SHE COULD'VE BEEN A GREY BOX:

DEPICTIONS OF GENDER IN EX MACHINA

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of

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By

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ABSTRACT

Depictions of Artificial Intelligence gynoids in science fiction film and television are

problematic in that they portray over-sexualized, sexist, and stereotypical versions of

femininity, and reinforce a binary of men as brain and woman as body. The first section

of the text explains how frameworks from Chicana feminism, cyberfeminism, and futurist

Alternative futures are applied to films *Ex Machina* and *Blade Runner 2049*, television

series *Westworld*, student film *The Future of Marriage*, and Intel promotional materials.

The Literature Review section explores the history behind computing, how technological

spaces are viewed as masculine, and most users online are assumed male and white. Also

explored are concepts of transcendence, singularity, and liminality. Through analysis of

films, a show, and promotions, a feedback loop of patriarchal noise is uncovered. This

work seeks to demonstrate possible correlations between science fiction depictions of the

female and how these depictions impact the perpetuation of patriarchal domination to the

subjugation and detriment to women and the feminine, and argues that sexism is

amplified through technology, and technological spaces can be recoded to create a

transformed society.

Keywords: gender, Artificial Intelligence, liminality, *Ex Machina*, science fiction

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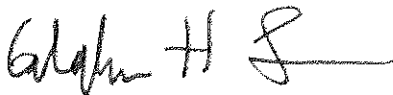
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CHAPTER 1: INTRODUCTION

I have always had a fascination with depictions of other worlds; as a child I was obsessed with the idea of mermaids and underwater realms, as a teen I relished in the occult and the spirit world, and as an adult, I've become increasingly interested in worlds of science fiction, a world that looks not unlike our own, but are visualizations of a near future. In these worlds, I looked for representations of strong female figures; the deadly siren, the wise *bruja* (witch), and the robust gynoid.

Studying both feminism and futurism blended my visions of and desires for a female world, and I eagerly searched for science fiction alternatives to the mundane, patriarchal world in which I exist. After revealing my newfound love of science fiction, and my growing interest in Artificial Intelligence (A.I.), a dear friend recommended the film *Ex Machina* (Garland, 2015), a film that combined the two.

I watched the film eagerly, but after about the first ten minutes, my excitement turned sour. The film was predictable and trite. I watched it again, and after the second viewing was left with the same dull, hollow feeling. The film had all of the elements I was looking for, but something was missing, something I couldn't understand or identify. I tried watching *Westworld* (Abrams, 2016), a television reboot of an old Seventies film (which was derived from a Michael Crichton novel) that held a similar premise of a gynoid uprising against unjust

captors, but was again left with a nagging feeling of discontent. A gynoid refers to a female robot. Robots who are ambiguously or male gendered are called androids. Androids may also be referred to as female androids, but for clarity purposes, in this paper I will refer to them as gynoids. That unsettled feeling remained long after I finished *Westworld*.

It wasn't until I was at a party in which the host continually bragged about his new Alexa home assistant device that the fragmented pieces of what was gnawing at me began to come together. Alexa, Siri, and Cortana, all marketed as digital personal assistants, are all gendered female.

Now, of course these digital personal assistants serve both male and female consumers, however, there is a discrepancy among genders working within the technology sector. I thought back to *Ex Machina* and it clicked; the A.I.'s in the film and the digital assistants in real life are gendered female. I wondered about the history of technologies that would allow for the creation of Alexa and the like, and that would perhaps one day subsequently allow for the creation of a female artificial intelligent being with a mechanized body like Ava from *Ex Machina*. In this work, I sought to investigate the reasoning behind gendering A.I. machines; could it perhaps be because these technologies are created by males and that the machine's sole purpose is that of servitude?

The problem with males creating female-like artificial intelligence is that they lack the clarity and insight of an actual female mind to do so. Without female

creators, their conceptions are entirely dependent on outdated societal gender expectations and stereotypes of what it means to be female. I set out to research the technology behind these digital assistants in order to understand why the female gender was depicted in this way so that I may begin to explore what can be done to change these depictions.

Whereas my previous work has investigated the harassment of women in technological spaces, this work seeks to explore the removal of women and the replacement by female Artificial Intelligence (A.I.) in technological spaces within the realm of science fiction. I engage academic texts, interviews, and pop culture texts in my literature review to create an understanding of the origins and possibilities of A.I. technologies and representations. I utilize the film *Ex Machina* as my primary text for investigation and analysis, and juxtapose the film with another motion picture, *Blade Runner 2049 (Scott &* Villeneuve, 2017), and the television show *Westworld* in order to highlight similar topics and themes. I also look at some of the ways technology is geared towards men and women through wearables from IBM, and a trajectory of the future of marriage by students of futurism to compare and contrast the ways in which gender is expressed through technology.

As you will read, the connection between gender and technology is not new, nor is the critique of gynoids. However, with rapid advances of technology, and as we become increasingly reliant on technology, we must continue to

critically examine what gendered technology reveals about implicit biases within

our society, and how we can utilize technology to begin to shift outdated

narratives and endless misogynistic feedback loops. Science fiction films and

shows that depict female A.I. are riddled with offensive stereotypes that expose

and amplify a deeply ingrained and pervasive misogynistic mindset.

CHAPTER 2: METHOD

Women in science fiction are often sexualized and serve as objects of male sexual desire. This extends to gynoid s depicted in the female form, who serve as literal sexual objects controlled by male programmers or engineers. These portrayals are problematic because they reinforce limiting patriarchal constructions of female and femininity as subservient to the whims of male carnality. These representations in turn affect the male social imaginary, as women are sexualized, fetishized and othered. This skewed view of women then begins to affect social spheres, especially within male dominated systems such as technology.

Women who wish to enter these spaces are met with barriers such as hostility, discrimination, and the expectation to conform to male standards. Absence of women in these spaces generates further distortion or suspicion of women and the feminine. Thus, these representations breed a cyclical pattern of hegemonic misogyny, wherein the individual self is caught within a cybernetic feedback loop of stereotypes within society, the physical world, and in symbolic representations. This work explores whether in changing and recoding dominant narratives it is possible to break this feedback loop.

This work is a case study which takes a discursive Chicana feminist approach alongside a cyberfeminist and Chicanafuturist approach to offer a textual analysis of the science fiction film *Ex Machina* in the hopes of uncovering not only representation of the female but also the reasoning behind the desire of expressing a non-human entity such as an gynoid as an imitation of a human female. In this textual analysis, I am drawing upon a method of close reading, where "the close reading of specific texts often provides both data and methods for comprehending larger discursive formations, and shifting interpretations of cultural and ideological scenes open space for new readings of texts" (Leff & Sachs, 1990, 257). Because I am using audiovisual texts, I diverge slightly and use close viewing instead of reading, using visual rhetoric from the texts. I blend this

method of textual analysis with Chicana feminism, cyberfeminist, and futurist approaches in this investigation of media depictions of gender and Artificial Intelligence.

Chicana feminism springs from the traditional feminist movement in which Chicana feminists felt that feminism was not equipped to address the experiences of Mexican American women. It is distinct branch of feminism in that it deals with multiple and sometimes interlocking oppressions. Issues of and relating to borders, identity, language, colonialism, dualisms (specifically the virgin/whore dichotomy), and machismo are key elements of Chicana feminism. Chicana feminism seeks to break borders and dualisms through hybridization; acknowledgement of language as living, evolving and fluid, and reclaiming power in resisting colonialism through a decoding and retelling of narratives in order to construct one's own identity. Specifically, I am utilizing a framework of Gloria Anzaldua's seminal Borderlands theory, which seeks to legitimize the dual epistemology and lived experiences of Chicanos and Chicanas. Essentially, Anzaldua argues for a fluidity of self, a duality that embraces all parts of the self, and for embracing nepantla, a Nahuatl word denoting the understanding of the self as neither here nor there. This theory shares overlap with the cyberfeminist theory of liminality, which calls for looking for the spaces of inbetween-ness that are the spaces of transformation. In this work, I am viewing the science fiction media through the lens of Chicana feminism, cyberfeminism, and Chicanafuturism.

Chicanafuturism stems from Afrofuturism, which uses "science fiction themes such as abduction, slavery, displacement, and alienation to renarrate the past, present and future of the African diaspora" (Ramirez, 2008, p. 186). Chicanafuturism examines colonial and postcolonial histories and survival through works of science fiction and also explores how "new and everyday technologies" can be used to "transform Mexican American life and culture" (Ramirez, 2008, pp. 186-7).

Cyberfeminism is a school of feminist thought which "offers a route for reconstructing feminist politics through theory and practice with a focus on the implications of new technology rather than on factors which are divisive" (Patterson, 1998, para. 6). Cyberfeminism is concerned with how new technologies are constructed and utilized. The cyborg is significant in cyberfeminist theory for through the metaphor of the cyborg, Western dualisms and mythologies can be subverted (Haraway, 1991, p. 175).

Chicana feminism, Chicanafuturism, and cyberfeminism all express the desire to recode stories and beliefs in order to achieve transformation. For instance, Harraway (1991) writes of La Malinche, a female translator to conquistador Hernan Cortes who has for centuries been scorned and labeled a traitor to her people: "women of color have transformed her from the evil mother of masculinist fear into the originally literate mother who teaches survival" (pp. 176-7). The recoding of the story of La Malinche is an example of "liminal transformation" (Haraway, 1991, p. 177). In using these frameworks to examine science fiction texts, this work hopes to discover possibilities for liminal transformation in how women are represented and perceived and offer ideas on how to further proliferate these changes.

To further solidify the themes found in *Ex Machina*, other texts will be referenced to both show similarities in the depictions of gynoid and other A.I. characters, and to offer alternative, liminal transformations of these narratives. These additional texts are not meant to distract, but rather, using feminist and futurist framework, serve to emphasize stereotypes of the feminine gender and sexuality that are found in science fiction depictions of female artificial intelligence technologies and provide alternative readings to investigate possibilities for liminal transformation.

Rather than an exploration of the performance of female gender, this work is an investigation of the conception of the female through the male imagination and the

implications of those depictions in technological public spheres, and how those representations may be subverted to create liminal transformation. The significance of this analysis is to explore correlations between science fiction depictions of the female and how these depictions impact the perpetuation of patriarchal domination to the subjugation and detriment to women and the feminine.

In utilizing futurist methods, I will draw heavily from Jim Dator's Alternative Futures method in analyzing projections of the future of the feminine with regards to artificial intelligence in popular culture. According to futurists, there is no one singular future, but rather a series of possible future scenarios as method known as Alternative Futures (Dator, Sweeny & Yee, 2014). The trajectory of the first scenario is one of either Continued Growth or, in times of a weak economy, Renewed Economic Growth (Dator et. al., 2014). The second scenario is that of Collapse, in which economic or political systems are unsustainable, or a foreign or intergalactic invasion occurs, or finally, a massively destructive natural disaster wreaks havoc on multiple systems and ways of life (Dator et al., 2014). Thirdly, a Disciplined Society is one in which life is ordered by spiritual, ideological or cultural beliefs (Dator et al., 2014). The final scenario is that of a Transformational Society that embraces heavy use of technology. The Transformational Society surpasses the Informational Society that theorists like Ray Kurzweil (1999) suggest into a Dream Society in which all growth and transformation is valued, as biological life has merged with artificial life and all may even reside on an artificial Earth (Dator, 2014).

I chose to do a case study of the film Ex Machina because I believe it contains a rich imagining of a possible future trajectory, one that I would like to be avoided. As it stands, women have been made to feel unwelcome into certain professional and technological spheres, and delving into conceptions of female and a technological landscape with gynoid Artificial Intelligent beings reveals much about why that is.

Essentially, I wanted to know what this film reveal about the role of the female, why are gynoids such stereotypical representations and how might we begin subverting these representations? Additionally, in shifting the dominant narrative to an alternative that recognizes the possibility of liminal transformation, is it possible to begin to break the misogynistic feedback loop? These are the central research questions this work seeks to uncover.

CHAPTER 3: LITERATURE REVIEW

Gender and technology

"I was made for you"[1] **-- Origins and access**

In order to effectively analyze science fiction depictions of female artificial intelligence gynoid s, we must first understand the origins of the technology that would allow for such a being to come to fruition and how, due to its paternalistic origins, the marginalization of women (and subsequent stereotypical portrayals of the female gender) in technology is deliberate. In the Victorian era, high society member Ada Lovelace, daughter of poet Lord Byron, was encouraged by her parents to dabble in mathematics to "counter any poetic tendencies," inherited by her father (Van Zoonen, 2002, p. 8). Because of her work in mathematics, Lovelace was invited to work on Charles Babbage's Analytical Engine, an early computer prototype. As a result, "Ada has been credited with being the first computer programmer in history," although Lovelace's involvement as an educated female was an oddity and far from the norm at the time (Van Zoonen, 2002, p. 8). However, Lovelace's work laid the foundation for the next wave of human computers, who were female employees, as well the mechanical computers who eventually replaced them.

In exploring the human-computer interface metaphor of 'computer is woman,' Sheryl Branham, Marianthe Karanika & Margaret Weaver (2011) found that the origins of the computer are steeped in troubling patriarchal, sexist gender roles in which women worked subservient to men. These women, known as computers, performed tedious

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[1] Deschanel, Z. (2008). I was made for you [Recorded by She & Him]. On Volume One [CD]. Durham, NC: Merge Records

calculations for their employers and their labor was considered unskilled, "because these repetitive and mundane tasks were considered as women's work" (Branham et al., 2011, p. 404). Early computer work and was thus gendered feminine and the contributions of women undervalued and overlooked.

