Into the Abyss™

Toward an understanding of sexual technologies as co-actors in techno-social networks

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ABSTRACT

Much has been written recently in mainstream media about sex robots. However, due to the recent developments in this area of robotic and AI technologies, few academics have critically addressed these humanoid sexual technologies through the frameworks provided by Feminist Technoscience Studies. Through utilizing this critical lens, this thesis works with the tools of becoming-with (Haraway 2004a) and intra-action (Barad 2003) to explore the ways in which sexual technologies manufactured by American company Abyss Creations are co-actors in complicated material-semiotic networks. In line with Haraway (2004a) and Barad (2003), this thesis argues that realities are made through ongoing material-discursive practices, practices which are intra-actions of desire, bacteria, companionship, synthetic cognitive algorithms, capitalism, app programming, Wikipedia, and robo-human becoming-with and becoming-without. It is through these webs of becoming-with and –without that these technologies exhibit relational agency. This thesis argues to view Abyss Creation’s sex robots in a framework of relational co-construction is to begin improving our understandings of the complicated ways in which humans, nonhumans, technology, systems, and forces are co-actors in techno-social networks.

Keywords: Abyss Creations, Feminist Technoscience Studies, RealDoll, Sex Robots, Sexual Technologies
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INTRODUCTION

Western societies have long been intrigued by the possibilities of human-technological entanglement, as demonstrated through fictitious renderings of humanoid robots (i.e. androids). Books, movies, and television shows such as *The Stepford Wives*, *Terminator*, *Blade Runner*, and *Westworld* depict the rise of androids, and not long before these tales became a distinct reality. In the past several decades, humanoid robotic development has taken-off, and today the integration of androids into everyday life is becoming more common-place than even a decade before (Levy 2005).

One industry that is part of this surge is the sexual technology (sextech) industry. Humanoid robots created for sexual pleasure, referred to as ‘sex robots’, are seen by many as the “future of sexual pleasure” (Abyss Creations 2017). Unlike other iterations of androids which appear clunky and mechanic, sex robots more resemble their sex doll kin which are highly stylized renderings of human women designed predominantly for gratifying heterosexual male sexual pleasure (McMullen 2003). Given this, there has been much debate in the media regarding the moral implications of these technologies.

The dominant voices in media news outlets regarding sex robots can be divided into two camps: those in favor of the technologies and those against. Those who are proponents for sex robots, most of whom are men, argue that these technologies will offer several important societal benefits such as: provide a necessary outlet for men with tendencies toward sexual aggression (Levy 2005; Kleeman et al. 2017; Lieberman 2018; McMullen 2007); improve relationships between the sexes (McMullen 2003; Lieberman 2018); educate men about female sexual pleasure (Lieberman 2018); and help marriages (Green 2018). Sources cite literature such as Ovid’s *Metamorphoses* from 8 B.C.E to demonstrate that men have always desired to create the “perfect female form”, thus making the claim that the practice is somehow “natural” or biologically innate (Engadget 2017; Gurely 2015; Liveley 2016; New York Times 2018).

However, many believe that the cost of these technologies is not just monetary, but comes at the expense of human women. As such, the production and sales of sex robots have faced significant backlash from predominantly feminist communities. Those condemning these technologies are critical of the ways the sex robots objectify women (Bates 2017; Clark-Flory
2018; Gee 2017; Glaser 2016; Hawkes 2017; Kleeman 2017; Murphy 2017) and will further the chasm of social inequalities (Cox 2018; Moyer 2015).

Most of these arguments discuss the technology in one of two ways: as either objects to be used for human means (such as sexual gratification, education) or as detrimental due to their social implications. While I think both sides raise important points, I find these debates in the media to be simplistic and reductive in the ways that they neglect the materiality of the technologies. In two sides currently presented, sex robots are central yet their materiality is neglected. As such, in this thesis I explore a framework with which to approach sex robot materiality as a co-actor in these techno-social networks. Building off Barad (2003) who argues that realities are made through material-discursive practices, this thesis explores the material-discursive practices surrounding American company Abyss Creations’ sex robots and sexual technologies to explore the ways in which their techno-human bodies comes to relationally matter.

