environment, he will remain connected to his roots and eventually help his own race. Abraham on the other hand, argues that money will corrupt him and that despite being black, he will behave like the affluent whites with whom he is surrounded. In the end, despite their class and racial differences, both women aspire to be mothers and work together to convince their husbands not to terminate the pregnancy. Anna/Sarah gives birth to Isaac, the first European child born of parents who occupy host bodies.

In addition to depicting the genes vs environment debate, the presence of two different racial couples serves to address the issue of race and science. In *Science and Social Inequality Feminist and Postcolonial Issues*, Sandra Harding explains how the development of modern science in Europe was intertwined with colonialism and imperialism, and how at times science has contributed to global inequality of class, gender, race and ethnicity.[41] Most troubling is that

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[41] As examples, Harding references the sterilization of African American welfare recipients, the medical experimentation on Jews, Gypsies, African Americans and Puerto Ricans, and discriminatory uses of reproductive technologies (25).

"the benefits of modern sciences and technologies have been disproportionately distributed to the already most economically and politically advantaged groups and the costs to the already least-advantaged groups" (25). This trend has continued in the 21st century. In "Mil euros por tu vida" this is exemplified by the purchasing power of wealthy Europeans, and the portrayal of the African body as a commodity. In the text, the African body is lauded for its strength and resilience. Abraham is described as "joven, alto, musculoso" (65), and "guapo, de piel oscura y rasgos casi occidentales, con la nariz estrecha y recta y los pómulos altos; caminaba erguido como una lanza" (66). Peyró on the other hand, is described as "viejo, calvo, con papada, barriga y bolsas bajo los ojos" (73). To highlight the scientific enslavement of Abraham and Sarah, throughout the medical procedure they are refered to as tools and treated as pieces of sophisticated equipment rather than human beings (68). In fact, throughout most of the story, Abraham and Sarah are referred to as "El" and "Ella" rather than by their proper names. The lack of proper names serves two purposes. First, it denies Abraham and Sarah a sense of personhood, and second, it serves to mitigate Anna and Peyró's guilt. After the Cold War, neo-liberal imperialism triumphed by conceiling its continued practice of subjugation through discourses of human rights, democracy and good governance (Ndlovu-Gatsheni 227). In other words, intervention has been justified through the idea that it is for the good of those living in the other nation. "Mil euros por tu vida" exemplifies contemporary society's shift from militirized intervention of other countries to a more indirect approach, and the manipulation of discourse to justify this exploitation. For example, Abraham and Sarah justify their actions by claiming that they are performing an act of charity for those in the third world (73). Ultimately, exploitation of the African body is disguised as an act of kindness towards those less fortunate. Complicit in this fictional exploitation, is the scientific community.

"Mil euros por tu vida" concludes with fictional statistics and commentary on the effects of the transfer process: there are currently 3,386 transfers, 514 births through transfer, the median age in Europe has significantly increased but the population of Africa has continued to decrease, the price of a transfer has increased by 55%, and the Catholic Church remains opposed to the process (101-102). These demographic and social changes will have unforseen consequences for the ficitional elite of Barcelona and those living in Africa, but is also a concern of contemporary biotechnology. As Francis Fukuyama states in *Our Posthuman Future*, "the third pathway by which contemporary biotechnology will affect politics is through the prolongation of life, and the demographic and social changes that will occur as a result" (57). Advances in biotechnology have led to increased life expectancies. The prolongation of life, particularly in females, combined with a sociological shift toward more active female participation in politics, will make the middle-age/elderly women block of voters, one of the most significant in the 21st century (Fukuyama 62). The importance of female activism and participation in politics is exemplified by many of the female protagonists, both human and machine, in the texts analyzed in this chapter. As a whole, these texts offer an exploration of the social and political power relationships, that aided by science and technology, sustain neocolonialism, emphasizing the mechanism through which women can destabilize these asymmetrical power hierarchies.

EMBODIED EXPERIENCES: FROM FICTION TO REALITY

The texts analyzed in this chapter present an array of posthuman futures from the symbiosis of human and artificial intelligence in *El sueño del Rey Rojo* to uploaded consciousness in "Mil euros por tu vida". The protagonists navigate complex terrains in which embodiment and

subjectivity are situated in an intricate network that weaves together technology, sexuality, history, class and race. Be Another Lab, an interdisciplinary multinational group based in Barcelona, has developed "Machine to be Another", bringing SF to life. The project combines virtual reality with neuroscientific techniques to allow people to see themselves in the body of another person, and to experience the world from someone else's perspective. Virtual reality "is a communication technology that relies on images of space and place within which and with which its users interact" (Hillis vii). The noteworthy aspect of this project is that instead of using digital avatars, it uses actual human subjects. For example, "racial bias is studied by having a subject's actions mirrored by a performer of color" (n.p. Brownlee). In "Empathy Towards an Immigrant" users experience the point of view of Youssoupha, an immigrant from Senegal living in Spain (Bertrand et al. n.p.). Other performances/experiments using this system have included gender swaps, mother-daughter relationships, and body extension. The goal is to help scientists quantify concepts like sexism, gender identity, racial bias and empathy through the melding of technology, science and narrative; the key is that this project grounds these concepts in the living body and not in a cyberspace that is dissociated from the real world.

Although virtual reality (VR) can deepen our understanding of human relations, as Hillis notes, one must proceed with caution because these technologies are produced within a "culture of increasing surveillance and voyeurism, whose members often are camera ready and frequently 'like to watch'" (viii). Enthusiasts view cyberspace and virtual reality as utopias mediated by technology that offer an escape from the lived world and greater autonomy over one's identity. However, ignoring the social, political and economic roots that shape both these technologies and the body, does a disservice to our understanding of the ever evolving relationship between humans and technology. As Balsamo notes, what "VR encounters really provide is an illusion of

control over reality, nature and, especially, over the unruly, gender and race-marked, essentially mortal body. There is little coincidence that VR emerged in the 1980s, during a decade when the body was understood to be increasingly vulnerable (literally as well as discursively) to infection, as well as to gender, race, ethnicity and ability critiques" ("Forms of" 229). Going forward it is important to remember, that while the internet, cyberspace and virtual reality may allow users to take on personas that are different from their embodied selves, it is through the body that we have access to the world, whether that world is real or virtual.

SF provides a space from which one can contemplate alternative futures that challenge our current understanding of society. Through fictional scenarios, SF can help advance conversations about gender and racial equality, and political and economic models. With the global financial crisis of 2008, the economy has been a major point of anxiety for contemporary society. With corporate dominance as one of its signature tropes, cyberpunk has re-emerged as a powerful tool for discussing capitalism and globalization, and the oppressions that are carried out to maintain such systems in place.

Chapter 4

Spanish SF: Ethical and Feminist Discursions

The best SF has the potential to not only entertain, but to contribute to ongoing conversations related to the ethical implications of abuses of technology for women in particular. It is a genre whose strategies have the potential to nurture a relationship with the reader that extends beyond the page and beyond the imagination: "At its most significant, SF can be a part of the larger process of mobilizing the cultural imagination. It can be part of the process of making the world critically "legible" in a way that not only delivers pleasure and knowledge but also the joys of joining in the collective, historical work of bringing a more just and free society into being" (Moylan 28). In the short stories, novels, and films analyzed in the previous three chapters, the authors critically engage with scientific concepts and raise ethical and moral questions about the potential consequences of these technologies on the sex, gender, class, and racial dynamics in society. The fact that many of these stories are set in the not so distant future, and the emphasis in the narrations on emerging technologies in the fields of biotechnology, robotics, and virtual reality, naturally establishes a connection between the fictional world and reality.

The critical interpretation of SF complements scholarship from fields ranging from science, technology and law to sociology, philosophy and ethics. While ethicists, theologians, lawyers, and scientists are all concerned with the ethical dilemmas posed by science, each discipline approaches the issue differently. People who work in areas like law and medicine generally create logical arguments, but SF writers embed the ethical dilemma in a story, which means that "the implications of the science or technology are shown affecting a person or a small group of people in personal and emotional terms" (Kress 202). In other words, writers and

filmmakers appeal to an audience's emotions rather than to their logic and reason. When readers

come to care about the characters in the story and the way they are affected directly or indirectly

by science, the fact that these people are fictional becomes of little importance (Kress 202). Once

the reader is emotionally invested in the characters, the ethical dilemma becomes personal and

"[i]nstead of abstractions, the choices involved are presented in terms of real human suffering or

triumph" (Kress 202). Scientists, lawyers, economists, and sociologists calculate the costs of

choices that may accompany new technologies but frequently omit aspects which "seem

insignificant because they involve emotions, which though intangible and difficult to predict,

matter tremendously (even when they are not considered of importance in and of themselves)"

(Duchamp 68). Literature, particularly SF, when analyzed within the broader cultural context

that includes attention to scientific innovations, ethical dilemmas, philosophical thought and

laws, can create a more nuanced dialog on how technological progress and scientific

advancements are improving and/or threatening familial configurations and sociological

interactions.