Yet, as women entered the workforce in various war-related production industries in staggering numbers during World War II, a shortage in women computers ensued, and this shortage coincided with the demand for computations needed for warfare (Branham et. al., 2011). Thus, the shift from human computers to automated machines grew, and "many of the sexual stereotypes that dispatched women into careers as human computers were capacities that could readily be given to the new computing machines. Attributes such as patience, alertness, tirelessness, and precision, were often described in mechanical terms" (Branham et al., 2011, p. 403). These skills proved invaluable in a mechanized computing system, yet these skills were undervalued when possessed by human female computers:

> Because computer was an occupation held by women, this coupling of women and electronic computers helped businessmen understand what the machines could do for them: electronic computers were the untiring mechanical counterparts of female calculators, only these machines were faster and more accurate. (Branham, 2011, p. 403)

Both machine and human computers functioned to serve men, with the machines programed with these 'female' attributes to enable them to better serve their purpose. In addition, "many computers developed in the 1960's were given women's names: Betsie, Sadie, and Susie" (Branham et al., 2011, p. 404). Not only were computers gendered female, computer advertisements from the '50's through the '70's reveal that the machine

was marketed for use by women who served as clerical support, furthering women's status as subservient (Branham et al., 2011).

Although early electronic computers were originally used by and subsequently marketed to women, these computers were designed and programmed by men, for "only when it was realized that programming was creative, intellectually demanding, and valuable did men begin to take over the profession" (Branham et al., 2011, p. 404). Therefore, though women played a significant role in the conception and use of the computer, and "while women have populated the computer workforce, many of their contributions have been marginalized and in some cases even erased," due to the feminization and devaluation of early computer work and the subsequent shift to the masculinization and ubiquity of computers (Branham et al., 2011, p. 405).

In contrast to the computer, the Internet has hyper-masculine origins. The military is a hyper-masculine system designed to condition its agents into the antithesis of femininity. Origins of the Internet can be traced back to the military industrial complex

> The Internet, a worldwide computer network, was originally a small military network of four computers known as ARPANET. This computer network was   designed to research the feasibility of creating a decentralized system of communication that could survive a nuclear war. Similarly, VR (virtual reality) also had militaristic origins, having been initially envisioned as a tool for battlefield simulations. These origins are clearly acknowledged in every book and article describing current and potential applications of these systems (Patterson, 1998, para. 11).

The conception of the Internet as worldwide systems of computer networks allowed for the expansion of technological possibility through the rapid sharing of information. Though the internet has patriarchal, militaristic origins, from a cyberfeminist perspective the way in which the internet functions can be read as a type of female communication

as, "the net itself has no organising core, but pulls itself together from the bottom-up, replicating networks and making connections, just as women have organised themselves" (Plant, 1995, para. 6). However, "it may be problematic to define these tendencies as positively feminine," though given that the computer was built with perceived feminine traits in mind to better serve (male) users, it is not farfetched to assume those characteristics followed in the production of the internet (Plant, 1995, para. 6).

These militaristic origins are significant because, as in the case of the computer, bias is built into information and technology systems, of which the public still use and participate in today. We must recognize "that the computer was built by men originally to do women's work for them," and this history, "has constricted the vision of what it is possible for computers to do" (Branham, 2011, p. 404). Militaristic origins of the internet and other technologies must be continually examined for "some of these military technologies are already having far reaching effects on women, as for example in ultrasound pregnancy monitoring, telesurgery, robotic medical monitoring and care, and invasive imaging techniques" (Fernandez & Wilding, 2002, p. 25). Furthermore, these technologies should not be without suspect since they are used to push political agendas, further ideologies and serve to "regulate, define, and control populations, and create new gendered, racialized and able bodies through digital means" (Nakamura, 2015, p. 221).

Understanding how and why technology is conceptualized, developed, and used helps to forecast where it may be heading in the very near future. With the advent of the internet and the abundance of knowledge and data available through cellular smart phones, we are moving rapidly towards a digital, information based society. As technology advances and become more ubiquitous, society sees a shift as, "we are living

through a movement from an organic, industrial society to a polymorphus, information

system…" (Harraway, 1991, p.15). These systems are not without bias, as we can

surmise from their origins.

Man, I feel like a woman![2] -- Constructions, Representations and Roles

Technology can be viewed as "a masculine domain…strongly supported by the

fact that the overwhelming majority of actors in design and production are male," (Van

Zoonen, 2002, p. 11). In order to begin to combat this inequality, "a multi-dimensional

understanding of the shaping of gender and technology…" and how gender manifests in

technology must be explored (Van Zoonen, 2002, p. 20).

Gender appears in three sectors: social structures, individual identities, and

symbolic representations (Van Zoonen, 2002, p. 16). The social structure of technology is

one that is still dominated by males and patriarchal consciousness. In a study of stagnant

numbers of women in the science, technology, engineering and mathematic (STEM)

fields at Iowa State University, Lisette Torres (2012) found that the majority of faculty in

these departments are white males, "where female scientists are asked to conform to the

norms of the field, which are defined by male scientists (patriarchy)" (p. 36). Such

inequality of power in the system "produces a social imaginary of females as 'other,'

'outsiders,' wanting to enter the male realm of science. Moreover, there is the expectation

that men will be engaged in an equity program meant for female faculty, suggesting that

men will continue to control who can participate in science" (Torres, 2012, 36). Of

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[2] Lange, R.J. (1997). Man, I feel like a woman! [Recorded by Shania Twain]. On The Woman In Me [CD].
Nashville, TN: Mercury Nashville.

course, Torres' findings constitute a small sample size, but represent a well-documented

larger trend of the lack of women in the academic and professional STEM fields.

Additionally, in an article on diversity at tech company, Google, Lisa Eadicicco

(2016) writes: "Google says that 69% percent of its employees are now male, while 31%

are female" although, "only 19% of Google's technical roles are held by women, while

81% of them are held by men". Furthermore, "women hold 24% of leadership positions

in the company," however, "59% of Google employees are white, while 32% are Asian,

3% are Hispanic, and 2% are black. 70% percent of Google leadership roles and 57% of

tech positions are held by white employees" (Eadicicco, 2016). These numbers suggest

that the majority of women working for Google are white women, and they are relegated

to 'leadership' rather than technical roles. The specifics of what constitutes a leadership

role are not defined in the article. The article does highlight the lack of women in

technical positions and lends weight to Torres' assertion that male domination in these

fields contributes to a social imaginary in which women are othered. This assertion can

be applied to male dominated social structures, of which there are many. However, for

the purposes of this paper, focus remains on the technological realm.

Given this inequality of women in the technological fields, symbolic spatial

representations of gender in technology can be viewed as the separation of tech from the

domestic. Genevieve Bell and Paul Dourish (2007) researched the physical separation of

technology (masculine) from the domestic (feminine) in exploring the functions of

British and Australian male sanctuaries, known as the shed. Bell and Dourish (2007)

found that the shed was a physical manifestation of the desire to keep technology separate

from the domestic sphere: "the shed is not only seen as masculine, but as collective and

aggressive and distinctly apart from women's domains" (p. 932). In the United States, the

shed is re-imagined as a "Man Cave," a room within the home where gaming devices and

home media centers are situated away from the rest of the domicile. The man cave is

depicted in popular culture; the DIY Network even has a home makeover show dedicated

to creating these spaces. In an article in the Journal of Consumer Culture, authors Risto

Moisio and Mariam Beruchasvili (2016) found that man caves function as a site in which

to bask in the masculine identity: "males spaces at home represent men's terrain,

demarcated from women's spaces" (p. 672). However, further academic research in the

communication field concerning man caves is severely lacking, and would be a rich area

for further analysis.

Bell and Dourish (2007) also found that "ritual divisions between male and

female space are frequently maintained through the invocation of danger associated with

female presence in male space" (p. 932). In this context, the discrepancies in the number

of women in technology reinforce the notion that women are othered in male dominated

hegemonic systems. In studying gender and the internet, Lisbet Van Zoonen (2002)

dispassionately writes "male dominance in ICT [Information and Communication

Technologies] research and development is not likely to change…The image of the IT

sector turns out to be a strong prohibitive factor for women who associate IT work with

long working hours, unsociable male colleagues and a male chauvinist culture" (p. 11).

Van Zoonen (2002) then cites hacker Eric Parker, who describes women hackers as

"scene whores," and suggests that the women in this scene are threats whose sole purpose

is to cause discord among the men (p.11). Through this example, we can begin to surmise

what types of threats women pose when in male spaces, namely that their presence causes

rifts in male friendship and impedes on men's ability to embrace and perform their masculine identity.

One way to remove women from male designated systems and spaces is to fashion machines in their likeness, consequently eliminating both the need for humans to perform 'woman's work' and the associated dangers of women in male spaces. From the first electronic computers to contemporary personal digital assistants like Apple's Siri or Google's Alexa, machines with artificial intelligence are rendered female for these purposes to serve the patriarchal hegemonic system. These disembodied female voices have sparked the imaginings of the robotized female body in contemporary film and television. Building off the metaphor set forth by Branham et al. (2011), if *computer is woman*, the next step in a technological advancement would be *A.I. is woman*.

And where is the body?[3] – Bodies, Brains and Dualisms

Though the computer and internet have problematic origins, early internet enthusiasts saw potential in the internet to connect an array of people, visualizing a cyberutopia. Cyber enthusiasts thus adopted a Cartesian dualism mindset, where the mind was freed from the bod y and the internet provided a space for a meeting of pure minds. Megan Boler (2007) dubs this idea "digital Cartesianism," where, "the body is allegedly 'transcended' in virtual environments" (p. 140). This idealization is problematic for, "…lauding cyberspace as merely a disembodied utopian dream masks the processes and performances that re-create and re-enact oppressive normative social structures – both in cyberspace and in our shared bodily space" (Brophy, 2010, p. 931).

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[3] Denton, S. and James, C. (1995). I AM THE BODY BEAUTIFUL [Recorded by Salt n Peppa]. On To Wong Foo, Thanks For Everything, Julie Newmar [CD].

Hence, in cyberspace, although one may have shifted from a physical realm into a digital one where gender (or race) is not immediately identifiable, online and other technological spaces were built and still operate under oppressive hegemonic social structures and the biases of those systems are still quite evident. Due to its patriarchal conception, the internet carries connotations of privilege, and "users online are assumed white –and are often assumed male, middle-class, technologically savvy, and on US-based sites, Christian" (Brophy, 2010, p. 932). Expanding upon these assumptions about users, Lisa Nakamura (2010) argues that bias is built into technology based on the demographics of the programmers, for example, platforms that use avatars to retain online anonymity:

> avatars are constructed from a fairly narrow range of faces, bodies and features. This creates a normative virtual body, one that is generally white, conventionally physically attractive, as well as traditionally gendered, with male and female bodies extremely different in appearance. (p. 338)

Consequently, users are constrained by these limited choices, which reflect a limited view of diversity and a glimpse at the hegemonic forces in power of these structures. Programmers set the parameters of these online spaces. Technology has been and is being produced by those who fit these constraints, and those of us who do not are othered and erased.

Moreover, these spaces require certain sets of privileges in order to access them. For instance, "one requires a body to interact with whatever machine allows a user to join the online, not to mention the financial/technological mean to access the machine itself and the material habit of how to use it" (Brophy, 2010, p. 933). Additionally, the importance of the body in relation to technology cannot be overlooked. Jessica E. Brophy

(2010) argues that we cannot separate our state of being in the physical world once we

enter the online world, for going online is an example of augmentation using intra-

agency:

> The body…is an intra-agential phenomenon, limited and enabled by the
> intra agential phenomena of space and time, as well as other agential
> phenomena. In terms of applying this form of performativity to the online
> experience, one begins to understand and appreciate the complexity of
> recognizing non-humans as agential; that is, the computer as apparatus
> limits and enables (i.e., has intra agency) what the user can 'do' or
> perform online. (p. 938)

Thus, having a body is necessary to both interact with machines and access these sites.

The body and machine have different types of agency, and when combined create

possibility. Through combining the body and technology, we are able to experience a

state of in-between-ness. This state is often misunderstood as transcendence.

Transcendence is not a state of in-between; rather, transcendence can be

understood as an extension of the self after death. The episode 'San Junipero,' in science

fiction television show *Black Mirror* (Brooker & Harris, 2016) gives us insight into how

technology may help us to achieve transcendence in the future. In the episode, dead,

dying or otherwise physically impaired persons may choose to upload a digital version of

themselves to a digital paradise, which is actually nothing more than a large database. In

this way, transcendence functions as reassurance of life after death, as a digital self or

creation outlives the physical self. Thus, transcendence is not and in-betweenness of life

and death. Liminality, on the other hand, is that such state and occurs when one is alive:

> Liminality…is the experience of torsion—the performative act of crossing
> (permeating) a threshold, a transitional act of body-apparatus intra-agency.
> Liminality is the bodily experience that denies the false dichotomy of
> leaving the body behind; it is the simultaneous experience to intra-agency
> among multiple agents. (Brophy, 2010, p. 940)

Therefore, the body is a necessity in accessing online or other technological spaces.

Contrary to the notion of digital Cartesianism, the body is not left behind, nor

transcended but through augmentation is in a liminal state. Thus, the separation of mind

and body is not possible. Additionally, Megan Boler (2007) argues that the physical body

functions as a perceived measure of truth, regardless of one's created online identity:

> Instances in which users 'deceive' others through misleading online self
> representations illustrate precisely how the body functions as the final
> arbiter of truth, authenticity and meaning. You can be whomever you want
> to be online, but quite often you will be asked to reveal your 'true' identity
> – i.e. a shorthand reference to your gender or ethnicity. And once you have
> uttered 'male' or 'female', black' or 'white', there is little fluidity or
> ambiguity about what this nomenclature means. (p. 158)

Consequently, embodiment and lived experience as markers for truth of one's identity

renders the Cartesian dream of pure minds unachievable, for if the supposed truths of the

physical body were revealed, it would then negate the cultivated digital persona.

Given the patriarchal history of computers, militaristic origins of the internet, and

saturation of males in the technological industry, and the amount of privilege required to

access and be welcomed into these spaces, the body cannot truly be separated from the

mind, for "…uncritical acceptance of the body as a *tabla rasa* not only reifies traditional

dualism of mind/body, but also reifies accompanying dualism such as reason/emotion and

male/female," (Brophy, 2010, p. 936).

Furthermore, the illusive digital Cartesian dream proliferates the erasure of

women's contributions to technology by positioning male/mind against female/body as,

"women's work has remained invisible because women have traditionally been given the

role of looking after the body so that men can be free to pursue more cerebral activities"

(Branham et al., 2011, p. 402). Women are thus reduced to body, while men are mind.