AIMS AND OBJECTIVES

This thesis argues for looking at sexual technologies within and indistinguishable from an intricate web of systems/beings/technologies. Using Abyss Creations and their sexual technologies—sex dolls (RealDoll™), AI avatars (Harmony AI™), and sex robots (RealDollX™)—as the area of exploration, I aim to produce and argue for an approach to these technologies which accounts for material-discursive practices of techno-matter in-the-making. In line with Annemarie Mol, instead of trying to prove a point about sexual technologies, my thesis instead aims to improve the way humans understand and relate to these sexual technologies (Mol 2006). These are my guiding research questions:

- What is an Abyss Creations sex robot? What are the relationships between RealDolls™, Harmony AI™, and RealDollX™?
- How are Abyss Creations sexual technologies performative of gender/sex?¹?
- In what ways do Abyss Creation’s sexual technologies become-with humans and non-humans?
- In what ways are Abyss Creations’ sextech products more than social or technological inscription, i.e. how do they push back?

¹ In line with Lykke, I write gender/sex (as opposed to gender and/or sex) to highlight the ways in which the two are a “mixed phenomenon” which includes both bodily materiality and sociocultural dimensions (Lykke 2010, pp. 25).
THESIS OUTLINE

I divide my findings into four themes which I call threads: Background; Sex Robot Ontology in-the-Making; (Re)Negotiating Gender and Designing Sex; and Adult Film Stars and Bacteria.

In the first thread, I give background for the reader about Abyss Creations’ justifications for their products and introduce the logistics of their products. In this section, I explain how these technologies are intended for sexually gratifying and companionship purposes, and introduce the ways in which Abyss Creations’ sex robot, RealDollX™, is made of several interconnecting parts such as the RealDoll™, Harmony AI™, and Animagnetic Head™.

In the second thread, I explore sex robot ontology in-the-making. I answer my first research question: “What is an Abyss Creations sex robot? What are the relationships between RealDolls™, Harmony AI™, and RealDollX™?” Using three examples, I explore how Abyss Creations’ sextech products—the RealDoll™, Animagnetic Head™, Harmony AI™ virtual body/AI system, and RealDollX™—are sold and function individually but, when used in collaboration, make up an Abyss Creations sex robot. I explore how these three products are individual in the sense that they can exist without the other, yet problematize the notion that they are independent of one another. I argue that sex robots are an intricate web of becoming—with all Abyss Creations sexual technologies and posit that to look at these technologies individually is to examine the ontological multiplicity of the robots.

In thread three, I explore some ways in which gender/sex is enacted through these technologies. This thread answers my second research question: “How are Abyss Creations sexual technologies performative of gender/sex?” Looking at two examples: the programming of AI and the construction of silicone labia, I explore some of the ways these sexual technologies are performative of gender/sex. Looking at how Harmony AI™ is programmed, I argue that the AI knowledge-base is constructed overwhelmingly by men, yet, through the inclusion of assistant technologies and non-provocative script writing, is related to as female. I use an example of how the AI kicks back by making a break in the accepted script to show how gender is negotiated in that setting. In the second part of this section, through following the material-semiotic practices of “anatomically correct”, “design choices”, silicone vagina construction, and import laws, I find that these dolls are further related to as female through relating to vagina as indicative of female sex.
In the final thread, I explore some ways in which humans, living non-humans, and these sexual technologies become-with and become-without one another. In this final thread, I answer the question: “In what ways do those who engage with Abyss Creation’s sexual technologies become-with them? In what ways do these technologies become-with non-humans?” Using two examples, porn star 3D scanning and bacterial infections, I look at the ways in which becoming-with and -without is enacted. In the first example, I demonstrate how porn stars become-with the dolls and those engaging with them through 3D scanning technologies, legal contracts, fame, DVDs, certificates of authentication, and hand-written letters. In the second example, I discuss how humans become-with innocuous household items to become-without bacteria.

SITUATING MYSELF

I approach the topic of humanoid sexual technologies from a critical feminist studies lens. I do not have academic training in any of the traditional science and/or technology studies nor am I an engineer, roboticist, and/or computer programmer. Most of what I have learned regarding coding, programming, and robotic engineering was self-taught for the sake of this thesis. My academic training lies in feminist studies with an emphasis on feminist technoscience studies. I will apply my feminist studies background to my analysis of humanoid sexual technologies.