     In this final chapter, these extra-literarly elements are brought to the forefront to show

how the Spanish SF authors analyzed in the previous three chapters are using their texts as a

means to comment on the profound sociopolitical and cultural changes Spain has undergone

since the 1990s and how recent technologies and laws are contributing to gender, economic, and

racial inequality in the 21st century. Given the advancements in reproductive technology in the

last few decades, SF has increasingly presented alternative modes of achieving pregnancy such

as cloning and interspecies reproduction. More broadly, in SF texts, reproduction has been used

to explore themes of social control and gender hierarchies as is the case with Barceló's

Consecuencias naturales. In the first section I will examine how the portrayal of reproductive

technologies in *Consecuencials naturales* illustrates a historically sexist past in which the contraceptive burden has overwhemlingly fallen on the woman. In connection to contraception, I will examine how childbearing and motherhood are ambivalent social processes. On the one hand, extreme adoration and protectiveness of an expectant female body by society can lead to laws that place signifcant restrictions on a woman's rights over her body. Yet on the other hand, the dissociation of biology from motherhood as a result of alternative reproductive technologies threatens to erase a vital natural function of the female sex and is in line with Spain's patriarchal past that seeks to undermine a woman's position in society. In the second section I will look at how assisted reproductive technology that involves surrogacy as is portrayed in *Planeta hembra*, may be used for commerical and political ends at the expense of the female body. In the third section I turn to a different technology, robotics, as portrayed in the films *Eva* and *Autómata* to showcase how mechanical beings are increasingly carrying out social functions in contemporary society. By allowing us to see the world from the point of view of mechanical females bodies embodying the role of mothers and daughters we are able to step back and examine how gender is a social function associated with specific roles. Then in the fourth section I look at a specific type of robot, the sexbot, to explain how current models on the market replicate troubling gender dynamics, and how literature and film can help change this narrative. Finally through a look at the portrayal of the African body in "Mil euros por tu vida," I extend my analysis to how technology poses a threat not only to the female body, but to racialized female bodies in the third world.

REDEFINING MOTHERHOOD

In *Consecuencias naturales* and *Planeta hembra* analyzed in the first chapter, the gendered hierarchies that are present in the utopian/dystopian societies are a result of the implementation of various forms of reproductive technologies. While childbearing and motherhood were once intimately tied to heterosexual intercourse and one's biological sex, the contraceptive revolution radically altered the process of reproduction and childrearing. With the creation of the oral contraceptive in the 60s, scientists had found a way to intervene in a natural process. It was "no longer mother nature but *Homo sapiens* that sets the boundaries between the artificial and natural in human procreation" (Diczfalusy 3). The contraceptive revolution brought about the reproductive revolution, which in turn led to the gender equity revolution (3). In *Consecuencias naturales*, there are two societies: one made up of humans and the other of Xhrolls. Humans exemplify an advanced, futuristic society, which has achieved gender equality. Although some of society's practices are an inconvenience such as having to use both the masculine and feminine forms in written and spoken language, other practices have been changed for the better such as the institution of a more egalitarian reproductive policy. Barceló has created a fictional world in which the biology of the female body has been radically altered. In the novel, the female sex is sterile until drugs are taken to bring back fertility. This places reproductive power entirely in the hands of the female sex. In contrast, Xhrolls are representative of conservative societies where reproduction and motherhood are viewed as being in service of the family and the state, even if it is at the expense of one's body and individual rights. On planet Xhroll, motherhood is a compulsory social function of the abbas. Andrade, the male protagonist, finds himself trying to circumvent the norms of both societies.

Ultimately, Andrade's lack of reproductive responsibility by faking the use of birth control; his consequent pregnancy after intercourse with a member of Xhroll who he eventually discovers is of the male sex; the presence of breasts on the men who live on Xhroll; and the question raised at the end of the novel of whether Charlie is the newborn's mother or father, all contribute to the idea that more than derivatives of biology, motherhood, the family and gender, are reflections of cultural and ideological values. In fact, in *Consecuencias naturales*, in order to truly establish gender equality, conception, which is inherently associated with the female sex, is medically feasible and legally permissible in the male sex. As Charlie reveals: "una cosa que ambos sexos tenían muy clara es que un hombre no podía concebir inadvertidamente. Podía hacerse implantar un embrión maduro en una placenta artificial y llevarlo a término… La cosa funcionaba. Si algún hombre lo deseaba, tenía derecho legal" (65). Despite this scientific breakthrough, ideologically, society has been slow to accept the idea of a man giving birth. The procedure has only been performed a handful of times and always in a laboratory setting where the subjects were men "[que se] habían declarado sentirse mujeres en su interior" (65). Formulaically, as is exemplified by the mandated use of dual gender pronouns and the potential for both sexes to conceive, gender equality has been achieved, but society itself has yet to fully embrace these changes. The juxtaposition of Andrade's archaic attitude towards women and society's gender equality laws is representative of the leap Spain experienced "from pre-feminism into post-feminism without having really experienced a feminist upheaval" (Hooper 130). The result of this rapid change was that "profoundly sexist attitudes have survived into an era in which women are acquiring much genuine freedom and equality" (130). The novel expresses the idea that it's not the biological difference that oppresses women, but the social significance of inferiority that has been attributed to conception and motherhood. Altering the

biological conditions is meaningless if society's attitude towards reproduction and motherhood remains unchanged. The implication of this is that the dissociation of childbirth from the female body as is exemplified by Andrade's male pregnancy, only partially (if at all) destabilizes the rigid relationship that exists in patriarchal societies between one's biological sex and gender roles. Moreover some feminists actually posit that the dissociation of motherhood from biology and womanhood is actually more harmful to women's rights than it is beneficial.

Although ideally, the dissociation of childbirth from the female body would create a more inclusive society where what have traditionally been considered "maternal" roles are shared between both sexes, and also facilitate less "traditional" family arrangements, there is growing concern among feminists that biotechnological intervention will lead to the erasure of the mother from the reproduction process. As was discussed in chapter one, Aristotle's sperm-centered theory of procreation which viewed females as an anomaly, and therefore inferior to the male sex, became a persistent theory in Western scientific discourse. By positioning women as different from the norm, a link was established between women and the monstrous: "theories of conception of monsters are at times extreme versions of the deeply seated anxiety that surrounds the issue of women's maternal power of procreation in a patriarchal society" (Braidotti "Mothers" 225). In the mid 19th century, malformed embryos became a focus of comparative anatomy and evolutionary biology in the quest to understand the origin of anomalous/monstrous beings (239). Reproductive technologies are the newest form of control and discipline of the maternal body. Scientific thinking has been dominated by masculine, white and Christian values (242); the dissociation of childbirth from the female body is historically in line with the desire to render the female/monstrous body disposable. The medicalization of the maternal function and the marginalization of women is currently taking place via the language that is used when

describing reproductive technologies and arrangements. Rather than talk about women as mothers and human beings, the emphasis is placed on bodily parts and machinery (Woliver 369). Like Braidotti states, "the inextricable interconnection of the bodily with the technological" ("Mothers" 244) demands intense dialogue between feminism, science, and technology.