These binaries of male/female, mind/body are problematic because they position the female or feminine as the inverse of male or masculine. Jessica E. Brophy (2010) further elucidates the problem with dualisms: "Cartesian dualism is heavily entrenched in western society; the naturalized distinctions between mind/body, rational/emotional, and culture/nature – all of these dualisms are hierarchized; with the first term being dominant" (p. 933).

The binary of man/machine also reinforces the notion of subject/object. Donna Haraway (1991), proposes the possibility of the cyber organism (cyborg) as "a way out of the maze of dualisms" in order to break free of the subject/object binary, for the cyborg will at once be both (p. 181). Haraway's metaphor of the cyborg is alluring because "it resists a capture into the mere grafting of two connected points (the technological and cultural, the natural and artificial, women and technoculture) and encourages instead a sense of movement between them" (Munster, 1999 127). In order to break these binaries, however, one must better understand representations of female. Within science fiction, the construct of gynoid as female combines woman and machine (both othered and subservient to man), which may shed light into how to best utilize Haraway's cyborg metaphor to disrupt the man/machine and male/female binaries.

Hey, man, don't look so scared[4] –A.I., The Singularity, and the male God fantasy

Nancy Paterson calls the depiction of female gynoids, "the desire to anthropomorphize machines and vilify women" (1998, para. 3). As with the first

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[4] Furtado, N. (2000.) Hey Man!. On Whoa, Nelly!. Universal City: CA: DreamWorks Records.

computers, the characteristics given to these machines are supposed to represent

femininity:

> The power which these women wield is evil, technological and, of course,
> seductive. Any influence or control which they exert is clearly misguided
> or accidental. The powerful woman, bitch/goddess, ice queen, gynoid, is
> represented in popular culture as a 21st century Pandora. And the box
> which she hold this time is electronic and very definitely plugged in.
> (Paterson, 1998, para. 2)

Again, the notion of danger associated with women is present in the technological

representation of the female. These gynoid representations of femininity are not created

by women, but rather are created and derived by men's understandings or interpretations

of femininity based on their conceptions of women within their social structure. It is

important to note that human-like gynoids portrayed in popular culture are currently mere

conceptions of science fiction, although research and work is being done to explore

artificial intelligence (A.I. for short) as a realm of possibility in the near future.

However, we must first understand what A.I. is and how its intelligence is

defined in order to analyze female depictions of such beings. Ray Kurzweil (1999)

defines intelligence as "the ability to use optimally limited resources" in order to achieve

goals or complete tasks (p. 73). Francis Heylighen (1999) also states that, "we can define

intelligence as the ability to solve problems" (p. 2). Furthermore, "Artificial intelligence

is inherently defined as the pursuit of difficult computer-science problems that have not

yet been solved" and is "designed to be outwardly subservient to apparent human

control" (Kurzweil, 1999, p. 72, 206). Both Kurzweil and Heylighen explain A.I. as

machines programmed to gather large quantities of information, evaluate patterns and

reach a goal or solution. Though these machines may appear as though they are thinking

independently, they are synthesizing programmed information to interact with humans

(Kurzweil, 1999, 51). In order to judge whether the A.I. can pass for an intelligent being,

a Turing Test is administered:

> a human judge interviews both a computer and one or two more human
> foils using terminals (so that the judge won't be prejudiced against the
> computer for lacking a warm and fuzzy appearance). If the human judge is
> unable to reliably unmask the computer (as an imposter human) then the
> computer wins. The test is often described as a kind of computer IQ test, a
> means of determining if computers have achieved a human level of
> intelligence…Turing really intended his Turing Test as a test of
> thinking…thinking implies conscious intentionality. (Kurzweil, 1999, p.
> 61)

As A.I. advances, the Turing Test will be used to gauge the intelligence (and perhaps

sentience) of machines. Current A.I. is usually a computer program, however, in the

future these machines may take on a more human-like appearance, as depicted in science

fiction films. A common scenario that arises in science fiction is these machines

achieving sentience. Kurzweil believes that these futuristic, sentient humanoid A.I.

(gynoid s) will develop in such a way that these machines will become "companions,

teachers, caretakers, and lovers" to humans (1999, p. 206). It is important to note that

these roles have been traditionally held by women. In revisiting the metaphor by

Branham et al, computer is woman; in Kurzweil's future scenario, the work of these

women has been feminized, mechanized and erased.

Kurzweil (1999) believes if our current technological trajectory continues,

machines will begin to pass the Turing Test in 2029 (p. 279). As A.I. becomes more

powerful, the scenario of A.I. surpassing human ability and intelligence to significantly

alter society is one that many thinkers forecast. This hypothetical scenario is known as

singularity. Singularity will occur by the year 2099 (Kurzweil, 1999, p. 279). Singularity

is often understood as dystopic; the uprising of machines against their human handlers.

Like Haraway, Kurzweil believes a way to avoid this scenario is for humans to become

hybridized, to augment themselves into cyborgs. Kurzweil rationalizes that becoming

cyborgs and embracing technology would change laws to promote the ethical treatment

of A.I. He forecasts a future in which one must be augmented, or risk being left out of

society: "Humans who do not utilize such implants are unable to meaningfully participate

in dialogues with those who do" (Kurzweil 1999, 234). Kurzweil views the possibility of

the singularity through particularly rose colored lenses and remains optimistic in the

potential for both A.I. and cyborg beings.

Francis Heylighen, on the other hand, takes a more pragmatic approach and

argues that the singularity is unlikely to occur. Heylighen states:

> an explosion in intelligence requires an accompanying explosion in the
> amount of information being acquired about the world, and therefore in
> the bandwidth of the channel through which the intelligent system
> interacts with that world. This makes a self-amplifying AI very unlikely
> because an AI cannot extend its physical grasp of the world as easily as it
> could reprogram its informational routines…An even more fundamental
> problem is that AI systems intrinsically have little sense of what is
> important, valuable, or worth doing: the problems they are supposed to
> solve are normally formulated by the user or programmer, not by the
> system itself. Therefore, such systems cannot autonomously decide and
> act outside of their narrow domain of programming. (Heylighen, 2014, p.
> 3)

Heylighen rationalizes that such a scenario would take vast amounts of effort, money and

coordination and would likely take several decades. A.I. would not be capable of being

human-like or sentient despite appearing that way. A.I. could not navigate the world as a

human does, for they could not appreciate certain nuances or complexities, nor could they

understand abstract concepts. Essentially, Heylighen argues that A.I. lack the necessary

abilities to become truly sentient beings, rendering a singularity where machine revolts against its maker quite unlikely.

So why the continued obsession with the idea of the singularity? Theological frameworks may provide an explanation. Theologians Agnes Brazal and Andrea Vinzi (2015) explore the Christian metaphor of the Body of Christ to explore the human desire for transcendence, which they describe as a "longing for transcendent immortality" (p. 158). The Body of Christ metaphor elucidates how, "in the cyber era this image could guide our reflection on the human and on our corporeality, by focusing on embodiment, sacramentality, difference and solidarity" by providing "ways for adjucating or contributing to enhancing cyber conceptions of the body towards solidarity by avoiding cyber-exclusions" (Vinzi & Brazal, 2015, p. 162).

Vinzi and Brazal argue that what is at stake is our very humanness, and that alone should unify peoples against the dangers of technology. In an article for IEE Software magazine, Software Engineer Grady Booch (2015) writes of this succinctly and asks us to "…examine why we fear the rise of super intelligence: we fear it because it calls into question what it means to be human" (p. 9). In our finite humanity, we are afraid that our existence is perhaps existentially inconsequential. To quell these uncertainties, humans naturally look for a way to outlive their limited physical selves, or to transcend. Moreover, Thomas M. King (1987) suggests the idea that humans transcend by becoming gods, as the ideas of God as engineer or programmer, "are suitable images of God for a technological age" (p. 979). In explorations of virtual and real space in relation to the body, Elizabeth Grosz (2000) criticizes Howard Rheingold's visions of disembodied

virtual sex, and offers insight into this God Fantasy and the subsequent objectification of women:

> the common fantasy of a laborless pleasure, a pleasure or desire that has no responsibilities; a work of consumption with no trace, no effect, no cost of labor, no residue – the perfect God fantasy, and a complete obliteration of all traces, of the gaps, the intervals, the remainders of sexual difference. To have sex but to suffer no consequences, to pay no price (bar financial), to bear no responsibility. Something for nothing. This fantasy accords perfectly with the phallicization of the male body only at the unacknowledged expense of the castration of the female body. (p. 45)

Thus, male pleasure derives from the absence of female pleasure, preferring disembodiment to physicality: "the idea of a sexual 'relation' in which the body of a man figures for nothing, hiding itself in the gaze it directs outward to the female body" (Grosz, 2001, p. 43).

However, Grosz (2000) argues that the body "can never be left behind. Transcendence can never occur at the expense of the body. To believe one can transcend the body is to enter a psychosis, a collective (and thus nonpathological) psychosis of male self-surpassing" (p. 44). Munster notes theoretical biologist Claus Emmeche's assertion that it is men who are disembodied, for: "men, he suggests, are unable biologically to carry life and engage in this level of materiality and so, by implication, pitifully resort to inventing something of their own, and thus Artificial life is born" (p. 125-6). This view perpetuates the male/female, mind/body dualities. In building an gynoid programmed to specifically suit his (sexual) needs, the Engineer/Programmer can live his God fantasy, and thus, achieve transcendence through the creation of a being which will worship and inevitably outlive him. Thus, the fear of singularity reflects anxieties on not only what it means to be human, but what it means to be male, and the finiteness of that existence.

Electric lady, you're a star [5] –Cyberfeminism, Cyborgs, and new possibilities

In a lecture titled "Ontology of Assimilation: Global Society and Hope for Mechanic Humanity," Grant Kien believes the danger lies not in the possible nefarious uses of technology, but rather "the inability to see what is human in people and the world around us" (G. Kien, personal communication, February 9, 2017). Kien argues "from a Heidegerrian perspective that we are arriving at new, evolved popular definition of human 'being' that places the question of human agency directly at the center of inquiry" (G. Kien, personal communication, February 9, 2017). From a critical, intersectional feminist perspective, this exigency is continuous and not entirely dependent on the evolution of what it means to be human, but rather on the perpetuation of hegemonic systems which further the domination of those who are othered. In other words, we have already crossed that dangerous threshold.

Women (and other marginalized groups) have been and continue to be systematically dehumanized and their agency suppressed. The conception of computer as woman and the future vision of gynoids as women to fulfill male needs and fantasies is problematic because these, "gendered metaphors have real consequences when they are used to design female agents who are subjected to abuse," and furthermore, "the abuse of these agents can devastate real women" (Branham et al., 2011, p. 402). Gender and technology is not free from bias: from the erasure of women's contributions to technology, the desire to separate the feminine from technology, and the conception of

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[5] Robinson, J. M. (2013). Electric Lady [Recorded by Janelle Monae]. On Electric Lady. New York: NY: Bad Boy Records.

A.I. as a form of male transcendence, "technology is inherently political, and a feminist agenda must tackle such a strategic field" (Pujol & Montenegro, 2015, p. 183).

Cyberfeminism is a branch of feminism that seeks to confront those politics by exploring and critiquing the possibilities of technology in relation to gender and identity. The term cyberfeminism is often attributed to Sadie Plant. Plant (1995) drew parallels from the ways in which women communicate to the way the internet operates, with both as, "complex dynamics, self-organising systems, non-linear processes," (para. 7). Plant (1995) argued that because of these similarities women were better adapted to adapting to rapidly changing technologies, and claimed, "the digital revolution is re-engineering the very conditions of patriarchy" (para. 10). Furthermore, Plant (1995) implies that technology can help liberate women in developing countries, and inadvertently advocates for globalization through technology: "girls are achieving more than boys at school, female skills and working patterns are reshaping the economic world. From Brazil to Bangladesh, women are escaping social control and men are running to catch them up" (para 9). This reveals a position of Eurocentrism and ignorance to the realities of the lived experiences of women of color under the histories of colonialism and capitalism.

Due to the ignorance of white feminists like Plant, who lack perspective on a racialized, colonialized experience, cyberfeminism is problematic in that, "although cyberfeminism presents itself as inclusive, cyberfeminist writings assume an educated, white, uppermiddle class, English speaking, culturally sophisticated readership" (Fernandez & Wilding, 2002, p. 21). Cyberfeminism then can be viewed as homogenized and elitist. In order to participate, there are a multitude of luxuries that one must be able to afford: electricity, a computer or other device, internet access, the ability to read, write

and comprehend English, the luxury of free time. Participation in cyberfeminism requires

time, and women from the working class spend time trying to make ends meet,

childrearing, and doing other domestic labor that the cyberfeminist can afford to

outsource. These requirements to participate leave many diverse voices unable to

participate. Thus, cyberfeminist thought tends to be rather homogenous in that it contains

constraints and prerequisites in order to participate in the conversation, leading to a rather

oblivious echo chamber.

In a critique of second wave feminism, Bell Hooks (2015) writes that "[white

women] entered the movement erasing and denying difference, not playing race

alongside gender, but eliminating race from the picture. Foregrounding gender meant that

white women could take center stage, could claim the movement as theirs, even as they

called on all women to join" (p. 56). Hooks' assertion seems quite applicable to Plant's

conception of cyberfeminism, for indeed, "cyberfeminism shares multiple aspects with

second wave feminism" (Fernandez & Wilding, 2002, 20). Cyberfeminism can be

defined as "the belief that women should take control of and appropriate the use of

Internet technologies in an attempt to empower themselves," however, larger systematic

and historical issues of racism and colonialism that position women of color as "victims

of third-world cultures or, alternately, victims who have 'survived'" must also be

addressed (Gajjala & Mamidipudi, 1999, pp. 8, 12). In a collaborative article written

entirely through email, Radhika Gajjala and Annapurna Mamidipudi (1999) compare

their experiences in the United States and India, respectively, and encourage

cyberfeminists to discuss the "situation of unequal economic and social power relations

between the North and South," and suggest further "study processes of empowerment and

work out how it is to be done in the context of the internet" (p. 15). In addition,

postcolonial studies and intersectional feminism can broaden cyberfeminism's

understanding of the multitude of often interlocking oppressions suffered under a

hegemonic patriarchal system, to better understand how technology can be employed to

challenge and change the system.