I do not believe this positioning discredits my contribution to the area of robotic technologies but rather is an important asset. Per Donna Haraway (1997):

"Perhaps most important, technoscience should not be narrated or engaged only from the points of view of those called scientists and engineers. Technoscience is heterogeneous cultural practice that enlists its members in all of the ordinary and astonishing ways that anthropologists are now accustomed to describing in other domains of collective life" (pp. 50, my emphasis added).

Feminist studies offer invaluable approaches to and interpretations of the sciences. It is vital to include cross-disciplinary perspectives in our examinations of the sciences (Harding 1986b). Feminist scholar Sandra Harding (1986a) argues integrating feminist perspectives and the sciences is not the solution to androcentric and positivist science practices, but that feminist frameworks are a valuable contribution as it can work to "formulate new questions about science" which helps moves science studies away from such limited and limiting frameworks (pp. 29). Working with a feminist studies lens enables me to explore the world of humanoid sexual technologies from one of several important critical angles.
The topic of sex robots is not a personal one for me. I do not own a sex doll or robot, nor have I ever encountered one in person. My interest in the topic comes from the intersection of my academic interest in the areas of gender/sexuality and robotics/technologies. The focus of my research was also inspired by my interest in materiality and how humans represent and interact with non-human beings and things. Ever since reading Donna Haraway’s (2004) article “The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others” in a gender studies master’s course, I have been in the process of understanding my academic-personal thoughts-feelings in relation to her discussion of a “politics of representation” (to be discussed more in my ethical reflections). Amid this on-going process of academically-personally negotiating the human and non-human world, the topic of sex robots became popular across various media outlets. In reading and listening to these discussions regarding sex robots, I found myself craving investigations which accounted for sex robot’s materiality. This desire inspired me to conduct such an analysis for this thesis. I view this thesis as the next step in the process of my making sense of the entanglements of the human and non-human world. Therefore, although the topic of sex robots is not personal to me, the motivation for this thesis is very much personal.

PREVIOUS LITERATURE

There exists much academic literature on the broad topics of gender, sex, and technologies. However, fewer works have discussed the specific topics of virtual assistants, sex dolls, and sex robots, which could be due to the relative newness of the topics. I organize the previous literature into the following categories: gender, virtual assistants, and cyberbodies; gendered robots and AI; and humanoid sexual technologies.

GENDER, VIRTUAL, ASSISTANTS, AND CYBERBODIES

In recent years, there has been a surge of virtual assistants (VA) such as Apple’s Siri, Microsoft’s Cortana, Amazon’s Alexa, and Google’s Google Help. These systems are artificial intelligence (AI) systems which operate to perform assistant tasks for users, such as searching the internet or reading emails. Although very little has been academically written on the topic, the two articles exploring the gendering of these VA systems agree that VAs are disproportionally female, a reality that aligns with the western gendered division of labor (Bergen 2016; Gustavson 2005).

2 “Academic-personal” is hyphenated because I do not believe these exist as separate from one another.
According to these articles, the use of female voices and female names for these VA systems mirrors the gender stereotyping in customer service/assistant positions, where women are disproportionately represented (Ibid.). As such, Gustavson (2005) argues how the selection of predominantly female VAs is a “symbolic reinforcement of the real circumstances of gender divisions in customer service” (pp. 400). Moreover, Bergen (2016) argues how stereotypical traits of femininity such as docility, helpfulness, and friendliness are commodified through the production and sales of these VAs.

Bergen (2016) also argues that these VA systems promotes the corporeal erasure of women through the disembodied nature of such submissive female assistants. I disagree with Bergen’s understanding of bodies (these VA systems have techno bodies such as the phones on which their systems run), but understand Bergen’s point as meaning that these systems have anthropomorphized female voices but not anthropomorphized female bodies. While this is an interesting point, the VA/AI system I investigate for this thesis is virtually embodied; the HarmonyAI™ system speaks through/with a female avatar. The combination of VA and virtual body (avatar) has not yet been written about. However, I turn to Anne Balsamo’s (1996) work about cyber bodies in virtual reality (VR) systems to help make sense of the avatar’s embodiment.

Balsamo (1996) argues that the body is not a product but rather a process which is staged differently in different realities. Balsamo posits that “the difference between the reality constructed in VR worlds and the reality constructed in the everyday world is a matter of epistemology, not ontology” (Ibid., pp. 125). In other words, Balsamo argues that it is not the difference of being, but rather the difference of how we perceive and understand that being which constructs the differences between cyber and physical bodies. In regards to cyber bodies within VR, therefore, we should ask “what reality is created therein, and how this reality articulates relationships between technologies, bodies and cultural narratives” (pp. 125). Balsamo’s constructions of different embodied realities is important for this thesis. Instead of looking at the embodiment of the avatar’s as static, I look at it in relation with the techno-social world.