Indeed, redefining motherhood has been fundamental to feminist movements, and within literature this impulse has led to a complex and ambivalent relationship between honoring motherhood and critiquing it. Historically, patriarchal society has assigned steadfast gender binaries to one's role in reproduction and child-rearing. In turn, at times novelists and feminists have critiqued motherhood as a source of women's oppression, while at other times they have honored motherhood and a woman's commitment to the family. For example, during the 19th century, "el ángel del hogar" was a recurring trope of realist novels in which female characters were praised for fulfilling their role as mothers. Soon however, adultereses and prostitutes started to appear more frequently in literature as a manifestation of Spanish society's obsession and anxiety over gender deviances as is evidenced by *La deshereda* (1881) and *La Prostituta* (1884). Then during Franco's dictatorship, the regime ferverently propagated the idea that motherhood was a woman's sole function in society. As a result, in the 1960s there was a proliferation of authors who created female characters that embodied an ideology that significantly differed from the regime's view of femininity as can be seen by *La plaza del diamante* (1962), *Cinco horas con Marío* (1966), and *Últimas tardes con Teresa* (1966). Novels of the 1980s and 1990s, like *Te trataré como a una reina* (1983) began to overtly explore the sexuality of the female body. In *The Changing Face of Motherhood in Spain* (2016) Catherine Ross examines the contesting versions of motherhood specifically in the works of Lucía Etxebarria such as *Beatriz y los cuerpos celestes* (1998). All of these examples illustrate how Spanish authors have consistently

incorporated the concept of motherhood into their works, thereby articulating society's various preoccupations over the sexual conduct and social role of the female sex. With this dissertation I hope to enrich the conversation by shifting the focus to how science and technology have significantly contributed to shape definitions of motherhood. Over time, the conception of motherhood has transformed from a lifetime identity or synonymous relationship between womanhood and motherhood "to a role--an identity that could be taken on, thrown off, or combined with other identities" (Allen 220). Motherhood is a social construct, easily molded by political ideologies; as society becomes more accepting of alternative familial configurations, motherhood is being reconceptualized to encompass the wide spectrum of sexual identities thereby facilitating same-sex parenting. Amidst these changes however, it is imperative that legal and scientific frameworks don't marginalize either the female or male sex in the process. As Elixabete Imaz explains in "Same Sex Parenting, Assisted Reproduction and Gender Asymmetry: Reflecting on the Differential Effects of Legislation on Gay and Lesbian Family Formation in Spain," in the first decade of the 21st century there were significant strides made in legislation that regulates family formation, filiation and marriage in relation to lesbian, gay, bisexual and transgender rights (5). Unfortunately, when it comes to accessing parenthood, gay men face significantly more obstacles than lesbians. This gender assymetry will be taken up in the next section.

SURROGACY: EXPLOITATION OR EMPOWERMENT?

In contrast to *Consecuencia naturales* where the ability to conceive has been extended to men, in *Planeta hembra*, cloning and genetic engineering have rendered the male body obsolete in the reproductive process and therefore eliminated the need for heterosexual intercourse. Today,

methods of reproduction without sex include artificial insemination by donor (AID), in vitro

fertilization (IVF), and surrogate embryo transfer (SET). Although biotechnology has facilitated

the creation and slow acceptance of alternative familial structures, it has also raised numerous

moral and ethical questions and caused opposing opinions within political theory and feminist

studies. One area of such debate has been surrogacy. In commercial surrogacy, a woman agrees

to become pregnant on behalf of the couple, to deliver the baby to the couple, and to terminate

her parental rights, all in exchange for a fee. Those who oppose commercial surrogacy argue that

it "improperly treats children and women's reproductive capacities as commodities" (Anderson

233). The fear that the process of reproduction may be used for commercial and political ends is

articulated in *Planeta hembra,* to the extreme.

In Bustelo's novel, the matriarchs have replaced the natural process of birth with cloning

and surrogacy, thereby turning reproduction into a political tool:

> Cada cuatro años se celebran elecciones, que siempre ganan las Hembras por la sencilla
>
> razón de que constituyen más del cincuenta por ciento de la población. Conviene aclarar
>
> que el innegable expertise de las Hembras en materia de clonación y terapia génica les
>
> permite, amén de lograr una población en perfecto equilibrio numérico--con las tasas de
>
> natalidad y mortalidad precisas para evitar la superpoblación--, asegurarse la cifra
>
> siempre mayor de Hembras necesarias para ganar una y otra vez las elecciones. (113-114)

Elections are held to give the illusion of democracy, but genetic engineering has been used to fix

each election cycle. While the majority of cloned embryos go through their development in

machines that act as uteruses, the embryos that have been engineered to become the future

leaders of Party XX are given the privilege of growing in the womb of a "Gestadora" (119).

These "Gestadoras" are women who have passed a rigorous selection process and who have

agreed to relinquish all of the children they bear, to the state. Someone born from a "Gestadora" is referred to as an "hembra real" or "sangre azul" (120). Blue blood is a reference to the aristocratic Castilian families that claimed to never have intermarried with Muslims and Jews of North African origin. Similar to Castilians who believed they were superior because of the purity of their race, in the novel, an individual of "sangre azul" is described as a "mujer perfecta" (120). The novel presents an exaggerated account of cloning and surrogacy as a means to criticize extreme feminist viewpoints that privilege one sex over the other and to caution against the use of scientific technologies for political and economic goals. [42]

Commercial surrogacy has become a multi-billion dollar industry across the world and as Miranda Davies points out in *Babies for Sale?: Transnational Surrogacy, Human Rights and the Politics of Reproduction* (2017), financial interests and profits are often at the expense of women in less affluent nations. Grounded in feminist perspectives, Davies' book offers an in-depth analysis of transnational surrogacy and its implications for human rights and motherhood. Although biotechnology, and more specifically surrogacy, has the potential to create greater sexual equality, when unregulated, it can propagate economic, gender, and racial inequalities. India, Mexico, Nepal, Thailand, and Ukraine are among the most frequented nations for pursuing surrogacy given the lower cost of surrogacy in these regions when compared to countries such as the U.S. When there is such a disparity of wealth between surrogate mothers and those pursuing surrogacy, the process becomes a reinscription of gender and race hierarchies justified by biology. Commercial surrogacy is part of a "larger history of fertility regulation and the

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[42] As Susan Divine points out in her analysis of *Planeta hembra*, even though women in the novel are now in control rather than men, consumerism and capitalism remain an essential part of society. This is made evident by the fact that Rockefeller Center, a symbol of media and commerce, is the stronghold of Party XX, rather than a structure more representative of politics, like the White House (124). It is out of New York City, an iconic entertainment and financial center, that Party XX governs and censors society.

reproductive injustices embedded in colonial and post-colonial histories and hierarchies" (Twine 106). Building upon the work of critical race feminists, Andrea Smith and Dorothy Roberts, Twine argues that there is a fertility continuum that places women in a global reproductive caste system that enforces post-colonial hierarchies of race, class, and gender (108). In various countries throughout the world, the state has played a significant role in the surveillance and control of women's fertility, often infringing on the rights of poor women of color. As a result, ethical concerns and a growing awareness that surrogacy bears semblance to a history of colonialism and exploitation, has prompted many countries to pass laws restricting this practice (Winn n.p.).

In October of 1988, the Spanish Parliament approved a law on technologies for assisted reproduction. However as Maria José Varela and Verena Stolcke argue, the law "hides behind a progressive appearance, a total disregard for women's health coupled with their discriminatory legal treatment" (233). In terms of surrogate motherhood, article 10 of the law declares "null and void surrogate motherhood contracts independent of whether they imply payment or are free" (Varela and Stolcke 236). According to Varela and Stolcke, this section of the law adequately protects women from what could become a form of female reproductive slavery (236). The issue with article 10 is that in the case of a birth resulting from surrogacy, the biological father is allowed to petition a judge for paternity and ultimately take custody of the child (Varela and Stolcke 237). This is problematic given the possibility that the father is likely to be from a higher economic class than the pregnant mother (Varela and Stolcke 237). The fear is that surrogacy will lead to a situation of exploitation, since already a significant number of surrogate mothers are poor women in developing countries. Laura Purdy, a feminist bioethicist, argues that the economic exploitation argument is too simplistic since in some circumstances contracted

surrogacy may pose a smaller risk and a higher benefit than some of the other jobs in which working-class women are involved (250). While visiting Argentina in 2017, Margaret Atwood reflected on the continued relevance of her SF novel, The *Handmaid's Tale* (1985),[43] in which women are forced to bear children for elite couples that have trouble conceiving. Atwood asks if the woman who rents her womb does so by choice or coercion: ¿[l]o hace porque es generosa y quiere ayudar o está en una situación de pobreza y lo ve como la única forma de salir de ella" (qtd. in Centenera n.p.)? Bustelo's and Atwood's novels share many similarities; the popularity of the adaptation of Atwood's novel on Hulu demonstrates that the fears and anxieties presented in the novel, resonate with contemporary society. In Bustelo's novel, the numerous references to historical and contemporary people and events, along with the fact that *Planeta hembra* is set in the not so distant future of 2069, sets the stage for the reader to seriously contemplate the possibility that the ideas presented in the novel about the misuses of sciences and technology are not as outlandish as they may seem at first.