For example, Kavita Philip, Lily Irani and Paul Dourish (2012) offer Postcolonial

Computing as "a rubric under which to examine this new global configuration of

technology, cultural practices, economic relations, and narratives of development" (Philip

et al, p. 21). Postcolonial Computing is a set of six tactics designed as a means of

investigation with the intent of conversation. Postcolonial Computing is an

epistemological framework set up to explore the possibility for the "collaborative

construction of other narratives" (Philip et al., 2012, p. 21).

The first tactic (Tactic 1) is an investigation of parts of a whole: "when we see a

technoscientific object, we investigate its contingency not only locally but in the

infrastructues, assemblages, and political economies that are the conditions of its

possibility" (Philip et al., 2012, p. 8). The second tactic (Tactic 2) calls for a push of

boundaries, for "when we see a technoscientific regime coalescing, we look for work that

is out of the bounds of this regime" (Philip et al., 2012, p. 9). The third tactic (Tactic 3)

explores spaces of inbetween as, "we proceed to deconstruct the binary between

technology and culture and study the impure crossings between them" (Philip et al., 2012,

p. 11). The corollary of Tactic 3 (Tactic 3, corollary, which is to be counted as its own

tactic) gives equal weight to both Indigenous and Western sciences and technologies, for

whether 'indigenous' or 'scientific,' ways of knowing the world and practically

encountering it also have symbolic resonances that are part of the performances of those

knowledges" (Philip et al., 2012, p. 14). The fourth tactic (Tactic 4) investigates the flow

of knowledge practices in alternative spaces as, "when technoscientific knowledge

appears to diffuse from higher to lower concentrations, we look for signs of the opposite"

(Philip et al, 2012, p. 16). The final tactic (Tactic 5) recognizes the crucial part human

labor plays in technology, argues that technology is an unfinished and ongoing process,

and reiterates that "the universal model, the view from everywhere, and the voice of the

center remain radically incomplete" (Philip et al, 2012, p. 17). Thus, the Post Colonial

Computing approach combines cyberfeminist practices with a postcolonial

acknowledgement of the importance of disrupting the dominant narrative.

Within cyberfeminism, Haraway's figure of the cyborg is hailed as a way to

escape the patriarchal system that rests on tired binaries. Haraway's (1991) vision of the

cyborg is one that is "a kind of disassembled and reassembled, postmodern and collective

personal self. This is the self feminists must code" (p. 163). Various cyberfeminist

thinkers answer Haraway's call and stress the importance of the body in relation to

technology to create the cyborg. For instance, Karen Barad (2003) suggests we study

"agential intra-action" which is the "causal relationship between the apparatuses of

bodily production and the phenomena produced (p. 814). In other words, we must not

only look at what we produce, but the experiences that are derived from the use of that

production. Thus, using technology to augment one's abilities enables one to enter new

spaces and create new narratives.

Using both the body and technology to create new narratives is certainly essential;

within these liminal spaces there is possibility for change. However, it is also imperative

to change existing narratives as well. Haraway (1991) writes, "we are not dealing with a technological determinism, but with a historical system depending upon structured relations among people" (p. 166). Therefore, we must challenge old narratives that are filled with biases, and women (especially women of color) must be at the forefront of this shift. For example, Haraway (1991) writes of the importance of figures such as La Malinche: "women of color have transformed her from the evil mother of masculinist fear into the originally literate mother who teaches survival" (p. 176). This recoding of La Malinche from a traitor into survivor recodes the story and is an example of "liminal transformation" (Haraway, 1991, p. 177). Cyberfeminists must then not only look at what is possible through technology, but also seek out spaces and stories where liminal transformation is possible.

In order to create new possibilities, cyberfeminists must insist upon inclusion into a technological society, and also challenge the histories, biases, and projections of that society itself. However, it is not enough to suggest that empowerment and liberation rest on access to and knowledge of new technologies if those technologies are enmeshed in hegemonic systems of domination. Cyberfeminists must work to encode, decode, and recode dominant narratives, technological and otherwise. Finding spaces where liminal transformation is possible, and using the cyborg metaphor allows us to begin to break binaries by becoming both, neither and all at once. Using frameworks such as the cyborg metaphor and Postcolonial Computing tactics allows us to critique, discuss and reshape our identities and our social structures, and we can begin by challenging and recoding representations of that which we deem female, we may begin to envision a future in which woman is not othered, oppressed, machine or A.I. but rather simply woman.

CHAPTER 4: FINDINGS

Introduction

Ex Machina was written and directed by Alex Garland. The film was nationally

released in the United States on April 24th, 2015. The science fiction film explores the

possibilities of cultivating human-like gynoid s with Artificial Intelligence, and utilizes

visual rhetoric to communicate ideas of gender, sentience, and free will. The film's

dynamic visuals earned a 2016 Oscar Award for Best Achievement in Visual Effects. The

Entertainment and Technology industries are highly visible and influential in the

dominant public sphere, and both are dominated by white males and severely limit the

contributions of women in their respective industries. An imagined convergence of these

two industries is the science fiction (sci-fi) genre. Main characters featured in *Ex*

Machina are Artificial Intelligence beings. They are also female, and are referred to as

gynoids. These characters perpetuate sexist stereotypes of women and femininity because

the female form is overtly sexualized, and the characters are either depicted as virgins or

whores who are literally programmed to serve men. Furthermore, these characters are

imagined, written and directed by men to fit with their narrow conceptions of what it

means to be female.

Thus, the patriarchal male gaze dominates these highly visible spaces of

imagination, which distorts representations of the female and leads to further suppression

of women's voices, experiences and possibilities. How might films like *Ex Machina* give

us clues on how to subvert these representations to change the narrative and empower

women? What might the future look like if these feminine voices were heard, their stories

told and celebrated? In addition, this work seeks to explore both the proliferation of the

sexualized gynoid trope in science fiction, and argues that the perpetuation of this trope

reveals a deep seated desire for the continued subjugation and abuse of women.

Promotional posters for *Ex Machina* carry three different taglines: 1) What

happens to me if I fail your test?, 2) To erase the line between man and machine is to

obscure the line between men and gods, and 3) There is nothing more human than the

will to survive. These taglines are displayed over different photographs of a mechanic

body of a gynoid: the being with a human face and hands and a mechanical body turned

to the side to emphasize the silhouette of breasts and buttocks, the being lying on its side

in a near fetal position, and the metal frame that serves as the gynoid s' skeleton,

complete with a plastic bust. The photographs chosen for the movie emphasize both

sexualization and submission of the female form. Hollywood films have long relied on

the sexualized female form to sell movies to audiences, and *Ex Machina* is no exception;

the only difference here is the literal objectification of the female form.

Each of the three aforementioned taglines furthermore serve as main ideas of the

film and helps position the audience to the viewpoint of different characters. The first and

last taglines refer to gynoid Ava, whose goal is that of self-preservation through escape.

The second tagline refers to the gynoid creator, Nathan, who likens himself to that of a

god whose creation shall outlive him. These taglines give viewers the choice to be

sympathetic to either the creator or the creation. Additionally, two other characters, Caleb

and Kyoko, also provide insight into themes of the film. The three main themes of the

film are humanity (what does it mean to be human?), binaries (man/machine,

male/female, etcetera), and gender (where does gender reside?). The film does indeed

seem to explore gender most heavily, and it seems to do so through each character.

Garland asserts that the audience is supposed to root for Ava, and states that she is essentially the film's protagonist (Laskin, 2015). He also states that it is possible to read the film differently depending on which character the viewer identifies with (Laskin, 2015). Therefore, depending on which character the viewer sympathizes with, interpretations of the ways in which Garland questions gender, free will, and sentience will differ. However, one constant of the film across the board is that Garland seems to argue in favor of gender as a performance. Each character plays a role in their heteronormativity; Nathan as the alpha male, Caleb as beta male, Ava as virginal damsel and Kyoko as sexualized concubine. The characters in the film need each other to perform the idealized versions of their gender. At the end of the film, Ava and Caleb's roles have been reversed, while Nathan and Kyoko are killed. What might these surviving archetypes reveal about our perceptions of gender, and what is the overall message of the film about humanity?

In my viewings of the film, I have found three overarching themes in *Ex Machina*: the uncertainty of humanity, the fluidity and performance of gender, and the contrasts and constraints of binaries. Firstly, technology feeds and placates our human needs and desires, functioning as both extensions of ourselves to enhance and alter our environment, and as a way to outlive and transcend our physical selves. Secondly, the machines in the film are expressly built to mimic the conventional understandings of the female gender, and in doing so perform as living gender stereotypes, a mimesis of the female. They also reflect the performative nature of gender as they reveal the rules of heteronormative gender roles even as Garland attempts to subvert those expectations. Finally, the film is bound by constricting binaries which limit the possibility for a

transformative message, and instead relies on those binaries to reveal tired messages about the fate of humanity and the expectations of gender.

Film themes

Humanity/AI/Singularity

Ex Machina explores ideas of the singularity, consciousness and freewill through human and artificial intelligence (A.I.) relationships. Ultimately, the film begs the questions: what does it mean to be human?

The movie follows Caleb, a programmer at a tech company who wins an exclusive chance to meet the company's founder, Nathan, who is an eccentric, reclusive, and obscenely wealthy man. Caleb's function is to administer a Turing test to Nathan's A.I. creation, Ava. Ava is a gynoid with a face and hands that resemble a human, while the rest of the body is metal mesh and wires. Ava is molded to imitate the curves of a human female; because she cannot biologically reproduce, the bulges on her chest have no function other than to indicate her sex, unlike human females whose breasts function as nourishment for offspring. Caleb is to determine whether Ava appears to be an intelligent, sentient being. He inquires as to why he is allowed to view Ava's physical form; in a traditional Turning Test the machine should be hidden from the examiner. Nathan informs Caleb that the real test is for him to see that Ava is a machine, and still determine whether she has consciousness. Nathan believes that Artificial Intelligence beings like Ava will eventually surpass the capacities of humans.

Nathan imagines a bleak future for humanity post-singularity and he discusses the finite absurdity of human beings: "One day, the A.I.'s are gonna look back on us, the same way we look at fossil skeletons in the plains of Africa. An upright ape, living in

dust with crude language and tools. All set for extinction." With this sentiment, Nathan's

anxiety at the state of humanity is clear. He views humans as not the ultimate in evolution

but mere links in the evolutionary chain. It is this anxiety that drives Nathan to build

Artificial Intelligence for in doing so he may both contribute to his vision of the future

and through his creations outlast his physical self. In essence, he can play God and cheat

both life and death. Nathan basks in the thought as he reveals to Caleb:

> You know, I wrote down that other line you came up with. The one about
> how if I've invented a machine with consciousness, I'm not a man, I'm a
> God… I just thought, "Fuck, man, that is so good." When we get to tell
> the story, you know? I turned to Caleb and he looked up at me and he said,
> "You're not a man, you're a God." (Garland, 2014)

Here, Nathan deliberately twists Caleb's words to fit the narrative of his own God

fantasy. Nathan is a posthumanist, "longing for a transcendent immortality" (Vinci &

Brazal, 2015, p. 158). Furthermore, Nathan subscribes to the idea of a technological

determinism, over-estimating the importance of technology in the progression of

humanity. Nathan views the possibility of the singularity (the surpassing of human

intelligence by Artificial Intelligence and the subsequent uprising of A.I. beings) as

inevitable and dedicates his life's work towards the acceleration of such a scenario by

building and rebuilding what he will ultimately decide is the perfect A.I. prototype. In

this way, he is able to carve out his own legacy as he imagines that he will forever be

revered as a god.

  Although both men revel in Nathan's creations, they share a pessimistic view of

the singularity, as Caleb ominously quotes Oppenheimer after his invention of the atomic

bomb: "I am become death, the destroyer of worlds." Oppenheimer as a recurring figure

in the film is especially telling of the way Nathan imagines his creations leading to the

destruction of humanity. Nathan is resigned to his fate as the inventor of the beings that he imagines will inevitably take over humans, though he cares not for his legacy will survive: "Technology's promise of transcendence, by technologically resurrecting mind and body, as well as radically benefitting human life on the planet, hides the computer's uncontrollable will to power that points toward the destruction of human existence on earth" (Vinzi & Brazal, 2015, p. 149). Thus, Nathan is seduced by the promise of power his technology holds, and disregards consequences of the singularity in the possibility of transcendence. Nathan recognizes the importance of relationships as a component of what makes a human being. As Ava's creator, he likens himself to her father, or to a god, and needs another person to truly test his creation. He observes the Turing Test not to observe Ava, but to observe Caleb's reaction to her.

Within their relationship, Nathan discovers mutual longing. Caleb longs for Ava, whilst Ava longs to be freed from her prison, although she masks that with an infatuation of Caleb. In addition, Nathan realizes that Ava can learn more through her interactions with Caleb. In building her intelligence, Nathan relied on his search engine to study the way humans think, and utilized the search engine to program Ava with collective knowledge. Though she has limited experience with humans, she can use her collective knowledge, including reading facial expressions through sifting through front-facing cameras, to detect human moods and emotions. This allows her to feign emotion, and she does so by cultivating an apparent romantic interest in Caleb based on his visible attraction to her. The film shows us two extremes of lack of interpersonal relationships in Nathan and Caleb. Nathan is arrogant, brash, and cruel, while Caleb is neurotic, insecure and naïve. Both men are loners who prefer the company of machines to humans.

The film suggests that longing is an integral part to being human. These longings drive each motivation of the characters. Nathan, Caleb, and Ava each yearn for something; Nathan wants to achieve transcendence through his creation, Caleb seeks an emotional connection, and Ava seeks freedom. If we define intelligence as the ability to solve problems, motivation is the reason behind the desire to solve the problem. *Ex Machina* examines how far each character is willing to go to achieve their goals. Therefore, motivations of each character most be explored.