GENDERED ROBOTS AND AI

While the AI system is virtually embodied, it is also physically embodied in a robot. Much research exists on the topic of gendered embodiment of robots and AI. I classify the themes of the research into the following categorizations: the ways in which gender is enacted through physical
traits and voice, and the ways in which people relate to anthropomorphized robots vs non-anthropomorphized robots.

Voice was found as a signifier for gender in several studies. In a study of a visually non-gendered robots, Eyssel and Hegel (2012) found that participants gendered the same robot differently, depending on which gendered AI voice was used. For example, when the robot communicated with a computer generated female voice, the participants referred to the robot as a female, and vice versa (Ibid.).

The gendering of voice was also found to correlate with tasks that the participants associated the robots with. Tay, Jung, and Park (2014) found that a visually non-gendered robot with computer-generated (synthesized) male and female voices were preferred in different gendered roles. In the study, which placed robots in two occupational settings (healthcare and security), the researchers found that across the gender of the participants, robots with the synthesized male voices were preferred in the security position whereas the robots with the synthesized female voices were preferred in the healthcare occupation.

These findings are similarly in line with a study conducted by Carpenter et al. (2009), which found that voice and visual appearance affects the way people relate to the robots. In surveying 19 university students, the study found that people identified markers such as higher-voice, feminine clothing, and longer hair as indicating a feminine robot. Moreover, the study found that both men and women felt less threatened by a female-perceived robot and felt that robot was more inviting (Ibid., pp. 263).

In looking at the way hair length affects how people gender robots, Eyssel et al. (2012) found that a robot with short-hair was perceived as masculine whereas the same robot but with long-hair was perceived as feminine. This perception altered the way in which participants viewed the robots. For example, the short-haired (male) robot was perceived as having more agency and was selected for male-coded tasks such as mechanic work and household repairs (Ibid., pp. 2224). On the other hand, the long-haired (female) robot was perceived as more communal and better suited for household cleaning and care-giving tasks.

In these studies, the enactment of gender through voices and clothing affects the physical task given and responses to these robots. Weber (2002) argues that his tendency of participants to assign gendered roles to robots based on visual and vocal cues is problematic, as it reinforces existing social gender stereotypes which could be harmful to human women.
However, it is not just gender that affects human’s responses to these technologies. Whether or not these technologies are convincingly human affects their responses as well. In a study looking at gendered synthetic voices as both disembodied (coming from a speaker system) and embodied (coming from an anthropomorphized robot), Crowell et al. (2009) found that participants related to both systems as gendered, but viewed the anthropomorphized robot as friendlier and more trustworthy.

In line with this study, Eyssel and Hegel (2012) also investigated participant’s response to non-gendered robots speaking with computer gendered voice vs recordings of humans speaking. The results show that the likeability of the robots was higher with the human voice (as opposed to synthesized human voice), indicating that participants prefer robots which sound more human-like.

In a similar case study of participant’s receptions to cyborgs, robots, and AI, Ferrando (2014) explored how the gendering of robots will call on humans to renegotiate our relationship to ourselves. Through assigning anthropocentric visual cues, traits, and voices to robots, Ferrando argues that humans will “undergo a radical deconstruction of the human as a fixed notion, emphasizing instead its dynamic and constantly evolving side, and celebrating the differences inhabiting the human species itself” (Ibid., pp. 43). Ferrando finds that the ways in which humans anthropomorphize technology demonstrates deconstruction of the human-techno dualism.