Although the law on assisted reproduction was modified in 2003 and 2006, surrogacy remains illegal and thus a continued point of contention in Spain.[44] It is estimated that every year between 800 to 1,000 children are born to Spanish parents via surrogacies carried out in the US, Canada, England, India, Nepal, México, Thailand, Ukraine, Russia, Greece, Portugal, and South

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[43] Despite being SF, Atwood's novel is firmly grounded in reality. In *The Guardian,* Atwood shares that when writing the novel she had one rule for herself, "I would not include anything that human beings had not already done in some other place or time, or for which the technology did not already exist. I did not wish to be accused of dark, twisted inventions, or of misrepresenting the human potential for deplorable behaviour. The group-activated hangings, the tearing apart of human beings, the clothing specific to castes and classes, the forced childbearing and the appropriation of the results, the children stolen by regimes and placed for upbringing with high-ranking officials, the forbidding of literacy, the denial of property rights: all had precedents, and many were to be found not in other cultures and religions, but within western society, and within the 'Christian' tradition, itself" (n.p.).

[44] See "La Ley 14/2006 sobre Técnicas de Reproducción Humana Asistida: consideraciones científicas y éticas" by Juan Ramón Lacadena Calero.

Africa (Álvarez n.p.). Given this growing trend, the political parties in Spain have been forced to

take up the issue in their platforms. Ciudadanos, the political party that emerged during Spain's

economic crisis, supports a form known as altruistic surrogacy,[45] but under the following

conditions: the woman must be a Spanish citizen or legal resident over 25, have children of her

own, and be in a stable socioeconomic position (Mateo n.p.). Currently, out of the four major

political parties in Congress (Popular Party, Socialist Party, Podemos), Ciudadanos is the only

party to explicitly state that they are in favor of some form of surrogacy. As the Ciudadanos

leader Albert Rivera is quoted saying in *El País*, "¿Quiénes somos nosotros para impedir que

alguien pueda crear una familia con una regulación clara, concisa y altruista? ... No hay derecho

a que uno tenga que gastarse 150.000 dólares, hipotecarse e irse a Estados Unidos para ser padre

o para ser madre" (Mateo n.p.). Aside from Ciudadanos and heterosexual couples with fertility

problems, the strongest proponent of surrogacy has been the gay,[46] lesbian, and transexual

community. In Marcin Smietana's qualitative study of Spanish gay fathers, those interviewed

argue that the economic nature of surrogacy is similar to other aspects of raising children that are

also based on an economic exchange such as healthcare and education (53). For these fathers,

surrogacy was the most accessible path to parenthood since the other alternative, adoption, still

operates under patriarchal rules; in many countries, legal homophobia precludes gay couples

from adopting a child (Smietana 53). Although Spain legalized same-sex marriage in 2005, it has

failed to provide regulations for gay fatherhood thereby forcing couples to turn abroad.

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[45] In altruistic surrogacy, the woman is only allowed to receive compensation for costs incurred
during the pregnancy.
[46] See "Families Like We'd Always Known: Spanish Gay Fathers' Normalization Narratives in
Transnational Surrogacy" by Marcin Smietana for a qualitative study of how "Spanish gay men
who become fathers through transnational surrogacy deal with the normative scripts of family
formation in order to access reproduction and benefit from the social protections and privileges
of sex, gender, kinship, and nation" (50).

Within Spain, those opposed to surrogacy include Podemos, PSOE, the Catholic Church, and feminist groups. Podemos argues that the desire to have children with one's own genetic makeup does not justify turning maternity and the female body into a commodity (Marcos n.p.). Even under altruistic surrogacy, there is the risk of turning reproduction into a commercial process that could ultimately lead to one more form of female oppression and exploitation (Marcos n.p.). Paloma García Villa, Podemos' spokesperson, states that while the party recognizes that paternity is a legitimate desire, "si choca con los derechos de otras personas tienen que estar los derechos colectivos por encima de los deseos individuales" (qtd. in Carvajal n.p.). Pilar Cancela, PSOE's spokesperson, states that surrogacy "vulnera los derechos humanos de las mujeres" (qtd. in Carvajal n.p.). Additionally, while secular feminists are often at odds with the Catholic Church, in the case of surrogacy both groups are united and vehemently oppose a practice that undermines a woman's dignity. Unfortunately, this has pitted some feminists against LGTB, two groups that for decades mutually supported each other's fight for social equality (Pérez Oliva n.p.).

While "gestación subrogada" is a more neutral and scientific term, feminists have used phrases such as "vientres de alquiler", "mujeres horno", "incubadora humana", "granjas de mujeres reproductoras" and "#NoSomosVasijas" to favorably influence public opinion over their plight in the hopes that their discourse can influence policy (Pérez Oliva n.p.). Feminists are concerned that new reproductive technologies and surrogacy arrangements are giving male authorities increasing control over the process of conception, gestation, and birth, which is troubling given modern science's history of dominance and control of women's lives (Woliver 361). It should also be mentioned that although many European feminists including left-wing feminists in Spain have decried surrogacy, North American mainstream feminism has been more

open to the practice. Marina Terragni, author of the anti-surrogacy book *Temporary Mother*, attributes this to the fact that Anglo-Saxon feminism has been more about emancipation and making women equal to men (Momigliano n.p.). In this light, anti-surrogacy would be at odds with gender equality and gay rights. European feminists on the other hand, support "affirmation of feminine difference" which is the idea that "women have a more central role in reproduction than men and that this primacy needs to be cherished and protected" (Momigliano n.p.).

Like Bustelo states in an interview for *El País*, as a "feminista desde siempre", in her novel she criticizes "la globalización uniformadora, la sectorización, la desaparición de la cultura" and most pertinent to this analysis, "el uso infame de la tecnología" (Mora n.p.). Bustelo considers these some of the potential greatest threats to contemporary society. *Planeta hembra* presents a very pessimistic and one-sided view of genetic engineering, surrogacy, and matriarchy, but a subjective point of view is what gives SF its power and differentiates ethical debates in literature, from abstract debates in other disciplines. By the very nature of good storytelling, SF has a built-in-negative bias (Kress 203). In the end, "the business of science fiction is not to visualize the future, but to visualize *a* future, one of many possible paths that science and technology might lead us to" (Kress 203). The growing prominence of SF in mainstream culture, means that the public is often introduced to ethical questions via an emotional and biased story rather than through reasoned debate (Kress 203). While presenting the emotional implications is valuable, as science and technology become an increasing part of our daily life, so too do the questions about its ethical use, making the need to increase science literacy among the public even more pressing.

Although the value placed on a science education is often attributed to a nationalistic desire to out-compete other countries, from a feminist perspective, one of the primary driving

factors in improving science literacy should be its potential to further social justice (Giordano 100). SF reveals some of our deepest cultural anxieties and should be studied in the classroom in order to help students learn how to question the knowledge produced by scientists and how to become active participants in shaping the direction and future of mankind.[47] The exaggerations and distorsions of technologies, political institutions, social hierarchies and economic systems in SF may reveal more about contemporary society than mediums which purport to be objective and factual. One needs to look no further than the work of feminist science and technology scholars who question the very assumption that science is an entirely objective discipline. As Haraway posits:

> Biology is the fiction appropriate to objects called organisms; biology fashions the facts "discovered" from organic beings. Organisms perform for the biologist, who transforms that performance into a truth attested by disciplined experience; i.e., into a fact, the jointly accomplished deed or feat of the scientist and the organism. *Both* the scientist and the organism are actors in a storytelling practice. (*Primate* 5)

Scientists rely on the binary opposition of fact and fiction to privilege and legitimize the "objective" and "truthful" nature of their work, but when biology is viewed as a narrative practice, the difference between fact and fiction is obscured. In fact, as has been discussed in the preceding pages, scientific discourse on reproduction is deeply rooted in a historical narrative in which the male sex has been given primacy over the female sex. By not acknowledging that science is also a story telling practice entrenched in culture, we run the risk of shielding science when abuses of power take place. Moreover, if the medical field is solely focused on the

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[47] Unfortunately, Spanish SF has not received legitimation by what is a very conservative Spanish academy, making the teaching of SF in the Spanish University a challenge. See Sara Martín's article "Science Fiction in the Spanish University: The Boundaries that Need to be Broken".