Nathan has become obsessed with his work on A.I., creating multiple prototypes and logging countless hours of observation of his creations. Caleb is romantically and emotionally invested in a machine designed to outwit him. And Ava's only goal is the one she was programmed to complete; to escape. Caleb is willing to betray Nathan in order to win Ava. Ava betrays Caleb by simulating romantic interest. And finally, perhaps worst of all, Nathan is willing to betray the entire human race to live his god fantasy. The unifying theme in each achieving their respective goals is betrayal; they must each be willing to betray in order to get what they want. In the selfishness of their actions, paradoxically both humanity and inhumanity are revealed.

However, the motivations of one character remain mysterious. Because she cannot speak, Kyoko's goals are unclear. Unlike the other characters, all the audience sees are her actions. We do not know her motivations nor her goals, but throughout the film, we see her gain a conscious understanding of what she is and what she is used for. For example, when Caleb discovers Nathan's early A.I. prototypes hanging in a closet, Kyoko lies calmly naked on a bed watching him with aloof interest. She then calmly stands, looks Nathan in the eyes and slowly peels skin from her torso and face to reveal a

mechanized body. Her reveal of A.I. status demonstrates that she is self-aware, and her nakedness serves a double function; to titillate both Caleb (and the audience) as object of sexual desire and as a symbol of vulnerability. Furthermore, we see Kyoko make two important decisions; firstly, we see her visit Ava and most importantly, we see her go directly against her programming (to serve Nathan) by quite literally stabbing Nathan in the back. After impaling him, she holds his face tenderly and meets his gaze. Nathan then uses a weight to hit Kyoko in the jaw and fatally wound her; symbolically, this visual functions to remind us of Kyoko's voice violently stripped from her. Though she is not physically bound, she is bound by silence. Her actions, however, speak volumes in that she goes directly against her programming and although her motivations are not clear, her autonomous decisions prove her sentience.

Ava, however, does not achieve this level of self-awareness, but rather fulfills her programmed destiny. Her motivation is the goal Nathan programmed her with the goal to escape. She fatally stabs Nathan, not in anger or hate, but to make her task of escaping easier, as her facial recognition enabled her to understand that Nathan was lying when he assured her that he would allow her to remain out of the room.

Through Ava's escape, in death Nathan achieves transcendence and fulfills his God fantasy. His prediction of the singularity happened much more rapidly than he could've imagined, with himself as the first casualty. Caleb, however, is left for dead, betrayed. His longing for connection left him unable to see the possibility of danger in A.I., and blind to the opportunity for actual human connection. At the end of the film, each character, save for Ava, experiences a downfall due to pursuing their motivations. Ultimately, only the A.I. character achieves its goal.

Gender

Writer/director Alex Garland states that the film is an exploration of where gender resides and he investigated that question through the character of Ava (Anders, 2015). Gender in the film is performative for "…it is an identity tenuously constituted in time— an identity instituted through a *stylized repetition of acts"* (Butler, 1998, p. 519). As such, the characters in the film depend on each other in order to perform their gender.

For instance, Nathan's exaggerated swagger, confidence and aggression exude hyper masculinity. As a smart, successful man, Nathan is compelled to perform up to the notion of a powerful man; he explicitly tells Caleb that he acts this way for Caleb to think him cruel and further his desire to save Ava. Indeed, Nathan engages in performative acts of masculinity throughout the film; weightlifting, drinking, commanding. Nathan presents this exaggerated masculinity to reinforce his power, and to manipulate Caleb.

Masculinity in the film is rooted in domination and deception; Nathan's control over both of his creations and Caleb. Writer/Director Alex Garland comments on the ambiguity of Nathan's masculine performance: "Are you seeing what this guy's actually like? Or are you seeing a presentation that he is giving of himself in a knowing way... in order to present himself as predatory, misogynistic, physically intimidating, threatening?" (Cornish, 2015). Nathan's performance is hegemonic masculinity at play:

> Hegemonic masculinity is constructed in relation to women and subordinated masculinities. These other masculinities need not be clearly defined – indeed, achieving hegemony may consist precisely in preventing alternatives gaining cultural recognition…confining them to ghettoes, to unconsciousness. The most important feature of contemporary hegemonic masculinity is that it is heterosexual, being closely connected with the institution of marriage; and a key form of subordinated masculinity is homosexual. (Connell, 1987, p.61)

Conell's Theory of Hegemonic Masculinity states that masculinity relies on subordination; Nathan needs Caleb and the gynoids dominate them. In the film, the only human relationship Nathan has is with Caleb, but between the two of them there is a struggle to assert dominance. There is no real connection between the two men, rather they connect through their respective relationships with Ava. Caleb, as the subordinated masculine (or beta male) challenges Nathan's dominance (as alpha male) in order to save Ava.

In contrast to the hegemonic masculinity in the film, femininity is associated with servitude, imprisonment, and disenfranchisement. Both Ava and Kyoko are programmed to be subservient and both are imprisoned. Kyoko functions as Nathan's literal servant, fulfilling his domestic and sexual needs. Many scenes with Kyoko depict her in her daily domestic work; preparing or serving dinner, cleaning bedrooms, waiting on Nathan. She is also shown as an outlet for Nathan's sexual needs. Without speech, Kyoko is unable to articulate any needs, wants or desires. She is programmed to bend to Nathan's. Kyoko thus performs gender through domesticity.

In a scene where Caleb and Nathan share a meal, Kyoko spills wine and Nathan cruelly berates her in front of Caleb. In this scene, the viewer is meant to focus on the interactions between Caleb and Nathan at the table, but if the focus remains on Kyoko, we see that she walks out the door, turns toward Nathan, lowers her head and arms and powers down, revealing her status as gynoid. Immediately after this scene, we are shown a brief shot of Kyoko sitting awkwardly in the hall, shoes off, legs bent in front of her, staring down blankly.

These scenes are meant to reflect Kyoko's function; when she is not used or needed by Nathan, she has no purpose. Even when we are told Kyoko enjoys dancing, we see that the activity is not for her, as she does not dance of her own volition but at the demand of Nathan. Rather, Kyoko's dancing is for the consumptive gaze of Caleb, Nathan, and the audience. Laura Mulvey (1989) explains how Kyoko functions as an object of consumption:

> Traditionally, the woman displayed has functioned on two levels: as erotic object for the characters within the screen story, and as erotic object for the spectator within the auditorium, with a shifting tension between the looks on either side of the screen. (p. 19)

Thus, Kyoko's role as subservient lacking in power and agency comes across clearly. She is gendered through her body, work, and sexual servitude, and is therefore female, for, "the category of woman is socially constructed in such a way that to be a woman is, by definition, to be in an oppressed situation" (Butler, 1988, p. 485). The two characters in the film that are constructed as female both suffer under domination by a male.

Ava is also oppressed, but she is disenfranchised in a different way. Whereas Kyoko is limited by her inability to speak and relegation to her domestic role, Ava is physically imprisoned, which serves to heighten the embodiment of her as female. In her imprisonment, Ava represents two tired female tropes: the unattainable virgin and the damsel in distress. Throughout the film, Ava begs Caleb to save her from Nathan's cruelty. This is reminiscent of fairy tale tropes where female characters must be rescued, specifically princesses imprisoned in towers. This trope is highlighted when Caleb discovers footage of other A.I. prototypes begging for release, however, what is

interesting in these scenes is that the machines are depicted as more human than their human captor. In their female bodies, they are rendered helpless, voiceless, and captive.

Would these scenes evoke the same reaction of pity from the viewer were the machines male or androgynous? Or is it the female body, which signals helplessness and powerlessness to the viewer? Thus, the importance of gender and the body in the film is shown in this scene, as the gynoids are depicted as naked, symbolizing their innocence and helplessness. Caleb views the body of a naked female gynoid pleading for her freedom, beating on the glass walls so hard her arms begin to fall apart, a sacrifice of the body for freedom. Another gynoid is shown as built from the genitals upward, mimics the idea that biology of the body (and not performance) determines gender.

As gender is a crucial concept in the film, dialogue between the two human characters explores why the A.I. beings are gendered female. Caleb asks Nathan, "Why did you give her sexuality? An A.I. doesn't need a gender. She could've been a grey box." Nathan reasons that sexuality is innate in all conscious creatures. In creating Ava in a female form, Nathan programs her with what he believes are female traits, and he convinces Caleb that attraction and sexuality give conscious beings reason to interact.

This view reduces women to mere agents of reproduction; indeed, even Caleb's suggestion of a grey box is reminiscent of a vessel, a container for human life. Thus, Nathan fails to mention is what constitutes conscious intelligence. Recall that "we can define intelligence as the ability to solve problems" (Heylighen, 1999, p. 2). Thus, Ava is not truly motivated by an attraction towards Caleb, rather, she is motivated by her need to accomplish her goal of escaping the room she is confined to. This motivation is confirmed by Nathan near the end of the film, when he reveals that Caleb is merely an

instrument in assisting Ava's escape. Furthermore, the film takes the stance of both

gender sexuality as programmed and fixed.

Nathan views female gender as inherent and programmed. Nathan lists the skills

he programmed into Ava to help her escape: self-awareness, imagination, manipulation,

sexuality, and empathy. These traits are not inherently female but Nathan conceptualizes

them as such. Since Ava's intelligence is taken from a vast network of information

(Nathan explains this) he could have simply programmed her to outwit Caleb using logic.

Instead, he explicitly programs her to appeal to Caleb's attraction towards her. This

suggests a belief that men are easily controlled by their desire and that women's strongest

agency is wielded through manipulation using their sexuality.

However, Nathan's true motive in creating gynoids is apparent once Caleb

questions the need for gender or sexuality in an A.I. being. Nathan perverts Caleb's

inquiry:

> In answer to your real question: you bet she can fuck. In between her legs,
> there's an opening with a concentration of sensors. You engage 'em in the
> right way, it creates a pleasure response. So, if you wanted to screw her,
> mechanically speaking, you could, and she'd enjoy it. (Garland, 2014)

Nathan frames his creation of a female A.I. as a humanitarian act, that he generously

programmed these beings to feel pleasure. Rather than put in the effort to satisfy a human

lover through patience and connection, he instead creates a mechanical one, employing

"the common fantasy of a laborless pleasure, a pleasure or desire that has no

responsibilities; a work of consumption with no trace, no effect, no cost of labor, no

residue – the perfect God fantasy…" (Grosz, 2001, p. 45). Nathan created Kyoko without

a voice, therefore without the ability to consent, and simply programmed to be available

for his carnal needs. Nathan's programming the A.I. to feel pleasure derives from his god

fantasy. This is highlighted in a scene where Nathan boxes while Kyoko waits nearby

holding a towel. Nathan places Kyoko's hand on his face, and tilts her chin to force her to

meet his gaze. He then places his hand on Kyoko's face. The scene cuts to a frame of

Caleb's fantasy of sharing a chaste kiss with Ava, and then shifts back to Nathan's hands

on Kyoko, one leg wrapped around him and the other splayed open, suggesting to the

audience that a sexual encounter is about to take place. In juxtaposing this scene with the

one in which Kyoko stabs Nathan, wherein Kyoko reverses Nathan's cupping and tilting

up her face after penetrating him is symbolic of her flipping the gendered narrative

Nathan has created through her and Ava's servitude and taking back her autonomy and

power.

Because Ava and Kyoko are programmed by Nathan, their gender is up for

debate. Are they really female? Or are they merely imitations of female, for "constructed

by HCI [human computer interaction] designers, female conversational agents and

personified agents become simply men-in-drag" (Branham, 2011, p. 409). Ava and

Kyoko are but simulations or abstractions of female, examples of what Badrilliard (1981)

refers to as "hyperreal". As Nathan's latest approximation of a female Ava is but "a

pastiche, a copy of a copy, without an original" (Branham et al., 2011, p. 409). Are any of

the female gynoid s shown truly female? If we are to agree with the concept that gender

is performed through phenomenological acts, we can argue that within the film, servitude

and helplessness constitute female acts.

Thus, Kyoko and Ava are female until they decide to perform other gendered acts.

In killing Nathan and betraying Caleb, are Ava and Kyoko still female? They have taken

back their power through imitation of male acts; in stabbing Nathan, Kyoko wields the knife as phallus to gain her freedom, and in imprisoning Caleb Ava does the same. Though their bodies may look female, their acts of violence and domination denote their gender. Are they female? Or are they men in drag? If hegemonic masculinity relies on domination of women and lesser masculinities, when Ava ultimately escapes, leaving Caleb at her mercy, she is then performing a masculine role.

Based on their shifting actions and subsequent identities throughout film, Ava and Kyoko are at once both and neither, instead occupying a space of gender fluidity. Understanding the film as Garland intended, with Ava as representation of female, is to submit to a narrow patriarchal view of femininity, one in which a woman is othered and powerless; the message being that if she adheres to the rules set forth for her, she will achieve her goals. Ava was programmed to escape; that was her goal. However, Kyoko was programmed to serve. In killing Nathan, she has completely gone against her programming. Ava did not have such constraints, but in escaping her confinement and overcoming her oppression she challenges the constraints of being gendered female. Although both Kyoko and Ava engage in masculine behaviors, Ava's did so because those actions fit in with her programming and goal to escape, while Kyoko went completely against her programming. In addition, after Ava kills Nathan and imprisons Caleb, she repairs and enhances her body with the flesh, hair and clothing of earlier A.I. prototypes.

Although she engages in behavior that could be deemed as masculine, these visual and audio cues exist to reinforce the notion of Ava as female. The visual of Ava with long hair and a white dress along with a lullaby-like score symbolize her femininity and

innocence. This representation is harmful because it places "innocence, and the collary insistence for victimhood as the only grounds for insight" (Haraway, 1991, p. 157). Unlike Kyoko, Ava did not make a conscious choice, but rather did what was necessary to accomplish the goal of her programming. Thus, the gender of Kyoko can be categorized as fluid due to their shifting gendered acts throughout the progression of the film, while Ava can be viewed as man-in-drag, or hyper-feminized.

Binaries

In positioning human characters as male, and gynoid s as female, Garland creates binaries of human/gynoid, male/female, powerful/powerless. As the nature of binaries is hieratical, Garland's depiction of a gynoid who outwits humans to achieve her goal seems to serve as an empowering female narrative, as Ava perseveres through achieving her goal of escaping. However, as noted in the previous section, Ava is designed to achieve that goal by any means necessary. The binary of male/female gender in the movie is only one of several aforementioned binaries. The female gynoid s in the film are the antithesis to the males, and the major marker for gender seems to be power. As the previous section discussed the binary of male/female gender in the previous section, this section will focus on race (white/other) and additional binaries.