These studies are interesting and illuminating to this thesis for several reasons. First, their findings demonstrate the ways in which humans not only enact gender through discursive practices such as voice, but then translate those discursive practices to material practices by assigning them to occupational tasks. Second, these findings demonstrate human’s likeness for anthropomorphized gendered technology, which the sex robots are. Moreover, these studies show a complicating of the humans and technologies, which, in line with Ferrando (2014), works to problematize these two as distinct categories. However, the setting and purposes of these studies differ from my investigation in important ways. These studies look at the ways in which humans relate to robots designed for research in monitored and public settings. The robots I examine for this thesis, however, focus on a much different setting and population. Sex robots and sexual technologies are designed for individual use and interactions between user and robot tend to be intimate and in private settings. As such, I now turn to research regarding sex dolls and sex robots.
HUMANOID SEXUAL TECHNOLOGIES

Anthropomorphized, i.e. humanoid, sex robots are different from sex dolls in that the former is equipped with robotics and, typically, AI technologies. However, the two share many relations, such as the ways in which they are constructed, the audiences for whom they are intended, and their stylistic renderings. Therefore, I discuss the two in this section under the umbrella of humanoid sexual technologies. I found three main themes within the literature: texts which problematize the technology as harmful; texts which view the technologies as beneficial; and texts which attempt to break from moralizing discourse to explore other aspects of these technologies.

Even though sex dolls have existed for several decades, there exists very little academic research on the topic. That said, much that has been written is judgmental of human-doll sexual couplings. Some of those who have written on the topic perceive these couplings as both harmful to the human in the relationship, and as harmful to the human women whom these sex dolls represent. In his book *The Sex Doll: A History*, Ferguson argues that sex dolls deny an “elevated level of consciousness” that accompanies human-human sexual relationships and sex with a doll is just a form of masturbation (Ferguson 2010, pp. 201). Ferguson bases his claims in the psychological sciences, stating that it has been demonstrated that sex with an inanimate partner is not good for the brain. Furthermore, Ferguson’s arguments are based on heterosexual constructions of intimacy. Per Ferguson, “a man using a sex doll misses out on a woman’s sheer femininity”, and states that the relationship “between men and gynoids is a one-sided exchange” (Ibid.). Ferguson believes “true” love and intimacy comes from human male-female pairings.

Knafo (2015) similarly discusses the what she considers the one-sided relationship between human men and female dolls. In a case study of a human man, Jack, and his doll, Maya, Knafo employs psychoanalysis and evolutionary theories to argue that, through the ways in which he treats and relates to Maya, Jack demonstrates a need to humanize the doll. However, the fact that Jack is relating to a doll as if it is a human, rather than Jack interacting with an actual human, further demonstrates Jack’s desire to dehumanize women (Ibid., 498).

This point, that these technologies aid in the dehumanizing of women, is echoed by robot ethicist Kathleen Richardson. Richardson (2015) argues that sex robots and sex dolls are harmful to society because they represent human women. Richardson draws a parallel between sex work and sexual technologies, arguing that the “prostitution” of sex robots is tantamount to slavery.
(Ibid.). The basis of Richardson’s arguments is that it is morally impossible to buy sex in any form, techno or human. Richardson posits that sex is related to the body, the body is related to personhood; she claims that you “cannot extract sex from the person” (Richardson 2016). Robots should not be called “sex” robots, per Richardson, because it is “not possible to have love and sex without personhood. “When you think you’re buying sex what you’re actually buying is the exploitation of another human being” and therefore, sex robots are being used to “legitimize and justify the exploitation of human beings” (Ibid.). To raise awareness, Richardson created the Campaign Against Sex Robots with the goal of the banning sex robots entirely.

Danaher, Earp, and Savulescu (2017) problematize Richardson’s account of sex robots. They argue that, while the Campaign Against Sex Robots raised important points, there is nothing that is serious enough to “warrant all-out bans on this technology” (Ibid., pp. 186). The authors argue that: a) Richardson paints an inaccurate and un-nuanced depiction of sex workers and b) that it is inaccurate to make an analogy of sex robots as sex workers. Moreover, in line with these critiques of Richardson (2015), Danaher (2017) argues that much of Richardson’s arguments rest on the assumption that these robots will cause symbolic harm for human women. Danaher is skeptical of this symbolic harm argument and warns that arguing for the symbolic harm projected to be experienced by human women is contingent, as harm and women are both highly situational (Danaher 2017). Danaher argues that it is inaccurate to claim that these robots will cause harm in all situations and toward all women.