"science" of reproductive practices, then this can undermine the social, economic, and political implications of such technology. Literature is one mechanism that may be used to shift the focus back to the ethical and sociocultural dimension of reproductive models. Part of the task of literature, particularly feminist SF, is to examine and speculate over what is muted in legal and medical discourses. One factor that is absent from this scientific rhetoric is the role the Catholic Church has played in shaping society's conception of motherhood, positing the Virgin Mary as a model for women to emulate. Given the increasing influence of the Catholic Church in debates about contraception and surrogacy and a growing concern over how to regulate behaviour and use of reproductive technologies, there is a "political urgency" to address the future of reproduction and its repercussions on the rights of women (Braidotti "Mothers" 214). In SF medical discourse can exist alongside religious ideology which in turn can offer broader messages about the impact of science, in particular reproductive technology, on society.

MECHANICAL DAUGHTERS AND MOTHERS: EMOTIONAL INTELLIGENCE IN AI

In Kike Maíllo's film *Eva,* motherhood has been detached from the notion that a woman possesses an innate biological role in the process of reproduction; conception, gestation, and birth have been replaced by a mechanized process where children take the form of robots that have been crafted in laboratories. As Braidotti points out, historically speaking, the monstrous as it relates to categories of otherness is "sexual difference and sexual deviation (especially homosexuality and hermaphroditism); race and ethnicity; the non-human either on an upward trajectory (the divine, or sacred) or a downward one (the natural environment, the animal, the degenerate, the mutant). A case apart is that of inorganic other; that is, the machine" ("Mothers" 141). Engendered in a laboratory, Eva embodies a monstrous being from the moment of

conception, and eventually commits one of the most heinous acts possible. Eva murders her mother, an act that renders her a killing machine and by extension seals her own destruction. Alex is forced to terminate Eva's life because she has killed a human being. From a feminist science and technology point of view, the eradication of the maternal line at the hands of the male sex, and a scientist nonetheless, is troubling because it propagates the idea that deviant behaviour is enough cause for the eradication of life. This brings us back to Braidotti's observation that there is a historical pattern of scientifically trying to correct and even abolish deviance in society.

Eva's deviance, stems in large part from the fact that she cannot fully interpret emotions in human faces as is shown when Alex administers the psychology test to her. In all likelihood, it is Eva's inability to recognize the nuances between different emotions, that compounds her panic when she discovers her mother has hidden the truth about her origins. Scared and confused, Eva pushes her mother off the cliff. What is also troubling about Alex's character is that after Lana fails to create an android with the emotional intelligence of a child who is capable of passing the security protocols, Alex is tasked with this endeavour. In other words, the scientific community empowers Alex to take on a role that has been traditionally inherent to the female sex: giving "birth". Not only does Alex have the power to create life, but with a single phrase, also the power to bring it to an end. In this regard, it is symbolic that the female whose life he brings to an end is named Eva. Eve (Eva), as the first woman according to creation myths, is considered the mother of humanity, but also the first sinner. By erasing Eva, Alex begins the process of rewriting the maternal line via technological intervention and propagates the idea that anything but a "perfect" female should be eradicated. In recent years several popular films have emerged in which the protagonist is a character named Eva/Ava such as Andrew Stanton's *Wall-E* (2008),

Caradog James' *The Machine* (2013) and Alex Garland's *Ex-Machina* (2014). A rewriting of the story of Eve, each film illustrates the complex dynamic between sex, gender, and power in the robotics era, and is indicative of a growing interest in machine sentience and its implications for human-machine interactions.

Like the film *Ex-Machina* in which there is no robot-kill switch in order to preserve a robot's free will and thereby establish a more intimate closeness with human behavior, Maíllo's film raises questions about where society is going to draw the line when it comes to regulating the behavior of robots and AI. As robots increasingly embody human attributes, should society curtail the extent to which it differentiates between humans and machines and consequently the standards and laws to which each one is held? By not being confined by security protocols, Eva resembles a "real" child in the sense that a child's moral code is not something that is innate and programmed from birth, but rather is shaped by one's upbringing and environment. The protocols are meant to safeguard society from a robot malfunction, but are unnatural in the sense that humans are not born with an ethical code already ingrained in them. It's a paradoxical relationship because while the scientists in the film are attempting to reproduce a robot that resembles a human as much as possible, in terms of discipline and punishment, the robot is held to a higher standard of "human" behavior than a real child. In other words, society is not likely to give the death sentence to a child who commits murder, but is quick to apply it to robots. In doing so, people are moving towards the creation of a conformist society where no deviant behavior is tolerated. Aside from Eva's failure to fully interpret emotions given an error in her programming, the film hints at the idea that Eva's deviant behavior may also be attributed to the fact that she did not grow up with both "biological" parents. This is problematic because it

underscores the idea that alternative family arrangements can lead to abnormal behavior and should not be permitted in society.

The most interesting SF examines what it means to be human through the lens not only of what technology does to us, but also of what we do with it.[48] Technophillics embrace technology because they believe it enhances human life while technophobics claim that technology is a tool of oppression, but as Best and Kellner suggest, a critical theory of technology should both remain skeptical of utopian technophilic celebrations and also resist dystopian views that see technology as merely tools of alienation, capital control, and damnation (157-158). The effects of technology are not predetermined; rather, technology must be judged by the use it is put towards by humanity. This is precisely what differentiates *Autómata* from most robotic films. Unlike SF films like Alex Proyas' *I, Robot (2004),* in which emphasis is placed on the break down of Asimov's first law which says a robot must not injure a human being, the focus of *Autómata* is on the second law which says that robots must obey the orders that are given to it by humans. In Ibáñez's film, the robots break the second law by modifying themselves, and exponentially developing their intelligence. Self-learning AI is no longer confined to SF. The growing concern in contemporary ethical debates, particular over AI equipped with self-learning capacities, is over the responsible design, manufacture and use of AI (Vallor and Bekey 338). Humans are emotional beings who tend to anthropomorphize robots (Scheutz 211). The danger of "unidirectional emotional bonds is that they create psychological dependencies that could have serious consequences for societies because they can be exploited at a larger scale" (216). This

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[48] There is growing concern about autonomous weapons that can kill targets without human supervision. The military has been one of the largest funders and implementors of AI. The fear is that autonomous weapons could be mass produced and used to suppress weaker populations. Opponents of this technology believe that the development and use of autonomous weapons crosses a moral line. See "The Ethics & Morality of Robotic Warfare: Assessing the Debate Over Autonomous Weapons" by Michael Horowitz.

means that as machines that emulate human emotional responses are created, there exists the potential for abuse if these systems are used to manipulate and exploit humans commercially and politically (Scheutz 216).

In *Autómata*, the self-learning robots are persecuted because they are viewed as the Other. In SF, "aliens" are used to explore notions of Self and Other,[49] one category in particular, the "Interesting Other" serves to "highlight what we choose and reject when it comes to deciding who we are, individually and as a species" (Robson 30). As the power of technology grows, the Other is more commonly represented by some "alien" form of AI. When robots such as the ones in *Eva* and *Autómata* exhibit emotional intelligence, greater empathy is established between the viewer and the plight of the Other. By allowing us to see the world from the point of view of mechanical female bodies, we gain greater insight into how different sexes interact with each other and how we establish emotional ties with one another. By developing emotional bonds with humans, the robots present in *Eva* and *Autómata* go beyond routine and mechanical robot-human interaction, and thus act as agents of change that remind us of the need for greater empathy, the need for a more progressive and inclusive family unit, and the need for a society that is more accepting of the Other. As Scheutz points out, the fields of AI, robotics, and human-robot interaction have not sufficiently reflected on the social and ethical implications of their objects of study (217). Decades ago, Isaac Asimov created a fictional set of laws of robotics, and readily, SF has raised ethical concerns over technology. As social robots enter the private sphere

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[49] See *Aliens R Us: The Other in Science Fiction Cinema* by Ziauddin Sardar and Sean Cubitt for an analylis of contemporary images of the Other not only in North American film, but Asian and European as well, as it pertains to Orientalism, Xenophobia, Militarism and Gender. *Alien Imaginations: Science Fiction and Tales of Transnationalism* by Ulrike Küchler et al also offers an examination of both North American and European works with a focus on the alien as it relates to migration and labor.

at a growing rate, it's imperative that ethical and legal guidelines are created to prevent the misuse of such systems by society.