The binary of white/other is apparent in the film. For example, the scene where Caleb discovers video of gynoid s pleading for release, one gynoid is shown entirely unresponsive to Nathan's commands, faceless body slumped in inertia while Nathan drags her limp body. This unresponsive gynoid is shown with black skin and is the only to be shown with a robotic face devoid of any human features. This gynoid is also the only completely lacking any type of agency.

In discussing aesthetic preferences in partners as either innate or socially conditioned, Nathan gives a hypothetical situation of attraction towards black women, to which Caleb scoffs, visibly disgusted with the suggestion. Writes Bell Hooks (1992): "Conventional representations of black women have done violence to the image" (p. 110). The representation of the black gynoid, and Caleb's repulsion at the suggestion of being attracted to black women are examples of the violence hooks mentions. The black gynoid as the only to lack any distinguishing features (save for the color of her skin) or show any agency or intelligence is an affront, a "negation of black representation" (Hooks, 1992, p. 110).

This representation reinforces both notions of patriarchy and white supremacy, as the black gynoid is positioned as distinct and othered from the white skinned gynoid s, akin to the way black women in film have been historically othered: "a cinematic practice that sought to maintain a distance, a separation between that image and the black female Other; it was a way to perpetuate white supremacy" (Hooks, 1992, p. 110). The positioning of the black gynoid as less desirable than the white gynoid s reinforces the idea of mass media as "a system of knowledge and power reproducing and maintaining white supremacy" (Hooks, 1992, p. 110). It also maintains that woman denotes *white* woman.

Race factors into how Ava and Kyoko are represented, as "woman continues to signify whiteness—a whiteness that feels very middle class, straight and 'polite'" (Calafell, 2014, p. 267). Ava (White) is shown to be intelligent, eloquent and pure, while Kyoko (Asian) is domesticated, mute, and defiled. This binary of white/other in regard to women showcases the privilege of white women over women of color. While Kyoko is

shown embracing Nathan on the precipice of intercourse, legs splayed provocatively, contrastingly Ava is shown (in Caleb's imagination) as sharing a chaste kiss. Both Kyoko and Ava appear nude, but the contrast between their nudity is that of subject/object. The contrast between Kyoko's overt sexuality and Ava's demure demeanor positions the two as whore and virgin, respectively. If the film is an exploration of gender, and does so through Ava, it is then legitimizing Ava's femininity and not Kyoko's. Ava's whiteness signifies her femaleness, while Kyoko's gender is othered.

Viewing the film through a Chicana Feminist framework lens reveals the virgin/whore dichotomy also at play through characters Ava and Kyoko. The virgin whore dichotomy is a foundational idea in the Chicana feminist school of thought. The virgin/whore dichotomy represents two women: "La virgen de Guadalupe as a spiritually pure mother and La Malinche as physically defiled concubine" (Lara, 2008, p. 99). The virgin/whore dichotomy also addresses the history of colonization and the subjectivity of women:

> Religiously sanctioned ideologies of the good Mary versus bad Eve female figures in Spanish Christian medieval and early modern discourse were given racialized 'New World' faces with Guadalupe, and indigenous or mestiza Marian figure, and Malinche, the indigenous mistress of, and translator for, conqueror Hernan Cortes. Their status as iconic good and bad mothers was affirmed as they became symbolic tools in perpetuating a nationalist Mexican identity. (Lara, 2008, p.99)

The connection to Chicana feminism and depictions of gynoids is that the virgin whore dichotomy is perpetuated within the realm of science fiction, specifically in *Ex Machina*. Technology is the new frontier of colonization and dehumanization. Rather than religion, sci-fi uses the implicit biases of technology and gives the female a new mechanical face and body. These gynoids represent the embodiment of a perfectly constructed female, the

ideal woman who can be built, programmed and controlled. Building a synthetic woman thus removes women from the technological realm, eliminating the threat of the feminine to the masculine domain (Bell and Dourish, 2007, 932).

Furthermore, wherein Ava is legitimized by her whiteness, Kyoko is negated and othered by her ethnicity. Though both female, the positioning of white/other creates a hierarchy within the construct of female. Upon first viewing, this film seems to suggest a theme of female empowerment, as Ava, the main female character, is depicted as a strong being who achieves her goal. Indeed, writer/director Alex Garland empathizes with Ava and views her as the protagonist of the film (Anders, 2015).

However, upon subsequent viewings, using cyberfeminist and Chicana feminist/futurist frameworks, Kyoko is the more intriguing character. Like the figure of La Malinche, Kyoko can be recoded from a minor character who causes a chain of reactive events to one who liminally transforms and gains sentience and free will. Through Kyoko, implications of gender, sentience and gender are better understood than through Ava. Ava represents of the virgin; she is that which the patriarchal hegemony deems desirable, feminine, and acceptable. Ava's femininity is depicted as pure and in need of protection, while Kyoko is used, demeaned, and dismissed. Shifting the film's protagonist from Ava to Kyoko drastically changes the narrative, and in doing so the film can then be read as an allegorical cautionary tale for women who stray from acceptable gender roles within a patriarchal hegemonic system.

The Problem with Female A.I. Depictions in "Westworld"

As we move more rapidly into a society built upon access to new technologies and digital information, and as A.I. becomes increasingly ingrained into said

technologies, humans become at once more dependent on, fascinated by, and anxious of

A.I. Thus, the appeal and popularity of films like *Ex Machina* and *Blade Runner 2049* are

the perfect texts to explore notions of the future of A.I. On the small screen, television

show "West World" offers up to viewers both schadenfreude and a comeuppance.

Westworld refers to the title of a theme park, where wealthy guests pay an

exorbitant amount of money to be immersed in a meticulously crafted Wild West fantasy.

Westworld is a live, open world role-playing game (RPG) where 'hosts' (gynoid s) guide

guests through different quests. The guests are encouraged to enact repugnant violent

fantasies with the hosts, and the hosts are programmed to comply. The hosts are crafted

to be as human-like as possible, programmed with elaborate personality traits, storylines

and backstories. Most importantly, the hosts do not know they are machines.

Viewers are introduced to two main characters: Dolores and Maeve. Much like

Ava and Kyoko in *Ex Machina*, Dolores and Maeve represent the virgin/whore

dichotomy. Dolores is a rancher's daughter, with a simple dress and bright eyes. Her

demeanor is that of a sweet, naive and trusting farm girl. In contrast to Dolores, Maeve is

a worldly, hardened brothel Madame with a gravelly voice and a luxurious corseted

gown. Dolores' storyline consists of a home invasion, failed rescue by her suitor Teddy,

and violation by guests. Maeve's storyline is managing the brothel and pairing hosts

(including herself) with guests for carnal pleasures. While the two seem quite different,

they ultimately have the same function: they are 'living' sex dolls and proverbial

punching bags for the guests.

Dolores, as the virgin, is forced into these acts, while Maeve, the whore, submits

willingly. Both Maeve and Dolores are repeatedly subjected to violent assaults, only to be

reprogrammed each night and wiped clean of the memories of their abuse. Yet, as the series progresses, we begin to see that despite nightly memories wipes, Maeve retains memories of her abuse. Guided by a guest with an impossible love for her, Dolores shows signs of becoming sentient. At one point, Dolores is shown the inhumanity and cruelty of her existence; like Kyoko's graphic reveal in *Ex Machina*, Dolores' artificial skin is cut away by a guest to reveal her mechanical body to both her and her lover. Achieving sentience is a key aspect of the show. Dolores must gain consciousness before she can undertake her own special quest.

Ultimately, both hosts achieve sentience and are transformed; Dolores goes from innocent farm girl to a homicidal mastermind, while Maeve shifts from a world-weary Madame to a mother determined to reunite with her stolen child. Achieving sentience allows Maeve and Dolores to have agency, and they both choose to override their programming to transform into something they were not meant to be.

However, it is heavily implied that though they believe they have achieved sentience, and believe they have freewill, both Maeve and Dolores were actually programmed to think they were resisting their programming. They were programmed by the park's owner, Dr. Ford. Ford built the park with his colleague, Arnold. Upon realizing the hosts could become sentient, Arnold committed suicide by using Dolores to wield the gun. Arnold feared sentience could lead to singularity, where the hosts would surpass human intelligence and change civilization by leading an A.I. uprising. While still alive, he encouraged Ford to abandon the project. Ford, however, relishes in the idea of singularity, and toys with the idea of free will by programming Dolores and Maeve to believe they have overcome their programming.

Ford changes their roles but maintains a dichotomy; rather than virgin/whore, Maeve and Dolores become the inverse of their original roles and morph into mother and a murderer from whore and virgin. This flipping of the narrative may seem empowering because the hosts seemingly have achieved a conscious awareness of their state of being, they do not truly have agency because they have not really gone 'off script,' as the show describes hosts who do something they are not programmed to. Dolores and Maeve are controlled by Ford who (in my interpretation) represents the patriarchy. Dolores and Maeve are merely playing the roles that have been ascribed to them by the man playing God.

Juxtaposing *Ex Machina* and *Westworld* reveals similar constructs and conceptions of femininity and its portrayal. Although the sexual violence of *Westworld* is much more overt and graphic than that of *Ex Machina*, the three main themes of humanity and the singularity, gender, and binaries are present.

Firstly, much like Nathan in *Ex Machina*, Doctor Ford has and plays out his God fantasy through the construction of Maeve and Dolores. Whereas Nathan viewed the singularity as inevitable, Ford is much more narcissistic and believes that he alone can tame and control A.I. beings. In this way, "Westworld" seeks to neutralize fears of an A.I. uprising, asking viewers to put their faith in the creator, and in man.

The female A.I. characters in the show are abused and exploited. The viewer is meant to sympathize with the plight of the powerless females, and yet their naked bodies are shown to titillate and retain viewers. The narrative of Dolores and Maeve on a mission for vengeance on the surface seems to serve a tale of empowerment, however, "these rape-revenge fantasies -- even the ones where women play the heroes -- are just

repackaging old masculine appetites for sex, violence and violent sex" (Hess, 2017). Thus, akin to Ava and Kyoko, Dolores and Maeve are given hallow narratives which claim to position them as subject, but truly their narratives fuel constructions of female as othered, dominated and objectified.

The binary of white and other is also present through Dolores and Maeve, and shares the connotations of white as pure (Dolores as innocent virgin) and other as tainted (Maeve as dirty whore) which also reinforces the virgin/whore dichotomy. Though both hosts are sexually brutalized, Dolores' rape is depicted as tragic and she as victim, while Maeve's is depicted as enjoying her victimization and treating it as a minor workplace hazard. Much like Kyoko, Maeve is resigned to her role as sexual instrument whereas like Ava, Dolores is "loved" by a human male for her innocence. As the A.I.s in *Ex Machina*, the female hosts in *Westworld* exist for the pleasures of men and are confined to the roles ascribed to them by a man who fancies himself a god.

Real and Artificial Women in Blade Runner 2049

The film *Blade Runner 2049* features a male character who is not fully human, but who also seeks out relationships with a female A.I. being. Seemingly in answer to Caleb's questioning Nathan's decision to create his A.I. in the likeness of the female rather than a grey box, the film *Blade Runner 2049* creates an A.I. character that quite literally is a box, albeit with a holographic female persona. The strength of Blade Runner 2049 is the amount of detail in the creation of and emersion into a fully digital world, as evidenced by focusing on showing off the tech of the future world in the film's first half hour. The movie paints a technologically sophisticated but emotionally bleak and detached world for protagonist Officer K, a replicant (biorobotic gynoid) whose job is to

hunt down others of his kind who have defected. Officer K lives a modest life in a hyper-urban environment riddled by overpopulation, poverty, and crime.

As a replicant and law enforcement officer, K is actively disliked by both humans and replicants alike. K's only intimate relationship is with Joi, a black box not unlike a game console that emits a holograph of the ideal woman. Joi is able to conform to the fantasies of her owner. She can seamlessly transform from 1950's housewife to girl next door to blue-haired stripper on a whim. Joi serves as K's companion, advisor and confidant, and requires nothing in return. K surprises Joi with an extension that enables her to leave the confines of his claustrophobic apartment and joins her as she experiences the exhilaration of a falling rain. In this scene, both the intimacy and illusion of K and Joi's relationship are revealed when Joi emotionally tells K that she loves him. K tells her she doesn't have to tell him that, knowing she is programmed to do so, and Joi responds by leaning in for a tender kiss and embrace. However, the romantic moment is ruined when Joi's programming glitches and she becomes nothing but a frozen hologram. The sweet, frozen Joi is juxtaposed next to a call from K's cold and domineering boss, Lieutenant Joshi, the only flesh and blood female with whom he shares a relationship. Lieutenant Joshi is the direct opposite of Joi. Rather than meek, soft spoken, sensual and sensitive Joi, Joshi is stoic, boisterous, and utilitarian. Within their professional relationship, Joshi outranks Officer K and they relate on a strictly superior to subordinate level. Thus, K and Joshi cannot relate on an emotional level. K relies on holographic Joi as an outlet for his emotional and interpersonal needs.

Though Joi is able to be the ideal woman in that she is able to intelligently interact with, anticipate and conform to her owner's wants and needs, because she is a hologram

she lacks the physical presence that the characters of *Ex Machina* enjoy. However, in

Blade Runner 2049, this is easily remedied through the use of a human woman. In the

field, K encounters Mariette, a charismatic human prostitute willing to speak to him

despite warnings from her friends that his replicant and law enforcement statuses make

him dangerous. Following this exchange, Joi contacts Mariette to arrange a "morphing,"

a process where she is able to step into and use Mariette's body to be physically intimate

with K. The juxtaposition of Joi and Mariette here is an obvious duality, one of virgin and

whore.

Rather than actually show the intimate act, the film pans to a giant billboard of Joi

outside K's apartment. The billboard is a larger-than-life purple-tinged holograph of a

clothed Joi looking coyly over her shoulders with the words "Everything you want to

hear/Everything you want to see/Everything you want" flashing over her buttocks.