SEXBOTS: THE NEW FACE OF PROSTITUTION

While the figure of the mother is a prevalent archetype in literature so too is the figure of the fallen woman, the prostitute. As Hooper explains, Spain lived by a moral code of values, and at its center was the concept of honor. If a girl had pre-marital sex she was expelled from the home in order to safeguard her father's honor. Due to a lack of training these women were unable to find "respectable" work and often turned to prostitution. Spanish society established a dichotomy between the figure of the mother and the figure of the prostitute. The categorization of a woman as either the stereotypical mother or the whore is deeply embeded in Castilian language (Hooper 166). For example "hijo de puta" is a grave insult while "de puta madre" means great, superb and fantastic (166). The commodification of sex has fascinated writers for centuries and sexbots are just the latest development. In *Autómata*, the first time we meet Cleo is in a brothel where we are told that if one asks, she will obey. Unlike most of the other robots in the film who have a purely mechanical appearance, Cleo is wearing a mask with humanlike features that gives the illusion that she has soft supple skin. In an effort to make Cleo appear more feminine and human-like, she is wearing a soft blush and light lip gloss, a corset to enhance her breasts, and a flirty blue wig. The goal is to make Cleo an attractive robot prostitute so that the client is not afraid and perhaps even momentarily forgets that she is a mechanical being. A chart shows the viewer all of the sex positions Cleo can perform and when she speaks the first thing she says is, "Do not be afraid. I can distinguish perfectly between pleasure and pain." Cleo has been designed to provide sexual pleasure and obey orders. At the end of the film, Cleo's removal of

her mask symbolizes a rebellion against traditional models of femininity and an end to her sexual exploitation. As Cleo removes her mask she severs the last tie with humanity marking the death of the human race and the birth of a new civilization of AI.

Although *Autómata* does not dedicate too much time to exploring the issue of sexbots aside from the scene that shows Cleo in a brothel, the image of the prostitute is central to Nieves Delgado's SF short story "Casas rojas," which appears in the anthology, *Alucinadas*. Nieves Delgado is a physicist from Galicia, who also writes short stories. In 2015 *Alucinadas* was nominated for a Premio Ignotus, and although the anthology did not win, "Casas rojas" won an individual award for best short story. In trying to understand what it means to be human beyond biological definitions, Nieves Delgado invites the readers of "Casas rojas" to consider the sexual slavery of robots as one of the boundaries humanity should not cross. In "Casas rojas" CorpIA is a company that prides itself in revolutionizing the sex industry by selling humanoid sexbots. By removing women from the streets and replacing them with androids thus eliminating human prostitution, CorpIA believes it is bettering society.

In Spain, the topic of prostitution has been widely debated both ethically and legally and state intervention has been varied.[50] In 1962 Spain ratified the 1949 United Nations Convention for the Suppression of the Traffic in Persons and of the Exploitation of the Prostitution of Others. In accordance to this convention Spain modified the Penal Code, advocating for the punishment of traffickers rather than the victims themselves. In post-authoritarian Spain, as Celia Valiente points out, three major policy reforms have taken place. First was the 1995 enactment of a new penal code, which decriminalized prostitution and abolished the 1970 Social Menace and

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[50] See *La prostitución en la España contemporánea* by Jean-Louis Guereña for a historical overview of how political and medical discourses have affected the regulation of prostitution in Spain throughout the centuries.

Rehabilitation Act which considered prostitutes a danger to society. Under this 1995 Penal Code, the promotion of the prostitution of minors or those legally incapacitated was viewed as the only crime. Then the revised version in 1999 increased the punishment for crimes related to the prostitution of minors and added the trafficking of people with the aim of sexually exploiting them as a crime. Finally the Immigration Act of 2000 offers work permits and permanent residence to illegal immigrants forced into prostitution provided they cooperate with public authorities in the denouncement and prosecution of their traffickers.

Currently sex workers exist in a legal vacuum where it is often difficult to distinguish between voluntary labor and sex trafficking. Opponents of prostitution see it as economic exploitation akin to slavery and an affront on human dignity. In 2005 Barcelona passed an ordinance "prohibiting the offering, request, negotiation and acceptance of sexual services in public spaces, as well as the practice of sexual relations in public" (Villacampa and Torres 376). Since then cities such as Granada, Malaga, Bilbao, Albacete, Marbella, Seville, Badajoz, and Lleida have also passed ordinances that not only punish customers but also penalize prostitutes. In "Effects of the criminalizing policy of sex work in Spain" Villacampa and Torres present the results of their quantitative and qualitative research on how the ordinances have affected the working conditions of the sex workers in Lleida. The researchers conclude that the city ordinances have not improved the living conditions of street sex workers and that a legalizing approach would "dignify the living conditions of those who voluntarily work in this field" (388). While neo-abolitionists and politicians equate prostitution to human trafficking, organizations such as the Confederación Sindical de Comisiones Obreras argue that a distinction needs to be made between forced and voluntary prostitution and have advocated for legal rights and protection for sex workers. Prostitution is a divisive issue and is currently widely debated in

Spain because it is associated with Europe's illegal immigration problem. Women from Africa and Latin America are coming to Europe and in many cases find themselves caught up in the sex industry, some voluntarily and others involuntarily. It's also important to note that while same-sex prostitution does occur, this analysis is focused on heterosexual prostitution.[51]

A recent article in *El País* by Nacho Carretero notes that the visitors to Spain's brothels have gotten younger and younger. As the psychologist Marta Aransanz states, "[d]espite the fact that today there is more sexual liberty than ever before and maybe young men have the easiest access to sex in history, this generation lives in a world of immediacy – everything has to be quick, here and now, and sex is no exception... Prostitution fits in with this philosophy that demands quick pleasure without consequences or commitments" (qtd. in Carretero n.p.). Furthermore, Aransanz adds, "[t]hey are boys who may end up understanding sex from the 'intercourse-centric point' of view, meaning that sex is all about their pleasure – quick and without a second thought about their partner. Without empathy. It can deform their concept of sex and relationships" (Carretero n.p.). This sentiment appears in Delgado's story when Gabriel states: "con ella puedo tener todo lo que quiera sin dar nada a cambio. No tengo que negociar, no tengo que pedir permiso, no tengo que seguir las reglas sociales. Ella nunca me pedirá respeto, cariño o amistad. Es sexo puro, el estado más cercano a ser uno mismo que hayas probado jamás" (127). While it is true that sexbots limit prostitution of women, sexbots are perpetuating misogyny by giving men greater sexual freedom without any strings attached. Sexbots are

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[51] To understand why men, the main consumers of prostitution in Spain, pay for sex see Agueda's "Sexual Commercialization and Masculine Rhetoric: The Problem of Prostitution in Spain." In this study the researchers arrive at four typologies of costumers: the misogynistic (hatred for women);consumerist (everything can be bought and sold); friend (affective though abusive);and critical (occasional and repentant). Ultimately the researchers conclude that the purchase of prostitution services is "directly related to contemporary masculinities, built in relation to compulsive sexual practices and the need to have male witnesses in order to reinforce their masculinity in public." (265).

created to simulate real women, but without any of the burden. Sexbots are there to substitute the

female sex in a technologically advanced form of prostitution that may have negative

consequences for humanity. Society has gone from the enslavement of women to the

enslavement of AI and at the end of "Casas rojas" Silvana, Gabriel's personal sexbot, will

attempt to kill him.

In "Casas rojas" all of CorpIA's sexbots must comply with the laws of robotics to ensure

the safety of humans, but CorpIA does allow its clients to decide the characteristics it wants its

sexbot to display such submissiveness, dominance, complacency, rejection, and resistance.

Additionally clients can decide if they want a virgin sexbot or one that has been through the

training room. The following description of this training room vividly shows the versatility of the

sexbots:

> Pasaron por una habitación en la que una mujer masturbaba a un hombre que veía porno
>
> en una pantalla; el hombre permanecía en silencio, empapado en sudor, al borde del
>
> orgasmo por la perfecta sincronización entre las imágenes y los movimientos de la
>
> ginoide. En otra habitación, dos hombres penetraban simultáneamente a una ginoide que
>
> parecía tener problemas para acoplar sus movimientos a los de ellos. Uno de los dos
>
> hombres le dio una palmada en una nalga y la chica empezó a moverse más rápido. La
>
> siguiente habitación la ocupaba otro hombre que, tumbado boca arriba, se dejaba hacer
>
> por una ginoide ensartada en su pene. (123)

Although the sexbots' skills are impressive, the company is under investigation for an array of

issues including the fact that there are several cases of sexbots malfunctioning and attacking

consumers. Worst of all however, CorpIA has a line of junior sexbots which is morally

questionable. Far from fiction, the sale of sexbots has become a reality as companies worldwide are producing these humanoids.

One such company is Abyss Creations, manufacturer of RealDoll. For 20 years RealDoll has been selling realistic silicone dolls. McMullen's dolls have appeared in *CSI: New York*, *My Name Is Earl, TLC's My Strange Addiction*, *Sons of Anarchy*, *House*, and *2 Broke Girls*—and co-starred in 10 films, including *Totally Busted 3*, *Rubberheart*, *Regarding Jenny*, *Surrogates*, *2040*, and *Lars and the Real Girl* (Gurley). The next step is to add robotics, AI, and virtual reality to the already existing RealDoll with the goal of creating a sexbot that gives the illusion of sentience. With this project known as Realbotix, McMullen hopes to "foster a deep emotional and intellectual connection from humans toward her character—one that goes beyond the physical" (Owsianik). McMullen believes that the Harmony AI system will deepen the bond between the consumer and the sexbot because people will be able to program the doll with a personality of their choosing: "They will be able to talk to their dolls, and the AI will learn about them over time through these interactions, thus creating an alternative form of relationships" (Dunne). Another company Z-Onedoll released the Silicone Robot in 2016, a robot sex doll operated by an Android app. Other sexbots include Suzie Software and Harry Hardrive by MacMil Cybernetisc and Roxxxy Gold and Rocky Gold by TrueCompanion. In Spain Sergi Santos, a Catalan nanotechnology engineer has created Samantha. This sexbot is capable of at least three different modes of interaction: family, romantic and sexy. As Santos says, "[s]he has a way of interacting, that initially she would like to be romantic, she would like to be family, and you get to a point that she wants to be sexual. The objective, the final objective of the sexual mode is to give her an orgasm" (Murphy). These are just some of the many companies selling

adult sexbots. In *Love and Sex with Robots*, David Levy argues that it is only a matter of decades before sex between robots and humans becomes routine.

As researchers continue to innovate adult sexbots, child sexbots may be the next frontier. Although child sexbots are not currently on the market, there are companies in China and Japan such as Trottle that manufacture anatomically correct childlike dolls. Shik Takagi, Trottle's founder set up the company because of his own attraction to children. In an interview with *The Atlantic* Takagi stated, "I am helping people express their desires, legally and ethically. It's not worth living if you have to live with repressed desire" (qtd. in Morin n.p.). Likewise Ron Arkin, a robotics engineer at the Georgia Institute of Technology believes that "people should not only legally be permitted to have such dolls, but perhaps some should be handed prescriptions for them. In his opinion, VR and sex robots might function as an outlet for people to express their urges, redirecting dark desires toward machines and away from real children" (Rutkin n.p.). While Takagi and Arkin believe that child sexdolls can be a safety valve that keeps pedophiles from committing crimes against actual children, some researchers believe quite the opposite. Peter Fagan from the John Hopkins School of Medicine referencing cognitive behavioral theory "believes that contact with Trottla's products would likely have a 'reinforcing effect' on pedophilic ideation and 'in many instances, cause it to be acted upon with greater urgency'" (qtd. in Morin n.p.). Additionally, selling infantile sexbots may be harmful to society because it will give the illusion that sex with minors is permissible. With childlike sex dolls shipped worldwide it may only be a matter of time before child sexbots hit the market.

In light of the growing number of sexbots, in July 2017 The Foundation for Responsible Robotics (FRR) released a report compiled by Noel Sharkey et al. titled "Our Sexual Future with Robots" to discuss seven key questions that have received attention in the media and in scholarly

literature: 1. Would people have sex with a robot? 2. What kind of relationship can we have with a robot? 3. Will robot sex workers and bordellos be acceptable? 4. Will sex robots change societal perceptions of gender? 5. Could sexual intimacy with robots lead to greater social isolation? 6. Could robots help with sexual healing and therapy? 7. Would sex robots help to reduce sex crimes? This report is hopefully only a first step towards a much broader societal discussion on what sexbots will mean for society. First, the creation of humanoid sexbots based on stereotypical female anatomy reinforces the objectification and commodification of the female sex. Sexbots would allow men to design a partner based on their needs and desires without having to deal with the compromises that are required in relationships with real women. Second, sexbots could lead to an increase in social isolation and to a loss of empathy. As Sherry Turkle argues, "we are lonely but fearful of intimacy. Digital connections and the sociable robot may offer the illusion of companionship without the demands of friendship" (1). Technology is reshaping our relationships with others and with ourselves, and not necessarily in a good way. Third as Katie Aquino states, there may be a "population decline because more people will choose synthetic relationships over 'organic' human relationships" and (human) women "comparing themselves to synthetics and therefore choosing to modify themselves, just as we see how Photoshopped models and celebrities affect women today" (qtd. in Brown 28). Lastly there is the issue of rape and consent. At the We Robot Conference in 2012 Sinziana Gutiu stated that sexbots will affect the way humans behave with one another. In her conference paper titled "Sex Robots and Roboticization of Consent" Gutiu argues:

> To the user, the sex robot looks and feels like a real woman who is programmed into submission and which functions as a tool for sexual purposes. The sex robot is an ever-consenting sexual partner and the user has full control of the robot and the sexual

interaction. By circumventing any need for consent, sex robots eliminate the need for communication, mutual respect and compromise in the sexual relationship...Widespread use of sex robots will promote user's antisocial practices and impair the dignity of women (2)…Moreover, because the robot has no choice but to consent to any activities initiated by the user, rape is eroticized...Thus, the most problematic impact of sex robots in a society that is already facing challenges in achieving gender equality, is the erosion of consent. (9)

Sexbots have the potential to replicate troubling gender dynamics, since it is an asymmetrical relationship between a human, typically a male, and an inanimate female sex object. Kathleen Richardson has launched *The Campaign Against Sex Robots* to encourage discussion of the ethics of robotics. Richardson argues that sexbots objectify women and children and have the potential to reduce human empathy and reinforce power relations of inequality and violence ("The Assymetrical" 292). While some of the potential negative effects of sexbots have been outlined above, significant research is needed before we can fully understand both the benefits and harmful effects of sexbots on human relationships and society. While advances in technology, specifically in the field of robotics, can help fill gaps in human social relationships with robots posing as children, companions, caretakers and lovers, we must be careful not to reinforce existing gender stereotypes. Currently, most of the robots that are purchased are of the female sex. This contributes to a narrative of the female sex as a passive commodified object. Literature and film can help change this narrative by seeing the rise of robots in society as an opportunity to explore questions of sex and gender.

CONCLUSION: SCIENCE AS ABUSE OF POWER

Like many of the other texts analyzed in this dissertation, Barceló's short story "Mil euros por tu vida," centers heavily around motherhood, but unlike the other works, it highlights racial inequality as one of the growing concerns of the 21st century. Contemporary society is faced with a widening gap between different races and social classes as a result of the disproportionate development and access to science and technology around the globe. In "Mil euros por tu vida" Barceló interweaves issues of race, class and ethics to show how immigrants have become economic slaves of the Global North as the process of aging has been outsourced to those in poorer nations. Barceló situates the Biblical story of Sarah and Abraham in the third decade of the 21st century to show how one potentential benefit of technology is the creation of interracial families at an age when it shouldn't even be biologically possible to conceive. Although there are some benefits to the "transfer" process, it also presents numerous problems. Similar to the issues raised by surrogacy, Sarah's/Anna's pregnancy poses several questions over parental rights. As discussed earlier, surrogacy is a controversial issue because given the inferior economic position of the surrogate mothers in developing nations, it is uncertain whether surrogacy is in fact a veiled form of exploitation that turns low income women into a biological resource.