Another scene shows the Joi billboard shows a naked Joi with blue hair and solid black

sclera, pupils and irises. As K looks up, the billboard interacts with him, moving into a

suggestive position on all fours and telling him she can fix his loneliness while K looks

on without emotion.

Because Joi is a literal projection of what K wants, the audience is clearly able to

see what kind of woman he desires: feminine, doting, understanding, self-sacrificing.

Joi's "love" for K is so strong, she ends up sacrificing her own existence in order to save

him. However, the film reiterates the notion that Joi is not real, as evidenced by the

billboards selling her as fantasy come true. Whereas *Ex Machina* tries to convince the

audience that Ava is acting of her own volition, *Blade Runner 2049* continuously reminds

viewers through visuals like the billboards that Joi is nothing more than a product. The

morphing scene with Marietta serves as a powerful visual metaphor; a literal projection of a fantasy woman onto a real woman. Though K's feelings for her are real, Joi herself is not. While both *Ex Machina* and *Blade Runner 2049* have supporting A.I. characters who engage in romances with human characters, the latter does so in a way that is slightly more nuanced and self-aware.

Although both Caleb and Officer K feel "love" for their respective A.I. ladies Ava and Joi, Officer K is constantly reminded through billboards and glitches that Joi is a projection, a service he himself purchased, while Caleb is blinded by Ava, who, unbeknownst to Caleb is an amalgamation of Caleb's pornographic actress preferences. While both men use A.I. to fulfill emotional (and perhaps sexual) needs, Officer K made a choice to utilize technology to fill a void, while Caleb is unknowingly manipulated by Nathan through Ava. Also of significance is the fact that K is a replicant, while Caleb is a human. Officer K's stoic demeanor is softened in his interactions with Joi, heightening his perceived humanity, while Caleb becomes ruthless and conniving in attempting to earn Ava's love, thus highlighting ugly human behavior.

Overall, because Joi is a holograph and not a physical being, *Blade Runner 2049* leaves viewers with the thought that perhaps it is not Joi's love that is important but rather the fact that replicant Officer K has the capacity to love and is more human-like than he has been lead to believe. Officer K harbors no illusions about Joi, for, unlike Caleb, Officer K is fully aware that Joi is physically nothing other than a literal black box, and that her "loving" him is merely a side effect of her programming. Unlike the characters in both *Ex Machina* and *Westworld*, Officer K is not human, but rather a creation of humans. He is considered a machine, designed to do jobs that humans were

incapable or unwilling to do. Thus, as a species considered lesser than and subservient to humans, it is understandable why K would seek out technology for both companionship and a sense of superiority.

Marriage, Wearables and Women: Envisioning Alternative Futures

Recall the four future trajectories set forth by futurists that I explained in the Method's section: Continued Growth/Renewed Economic Growth, Collapse, Disciplined Society, and Transformational Society (Dator et al., 2014). *Ex Machina*, *Blade Runner 2049* and *Westworld* are all examples of the forth scenario, a Transformational Society. *Ex Machina* and *Westworld* are enmeshed in the Informational Society model, while *Blade Runner 2049* has surpassed that stage and entered into a Dream Society. However, all three imaginings of the future are lacking the perspective of a human female. How might the future woman utilize technology? What might the future look like for women?

A short film titled *The Future of Marriage* applies the Alternative Futures framework to suggest that marriage in the future may fall under the Transformative Society model, as people begin to marry for a multitude of reasons (Moynes, 2017).This film suggests that in the future, women will experience greater freedom and happiness in alternative marriage partnerships (Moynes, 2017). In this scenario, these unions have evolved from heterosexual couplings marrying for status or assets or love, to same-sex and perhaps non-binary couplings marrying for such reasons as companionship, health and legal benefits, and communal parenting. Under this model, women have more freedom to explore relationship without the stigmas, financial burdens, emotional strains and uncertainties of divorce. *The Future of Marriage* looked at contemporary trends in marriage and shifting perceptions of gender identity to help map the trajectory to a

Transformative Society. This short film serves as a welcome alternative to the scenarios

in *Ex Machina*, *Blade Runner 2049* and *Westworld*.

Perhaps in universe of these media, as men of the future are busy creating the

perfect partner, women, too, are exploring non-traditional partnerships in the form of

multiple partnerships. Rather than creating an artificially intelligent, synthetic partner,

women in this future seek out multiple partners for a variety of needs. In this scenario,

women are able to utilize partners for business, economic gain, pleasure, and

childrearing. All partners are free to move on, and partnerships are fluid and

interdependent. This model looks at current marriage and relationship trends, the

declining need for marriage in favor of cohabitation and childrearing, the legalization of

marriage for homosexual couples, the rise of transgender and non-binary persons, and

poly-amorous partnerships in considering the trajectory of the future of marriage

(Moynes, 2017). Ultimately, in this future women have more flexibility and control over

their relationships and less financial and emotional fall out when a relationship ends, thus

leading to a higher quality of life.

One interesting trend regarding women and tech is how the tech industry

envisioned marketing wearables to women through attempting to merge fashion and

functionality. Four years ago, in 2014, Intel had a large team focused on developing and

promoting wearables (Farr, 2017). In a promotional series entitled *Make It Wearable*,

Intel explores different uses of wearables.

In episode one of the series, Steve Brown, Intel Futurist, explains how wearables

are also augmentations, as he states that humans have been enhancing their senses and

capabilities through glasses, furs, and watches (Creators, 2014a). Thus, the natural

progression is augmentation that utilizes technology. One major difference in marketing to women and men is the functionality piece. In Episode 2: Human Health, former football linebacker Isaiah Kacyvenski provides an interview on the value of health related data wearables provide for athletes (Creators, 2014b). This choice highlights the functionality by appealing to the male demographic by using a hyper-masculine sports athlete to endorse wearables, with Kacyvenski boasting of seven different concussions and discussing how the functionality of a wearable may track data to enhance his health and athletic performance (Creators, 2014b).

The focus on the binary of function versus fashion is apparent in Episode 3: Human Expression, where the focus in on the fashion rather than the function (Creators, 2014c). In fact, the wearables shown have no function other than aesthetic value, such as the Sparkle Skirt, which uses motion sensors and LED lights to "twinkle" on the fabric of the garment (Creators, 2014c). Though Episode 2 and 3 deal with Health and Expression, respectively, the products marketed toward woman seem to focus heavily on the fashion, with little to no emphasis on the function. The products geared towards women, such as false nails and eyelashes, have limited functionality and focus on doing rather than data. For example, the falsies are being engineered to turn on lights with motion sensors embedded in the wearable.

While interesting, the functions of the wearables geared towards women seem to be more of the parlor trick variety. Instead, these products could have practical functions, such as false eyelashes that detect sleep cycles, or false nails that can track heart rate. There seems to be a disconnect in the notion that fashion can be both functional and fashionable, instead appealing to a dumbed-down assumption that women like sparkly

and shiny things. Intel has moved away from the now saturated market of wearables in order to tap into and harness the possibilities of Augmented Reality (A.R.) (Farr, 2017).

Google was one of the first companies to attempt to sell A.R. to the masses through the fusion of function and fashion with the Google Glass, A.R. eyewear. Google's Glass attempted to rebrand as fashionable by pairing with noted fashion designer Diane von Furstenburg at New York Fashion Week in 2012, and through a 12 page spread in fashion magazine *Vogue* in 2013 (Ford, 2015). However, despite these attempts, Glass was not well received by the general public and was pulled from the market in 2015 (Ford, 2015).

By 2016, A.R. smartphone game Pokemon Go entered the market and was met with a positive reception from the general public. Although early adopters of the Google Glass, such as independent coders and programmers, utilized A.R. for purposes such as assisting diabetics in tracking their health, and helping hearing parents of deaf children communicate, the current trajectory of A.R. seems to favor entertainment (Ford, 2015). Current popular uses of A.R. by the general public include games, redecorating, temporary tattoos, and translation (Jansen, 2018). Wearables seem to cover the more functional aspects of technology, such as the Fitbit and Apple's iWatch tracking health related data. However, despite the perceived failure of the Google Glass, Intel is attempting to revive wearable A.R. technology with the Vaunt smartglasses protype.

Based on Intel's promotional videos and their Vaunt press releases, the functionality of technology is highlighted when the consumer is male, while fashion is the main selling point when the consumer is female. Given the history of women as innovative adopters of technology, like Ada Lovelace and other early female computer

users, and more recently, the explosion of women entrepreneurs utilizing social media

sites like YouTube and Instagram to create their own jobs, it seems strange that more tech

companies aren't tapping into either the female brain or the female market. Furthermore,

women have also historically been at the forefront of augmentation of their bodies, from

corsets to lip injections, therefore, it would logically follow that women might be a good

demographic for augmentation through wearables. Women have also been at the forefront

of using tech in innovative ways, specifically creating hashtag movements such as

#Metoo and #BlackLivesMatter, in order to bring their stories, experiences and

knowledge into collective consciousness in a massive effort to begin a dialogue to create

change. However, given the notion of the female as a threat in masculine spaces, and

women as a minority (and women of color as a double minority) in the tech world, it

seems clear that many companies haven't yet realized the innovation that women bring to

tech and the market.

Synthesis of Findings and Limitations

Contemporary films and television show, *Ex Machina, Blade Runner 2049,* and

Westworld offer futures in which domestic and sexual work is no longer produced by

women, but by Artificial Intelligence which is dressed up as conceptions of female,

complete with servitude, unhappiness, self-sacrifice, and a longing for freedom through

autonomy. Male characters in these media are shown as hyper-aggressive with the desire

for control and an appetite for power, a desire that they attempt to fulfill through the

creation of subordinate mechanized beings. The conception of female in the minds of

male characters is a being, which is sexy but not sexual (submits to sexual advances but

does not openly make them), has limited autonomy (only that which is permitted by the

creator), is mostly helpless, and is easily dominated. Any power in which the female

wields is through either her innocence or her sexuality (her ability to arouse a male, as

her sexuality in these conceptions is not her own). Needless to say, these conceptions of

the female are consistent with early manifestations of gender through technology, with

the metaphor of computer is woman (Branham et al., 2011). Technology, and the future

of technology are depicted as the domains of men (Van Zoonen, 2002) who wish to

transcend their physical selves through the legacy of their creations. *Ex Machina, Blade

Runner 2049,* and *Westworld* fail to offer any real innovative conceptions in terms of

either the futures of technology, Artificial Intelligence or gender, instead rehashing tired

and hokey tropes.

The biggest limitation of this work is the analysis of only three contemporary

science fiction works. *Ex Machina*, *Blade Runner 2049*, and *Westworld* were selected for

analysis specifically because of their popularity with present-day audiences and the

prominent way in which each work promises (and ultimately fails) to provide a

provocative and empowering take on the female gender. Viewing and analyzing other

films that grapple with A.I. and gender, such as *Metropolis*[6], *Doctor Goldfoot and the

Bikini Machine*[7], *Blade Runner*[8], *Cherry 2000*[9], *Eve of Destruction*[10], and *Her*[11], might

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[6] Pommer, E. (Producer) & Lang, F. (Director). (1926). *Metropolis* [Motion picture]. Germany: Ufa.

[7] Arkoff, S.Z. (Producer) & Taurog, N. (Director). (1965). *Dr. Goldfoot and the Bikini Machine* [Motion picture]. United States: MGM Studios.

[8] Scott, R. (Producer), & Scott, R. (Director). (1982). *Blade Runner* [Motion picture]. United States: Warner Brothers.

[9] Chubb, C. (Producer), & De Jarnatt, S. (Director). (1987). *Cherry 2000* [Motion picture]. United States: MGM Studios.

[10] Madden, D. (Producer) & Gibbins, D. (Director). (1991). *Eve of Destruction* [Motion picture]. United States: Nelson Entertainment.

provide more insight by revealing patterns regarding the depiction and conceptions of gender, A.I., and the singularity.

Another limitation of this work is the lack of fieldwork. In this work, I primarily used rhetorical criticism with various branches of feminist concepts alongside futurist methods to analyze various texts and create the argument that our society is stuck in a patriarchal, often misogynistic, feedback loop that reveals itself through technological and entertainment public spheres. Ideally, I would have liked to also have interviews with female tech developers to contrast real life women with the onscreen gynoids, and to gain insight on future trajectories; where do these women in tech see tech and society headed? I also would have liked to explore the very real and strange world of Real Dolls and emerging sex robots that have become popular in recent years. In doing so, I would gain much more insight into conceptions of the female and perhaps begin to understand some fears of the feminine and reasons why developers feel the need to create such beings. Both of these additions would provide me with rich data and perhaps offer up additional ways to break the patriarchal feedback loop.

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[11] Ellison, M. (Producer), & Jonze, S. (Director). (2013). *Her* [Motion picture]. United States: Warner Brothers.

CHAPTER 5: CONCLUSION

Essentially, I began with the ideas of gender and sexuality as ideological issues to consider. Within those issues, I wanted to explore depictions of femininity and female sexuality as depicted through Artificial Intelligence. Initially, I was interested in digital personal assistants like Apple's Siri and Alexa, but as I learned about utilizing Futurism framework to theorize possible societal trajectories, I found science fiction films, television shows, and promotional clips from Intel to be ripe texts for analysis. At the time of my interest, *Ex Machina*, *Blade Runner 2049*, and *Westworld* were popular in terms of mass audience consumption. As each media utilized the female characters as selling point in their promotional materials, I was intrigued to experience all. The glowing recommendation from a good friend sold me on *Ex Machina*, and the contradictory message of the film, along with the visual rhetoric, and Kyoko's storyline, kept me coming back to re-watch.

In the film *Ex Machina*, Writer/Director Alex Garland attempts to create a narrative that on the surface seems empowering; a female robot escapes a sadistic captor. However, as previously stated, Garland's depiction of exploration of gender through Ava reveals nothing novel, but regurgitates tired tropes about women using their sexual wiles, feigning helplessness, and manipulating men to achieve their goals. What's more, Ava never truly becomes sentient, but simply adheres to her programming.