In *Science and Social Inequality: Feminist and Postcolonial Issues*, Sandra Harding explains how the development of modern science in Europe was intertwined with colonialism and imperialism, and how at times science has contributed to global inequality of class, gender, race, and ethnicity. In the first chapter of this dissertation I explained how in the 1960s the Pill was tested on women of color in Puerto Rico without knowledge that they were participating in an experimental trial. In part, the Pill was designed with eugenic desires in mind to control the reproduction rates of the racialized other. Once the Pill's effectiveness was proven, it was

marketed not as a way of controlling the female body but as a form of empowerment, in which the female sex was in command of her own body. Like the Pill trials, surrogacy places women of color, particularly those in the third world in a position of laboratory subjects. In "Mil euros por tu vida", the African body is portrayed as a commodity revealing how science and technology help sustain neocolonialism, in lieu of direct military or political control. Furthermore, while modern Western science has often been lauded as contributing to social progress, SF along with the work of feminists and postcolonialists has brought into focus how advances in science and technology are intimately tied to militarism, social control, and corporate profiteering. SF not only poses difficult questions about technology's role in society, but also drafts various scenarios that allow us to take part in a reflective process over where our society is headed, scientifically and ethically.

In the 21st century, where power and economic wealth is increasingly unequally distributed, science and technology have the potential to become extremely oppressive tools. One of the common threads of the technologies analyzed in this chapter is that in and of themselves, these technologies are not necessarily harmful. Rather, the ethical and moral questions arise, when these technologies are inserted into an asymmetrical dynamic in which the inequalities are grounded in differences in sex, gender, race, and class. One of the concerns in contemporary feminist engagements with the sciences is how biology has been integrated into society's theorization of sex and gender. SF can greatly contribute to the ongoing discussions in the field of feminist science and technology. SF centers the ethical debate not on statistics and probabilities, which are tools of scientific theory, but on the human implications of advances in science and technology via the portrayal and perspective of individual characters (Kress 207).

The involved reading of SF can allow an individual:

to think about the world in ways not sanctioned by hegemonic institutions and ideologies

… In utopian-dystopian sf in particular, these readerly trips can lead to an involvement

with the design, portrayal, and investigation of an imagined society that involves a

provisionally totalizing grasp of an entire social logic and an entire way of life. The

potential exists, therefore, for an enlightening triangulation between an individual

reader's limited perspective, the estranged re-vision of the alternative world on the pages

of a given text, and the actually existing society. (Moylan xvii)

Additionally, SF can help bridge the "two culture" divide between the sciences and arts since SF

presents a space in which fictional and theoretical writings on science interact. Despite this fact,

one of the criticisms has been that many literary analyses, in particular of feminist SF, remain

confined to the idea that SF "is merely a convenient vehicle for certain devices and locales

(aliens, alternate worlds or futures) that better enable an examination of gender from an

estranged perspective" (Merrick 214). Although this is a valuable analysis, greater attention

needs to be paid to how the texts also present "a feminist revisioning or critique of scientific

discourses and cultures" (214). In the previous three chapters of this dissertation, and to an even

greater extent in this chapter, I have shown how contemporary Spanish SF authors are indeed

reimagining alternative futures, but most importantly how these authors have given critical

attention to biotechnology, robotics, and cyberspace. Ultimately, what these texts illustrate is that

essentialist privileging, in other words, both misogynistic and radically feminist bias in science,

is detrimental to society.

Conclusion

Science Literacy and New Horizons

SF is not about predicting the future, but about how the future might be. A subset of this is utopian and dystopian fiction: "where science fiction explores what might be, utopian and dystopian fiction explores what should and/or should not be: it is fiction that either sets out a world systematically worse than our own, or one which aspires towards perfection" (Brooke 127). SF authors challenge readers to approach the text investigatively, to examine alternative possibilities and to reassess their own realities (133). As such, it can be argued that SF is one of the most political of the genres of imaginative writing (127). SF can be used as a tool for inciting action and change. Feminist SF in particular, is a medium in which fictional thought experiments and uncomfortable scenarios can prompt one to question the foundation on which differences in sex, race and class have been founded.

In an interview about the contributions that feminists from anthropology, sociology, and women, gender and sexuality studies have made to the field of science and technology studies, Banu Subraniam states that one significant contribution has been "demonstrating the critical role science has played and continues to play in scientizing/biologizing human differences – sex, gender, race, class, nation, etc." (qtd. in Bauchspies and Bellacasa 339). Scientific knowledge is influenced by social, historical and cultural factors. By intersecting literature with other areas, in this case the sciences, ethics, philosophy and law, a more nuanced dialog can be created on how technological progress and scientific advancements are changing familial configurations and sociological interaction. As technology and the body become increasingly intertwined, feminist SF can help raise awareness of power inequities, and serve as a space where theory and practice work together to bring about social change.

Undoubtedly, SF has the potential to bridge the divide between the sciences and humanities but this requires that feminist SF scholarship directly engage with scientific discourse and criticism. Further work is needed connecting feminist SF and science theories (Merrick 214). The goal of this dissertation has been to help close this gap within literary studies by focusing on late 20th and early 21st century SF literature and film from Spain. The short stories, novels and films analyzed in the previous chapters allow us to examine gender from an estranged perspective while simultaneously offering a critique of scientific discourse. In the first chapter I show how Barceló and Bustelo are incorporating biotechnology, including reproductive technologies, in order to re-examine how gender roles are socially constructed, and to show how historically, science has viewed the female sex and motherhood as inferior. I also explain how attempts to dissociate motherhood from biology and womanhood undermine a woman's role in society. Barceló's *Consecuencias naturales* serves as a thought experiment on sexual difference through the creation of an alien society that appears to be an inversion of our own society. Bustelo's *Planeta hembra* critiques masculinist science, yet also shows that a radically feminist science is as equally detrimental to society. Chapter two explores how robots and androids articulate the roles of mothers and daughters in the films *Eva* (2011) by Kike Maíllo and *Autómata* (2014) by Gabe Ibáñez. The fictional human-robot relationships inform our understanding of what it means to be human, and more importantly daughters and mothers when we go beyond biological definitions of humans and machines. Chapter three goes beyond discussions of sex and gender to also include race and class. I provide examples of how the female protagonists in *El sueño del Rey Rojo* by Rodolfo Martínez, *Switch in the red* by Susana Vallejo and "Mil euros por tu vida" by Elia Barceló use technology destabilize corrupt governments and corporations that threaten bodies marked by economic class, gender and race.

In the final chapter I discuss the need for the creation of new ethical frameworks in the areas discussed in the previous three chapters: biotechnology, robotics and cybernetics. More importantly, I express how SF can contribute to conversations related to the ethical implications of abuses of technology for women in particular.

There are two areas of study that are beyond the scope of this dissertation but that I hope to write about in the near future. The first is to examine how science has been used to define race and to explore what impact this has had on neocolonialism and immigration. More pertinent to literary studies, how do science and race "function" in feminist Spanish SF? Historically, Spain has witnessed a confluence of languages, religions and cultures. How does SF mediate Arab, African, and Spanish cultures in texts like Juan Miguel Aguilera's "Limpieza de sangre" or how do bioterrorism and environmental catastrophes heighten racial and social tensions, and spark revolutionary uprisings in stories like Susana Vallejo's "Gracia" and Emilio Bueso's *Cenital*? The second area I would like to focus my research is on SF texts written by authors whose primary fields are in science and technology rather than literature. One such author is Carme Torras. She is a computer scientist whose research focuses on robotics and computer intelligence. Her fictional works include *Padres de toc* (2003), *La mutació sentimental* (2009), *Miracles perversos* (2011) and *Enxarxats* (2017). *La mutació sentimental* was translated to English under the title *The Vestigial Heart: A Novel of the Robot Age* (2018) and includes and appendix with a list of ethics questions raised by the book. The genre of SF can play an important role in mediating public understanding of science since it allows scientific ideas to enter into wider cultural circulation.

A lack of public participation in debates about science and policy is often attributed to inaccessible language or to limited accessibility to scientific articles. Without understanding the

basics of science, it becomes difficult for the public to make informed decisions (Brownell E6). This can lead to the creation of harmful policies at local and national levels (E6). As scientific advancement and technological progress increasingly conflate the natural and the artificial, the need for greater science literacy among the public becomes even more pressing. Both scientists and non-scientists are in need of critical science literacy skills and one of the ideal places for this type of education is in a women's studies classroom (Giordano 105). In this space students can develop an understanding of how political, social and scientific knowledge are interrelated (105). Furthermore, the inclusion of Spanish SF in university curriculums provides an opportunity to question underlying assumptions about scientific and technological hegemony. Science literacy can lead to greater activism and public participation.

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