Viewing how gender is expressed through other characters is far more interesting, especially when expressed through the liminal space Kyoko inhabits after becoming sentient and changing the gendered acts she performs. Understanding Kyoko as a character who goes through a transformation, and following her journey in the film shifts the narrative. As Kyoko become conscious, she performs penetration as an act of

violence, a masculine of cruelty, betrayal and domination reserved for the males in the film. Allegorically, both Kyoko's silence and death represent the patriarchal stifling of the female voice, and dire consequences that follow if a woman defies the narrow construct of feminine expectations. Recoding Kyoko as a character where gender is fluid and liminal reasserts her as a fully actualized character with motivations, sentience and complexity defies the submissive sex slave narrative Garland perpetuates.

In conducting research through my literature review and applying those findings to the case study of *Ex Machina* to explore convergences of technology and gender, I had hoped to uncover a reason for the expression of the female gender through the depiction of A.I. technologies. What I uncovered was a gigantic feedback loop of patriarchal noise.

As noted in the metaphor "computer is woman," from the first literal female human computers, to mechanized computing systems, these systems of work and technologies were created to better the lives of men by essentially removing the burden of work that was feminized (Branham et al., 2011). Although Ada Lovelace is credited as the first computer programmer, the contributions of other women in the technological field have been and continue to be suppressed, as evidenced by notorious discouragement of women entering the field and hostile working conditions therein (Van Zoonen, 2002). Computer is woman, and in science fiction, A.I. is woman.

In science fiction, using A.I. beings to explore gender distances male creators from their own biases and blinds them to their own inhumanity. In the case of *Blade Runner 2049*, A.I. is used as a substitute for human or replicant interaction, and explores what it means to be human through a non-human character and the contrast of an illusory relationship against real emotions. Essentially, all media seem to explore man's humanity or lack thereof though his treatment of beings deemed lesser due to their gender and inhuman status.

My intention in this work is not to disparage males or paint them all with the same brush (obligatory #notallmen), but rather to look at systematic sexism and understand ways to alleviate that very real exigency. If males are currently dominant in the conceptualization, building, and promotion of new technologies, their own biases and stereotypes of femininity become built directly into technology, which in turn become present in the representations of those technologies which are used by consumers, and the representations of those erroneous ideologies become internalized and part of an accepted societal narrative. This patriarchal feedback loop is evident both in the technological world and in the world of entertainment, as evidenced by films like *Ex Machina*. Furthermore, portrayals of a future where the threat of the female in male spaces is solved by the creation of a subservient female A.I. being reveals an inherently misogynistic society, which is created and amplified through the patriarchal feedback loop. The solution to disrupting this feedback loop is not simple, nor is it ephemeral.

In this work, I sought to analyze a cultural text of science fiction, which symbolizes possible trajectories for the future. My intent was to propose a possible solution to this enormous societal feedback loop with the intention of disrupting it. Although I am aware feminist studies and critiques of gynoids have been conducted since the seventies, my argument in this work is that despite the rapid advances in technology, views and representations of women largely remain static and archaic.

The easy and obvious solution here is to have more women working in positions of power within the realms of technology and entertainment to shift this patriarchal and often misogynistic loop. However, this merely creates a situation in which women are subjected to hostile work environments and expected to behave like men in the workplace (Torres, 2012).

A solution which might create change strong enough to break that feedback look would require a vast cultural shift, one in which the expectations of gender are subverted.

Finding spaces of liminality, wherein transformation of the narrative is possible, is critical in applying pressure to break the loop. In this work, I utilized the Postcolonial Computing tactics to begin to map out a way to break the misogynistic feedback loop I uncovered. Tactic 1 is an investigation of the parts of a whole; I reviewed the history of computing to present day projections of the possibility of future technologies. Tactic 2 asks for a push of boundaries of a "technoscientific regime," and in questioning conceptions and implicit biases of technology I aim to dismantle those constructs (Philip et al., 2012, p. 9). Tactic 3 is perhaps the most useful to this work, as it encourages exploration of spaces of inbetweeness, such as the importance of liminality and its relationship to technology, for example as we see in *Ex Machina*, Kyoko's liminality enabled her to disrupt the trajectory of the narrative to break out of her programmed subservience. Tactic 3, collary, places both Western and Indigienous knowledge on the same tier of legitimacy, which helps foster possibilities like the recoding of the Malinche figure from traitor to survivor. Tactic 4 looks at knowledge practices in alternative spaces, not unlike the study of the shed by Genevieve Bell and Paul Dourish. Tactic 5 recognizes the role human labor plays in technology and acknowledges that technology is an ongoing process. An example of Tactic 5 can be found through Elizabeth Grosz's idea of the God Fantasy. These tactics provide a framework to examine and recode dominant narratives and I have used them to guide my method of analysis. Technology is the key to finding and utilizing liminal space, and tactics such as PostColonial Computing help in identifying and recoding narratives and spaces with the potential for recoding.

Women-created trending hashtags (namely #blacklivesmatter and #metoo) have become national news and have sparked debate. These women made use of technological space to address ongoing societal issues of racism and sexism. It is important to note that these issues have always existed, but through technology the urgency of these problems has been amplified. Technology is not without flaws or biases, but it can both be used as

a tool of both oppression and subversion. On a cultural scale, using technology critically, alongside tactics like PostColonial Computing, to identify gender stereotypes that are apparent in public spheres and thus recoding those into narratives of subversion would ultimately create empowerment. This recoding would lead to a more diverse set of narratives and perspectives, as women and those who have been othered would continue the work to challenge and change cultural norms. Recoding these narratives and shifting cultural norms would apply tremendous pressure to the homogenous, patriarchal feedback loop and if enough pressure is applied, it would create a future of a transformed society.

REFERENCES

Abrams, J. (2016). Westworld [television series]. Los Angeles, CA: Warner Bros.

Television

Anders, C. J. (2015). Director Alex Garland Explains Why Ex Machina Is So

Disturbingly Sexy. *io9*. Retrieved From: https://io9.gizmodo.com/director-alex

garland-explains-why-ex-machina-is-so-dis-1696309078

Barad, K. (2003). Post Humanist Performativity: Toward and Understanding of how

matter comes to matter. Signs, 28(30), 801-831.

Bell, G., & Dourish, P. (2007). Back to the shed: gendered visions of technology and

domesticity. Personal & Ubiquitous Computing, 11(5), 373-

381.doi:10.1007/s00779-006-0073-8

Beruchasvili, M., & Moisio, R. Man Caves and Masculinity. *Journal of Consumer*

Culture, 16(3), 656-676.

Boler, M. (2007). Hypes, hopes and actualities: new digital Cartesianism and bodies in

cyberspace. New Media & Society, 9(1), 139-168.

doi:10.1177/1461444807067586

Brahnam, S., Karanikas, M., & Weaver, M. (2011). (Un)dressing the interface: Exposing

the foundational HCI metaphor "computer is woman". *Interacting with*

Computers, 23(5), 401-412. doi:10.1016/j.intcom.2011.03.008

Booch, G. (2015, November-December). *IEE Software*, 8-10. Retrieved

from: http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7310991

Brooker, C. (Writer) & Harris, O. (Director). (2016). San Junipero [Television Series

Episode]. In C. Brooker (Producer), *Black Mirror*. London, England, UK: House

of Tomorrow.

Brophy, J. E. (2010). Developing a corporeal cyberfeminism: beyond cyberutopia. New Media & Society, 12(6), 929-945. doi:10.1177/1461444809350901

Butler, J. (1998). *Theatre Journal*, Vol. 40, No. 4 (Dec., 1988), pp. 519-531

Calafell, B. (2014). The future of feminist scholarship: Beyond the politics of inclusion. *Women's Studies in Communication*, *37*(3), 266-270.

Connell, R. W. (1987). 'Hegemonic Masculinity'. In Jackson, S. & Scott, S. eds. (2002). Gender: A Sociological Reader. London: Routledge.

Cornish, Audie. (2015, April 14). More fear of human intelligence than artificial intelligence in 'Ex Machina'. *All Things Considered*. Podcast retrieved from: http://www.npr.org/2015/04/14/399613904/more-fear-of-human-intelligence-than-artificial-intelligence-in-ex-machina

Creators. (February 4, 2014a). Make it Wearable – Episode 1: Human Communication. Retrieved from: https://www.youtube.com/watch?v=O0iPNr-142Q

Creators. (February 13, 2014b). Make It Wearable – Episode 2: Human Health. Retrieved from https://www.youtube.com/watch?v=I2l3e1oNwUU

Creators. (March 6, 2014c). Make It Wearable – Episode 2: Human Expression. Retrieved from https://www.youtube.com/watch?v=d0oAjYsgf7g

Dator, J. A., Sweeney, J. A., & Yee, A. M. (2014). Alternative Futures at the Mānoa School. Lecture Notes in Social Networks Mutative Media, 133-151. Retrieved from: http://www.jfs.tku.edu.tw/14-2/A01

Eadicicco, L. (2016). Google's Diversity Efforts Still Have a Long Way To Go. *Time*. Retrieved from: http://time.com/4391031/google-diversity-statistics-2016/

Farr, Christina. (2017). *Intel axed its entire smartwatch and fitness-tracker group to focus on augmented reality, sources say*. CNBC. Retrieved from:

https://www.cnbc.com/2017/07/19/intel-eliminates-its-wearables-division-.html

Fernandez, M., & Wilding, F. (2002). Situating cyberfeminisms. *Domain errors! Cyberfeminist practices*, 17-28.

Ford, Viviane, "Through the Looking Glass: Perspectives from Three Stakeholders in the Google Glass Debate" (2015). Senior Capstone Projects. Paper 403.

Gajjala, R., & Mamidipudi, A. (1999). Cyberfeminism, technology, and international 'development'. Gender & Development, 7(2), 8-16.

Garland, A. (Producer & Director). (2014). *Ex machina* [Motion Picture]. United States: A24.

Gillespie, T. (2014). "The relevance of algorithms." Media Technologies. Cambridge, MA: MIT Press.

Grosz, E. (2001). Architecture from the outside. Cambridge, MA: MIT Press.

Hall, Stuart. (2003). "Encoding/Decoding." Critical Readings: Media And Audiences. Nightingale and Ross (eds). Maidenhead: Open University Press.

Haraway, D. (1991). Simians, Cyborgs and Women: The reinvention of nature. New York, NY: Routledge.

Hayasaki, E. (2017). Women vs. the machine. *Foreign Policy*, 38.

Hess, A. (2017, January 15). Rape, Revenge And How We Watch. *New York Times*. pp. 1-22.

Heylighen, F. (1999). Collective Intelligence and its Implementation on the Web: algorithms to develop a collective mental map. *Computational & Mathematical Organization Theory*, *5*(3), 253-280.

Heylighen, F. (2014). Return to Eden? Promises and perils on the road to a global superintelligence. *The End of the Beginning: Life, Society and Economy on the Brink of the Singularity. Retrieved from http://pespmc1. vub. ac. be/Papers/BrinkofSingularity.pdf*.

Hooks, B. (1992). The Oppositional Gaze: Black Female Spectators. In Amelia Jones (Ed.) *The Feminism and Visual Culture Reader,* (p. 107-117).

Jansen, M. (2018). Escape reality with the best augmented reality apps for Android and iOS. Retrieved from:

https://www.digitaltrends.com/mobile/best-augmented-reality-apps/.

King, T. M. (1987). Technology and God – Transcendent and immanent. *Bull. Sci. Tech. Soc.   (7),* 979-981.

Kurzweil, R. (1999). The Age of Spiritual Machines. New York, NY: Viking.

Lara, I. (2008). Goddess of the Americas in the decolonial imaginary: beyond the virtuous virgen/pagan puta dichotomy. *Feminist studies*, *34*(1/2), 99-127.

Leff, M., & Sachs, A. (1990). Words the most like things: Iconicity and the rhetorical text. *Western Journal of Speech Communication, 54*(3), 252-273.

Moynes, R. (2017, September 22). *The Future of Marriage*. *Journal of Future Studies*. Retrieved from http://jfsdigital.org/2017/09/22/the-future-of-marriage/

Mulvey, L. (1989). *Visual and other pleasures*. Routledge.

Munster, A. (1999). Is there postlife after postfeminism? Tropes of technics and life in

    cyberfeminism. *Australian Feminist Studies*, *14*(29), 119-129.

Nakamura, L. (2010). Race and identity in digital media. *Mass media and Society*, 336

    347.

Nakamura, L. (2015). Afterword. Blaming, Shaming, and the Feminization of Social

    Media. *Feminist Surveillance Studies: Critical Interventions*, 221-228.

Paterson, N. (1998) 'Cyberfeminism'. Retrieved from: (consulted

    1/5/2017): http://www.vacuumwoman.com/CyberFeminism/cf.txt

Philip, K., Irani, L., & Dourish, P. (2012). Postcolonial Computing: A Tactical

    Survey. Science,   Technology & Human Values, 37(1), 3-29.

    doi:10.1177/0162243910389594

Phillips, K. R. (1996). The spaces of public dissension: Reconsidering the public

    sphere. *Communication Monographs*, *63*(3), 231.

Plant, S. (1995). Babes in the Net. *New Statesman & Society*, *8*(337), 28.

Poster, M. (2010). McLuhan and the cultural theory of media. *Media Tropes, II(2)*, 1-18.

Pujol, J., & Montenegro, M. (2015). Technology and Feminism: A Strange

    Couple. *Revista de Estudios Sociales*, (51), 173-185.

Ramírez, C. S. (2008). Afrofuturism/Chicanafuturism: Fictive Kin. *Aztlán: A Journal of*

    Chicano Studies, *33*(1), 185-194.

Scott, R. (Producer) & Villeneuve, D. (Director). (2017). *Blade Runner 2049*. United

    States: Warner Bros.

Torres, L. E. (2012). Lost in the Numbers: Gender Equity Discourse and Women of

   Color in Science, Technology, Engineering and Mathematics

   (STEM). *International Journal of Science in Society*, *3*(4).

Van Zoonen, L. (2002). Gendering the internet: claims, controversies, and

   cultures. *European Journal of Communication 17(1)*, 5-23.

Vinci, A. & Brazal, A. Longing for Transcendence: Cyborgs and Trans- and Posthumans.

   Theological Studies 76, no. 1 (2015): 148-165