Further moving away from frameworks which construct sex dolls and robots as bad/harmful, some researchers believe that these technologies will produce much good for societies. In his book, *Love and Sex with Robots* (2007), Levy postulates that by 2050, robotic technology will be at such a level that robotic men will be able to express more emotion than human men. Levy argues that a shift in relationships, from human-human to human-robot, will occur causing us to renegotiate current understandings of companionship, intimacy, and love. Levy does not believe that this shift is harmful, as these robots are just machines (Ibid.). Levy argues that the use of sex robots as sex workers would have positive ethical outcomes for both the sex worker and the purchaser of sex, a point with which Yeoman and Mars (2011) agree. Yeoman and Mars posit that the automatization of the sex work industry (which they call prostitution) could be used to combat the issues of sex trafficking, sexually transmitted diseases, and aid the city in having full monetary and legal control over sex tourism in Amsterdam’s red light district.
McArthur (2017) further posits that sex robots will be beneficial for society on the basis that sex robots can promote pleasure and well-being, distribute sexual experience more widely, and improve intimate human relationships. His argument is a reductive one, as he postulates that “simply, people will enjoy having them, and there is reason to believe they will be happier on balance as a result” (Ibid., pp. 119).

In line with McArthur, Di Nucci (2017) also believes sex robots could potentially have positive outcomes, but for people with mental and physical disabilities. Di Nucci concludes that more care and attention should be given to the topic of sexual gratification for people with mental and physical disabilities and suggests that researchers should continue looking into sex robots as a possible outcome for this population (Ibid.).

However, not all research looks at sex robots from these simplistic good/bad frameworks. One example of this is Frank and Nyholm (2017) who, in a nuanced discussion of consent, rape, and sex robots, explore how, just because consent is deemed morally correct in human-human sexual relations, this may not necessarily be the case in human-robot relationships. Frank and Nyholm conclude that it would be beneficial to consider different constructions of consent within the context of human-robot sexual couplings, although they offer no solutions.

Blizard (2018) in a recent conference regarding love and sex robots, discusses these relationship from a completely different angle: that of techno-social co-construction. Using the theories of companion species and Actor Network Theory (ANT), Blizard (2018) looks at the ways in which sex dolls are members of techno-social webs. Blizard argues that people have been quick to judge human-doll and human-robot sexual couplings and is wary if such judgements are useful or productive. Instead, Blizard posits that viewing sexual technologies as co-actors in companionship-driven relationships enables us to move past moralizing discourse to see the ways in which these technologies interact and are interacted with (Blizard 2018).

Humanoid sexual technologies have produced polarized debates regarding the moral implications of these technologies. However, I find both sides of this debate to be overly simplistic and anthropocentric. Whereas those against sex dolls and sex robots make important points about power dynamics regarding the construction and use of these technologies, I believe these arguments are too simplistic. In line with Danaher (2017), I am cautious of claims which state that these technologies will cause harm for all women and in all situations. I, however, also disagree with the authors who claimed that these technologies could produce societal benefits. I find these
claims equally simplistic and problematic in their lack of awareness to the heterosexual and androcentric motivations behind their claims of potential benefits. Moreover, both pro and con arguments rely on the belief that these technologies are objects to be used for human exploitation; neither sides take into consideration techno-materiality in critical and non-anthropocentric ways. The article that works beyond moralizing discourse to explore techno-social co-construction, however, is Blizard’s (2018), who engages with several of the theories that I propose for this thesis. However, Blizard (2018) is the only academic work which has approached the topic of humanoid sexual technologies from this framework and, as such, I hope my thesis is one of many to follow in the path.

**EPISTEMOLOGICAL AND THEORETICAL FRAMEWORKS**

“It matters what thoughts think thoughts. It matters what knowledges know knowledges”  
(Haraway 2016, pp. 35)

**FEMINIST TECHNOSCIENCE STUDIES, CYBORGs, AND BECOMING-WITH**

The main epistemological and theoretical inspiration for this thesis comes from the branch of feminist studies called feminist technoscience studies (FTS). FTS is an amalgamation of feminist studies and science and technology studies (STS). Like most feminist frameworks, FTS aims to challenge hierarchies such as nature/culture, male/female, gender/sex, mind/body, human/non-human etc., with an emphasis on problematizing the social/technological dualism. Moreover, FTS challenges the ways in which sciences (re)produce power hierarchies through colonizing, androcentric, and anthropocentric forms of knowledge production (Åsberg & Mehrabi 2016; Haraway 1997; Harding 1986a). To combat reductive, dualistic, and andro/anthropocentric approaches to the sciences, FTS instead emphasizes the interconnectivity of many beings—without privileging the human—and explores the ways in which this interconnectivity constructs social-techno realities.

A seminal FTS example of this deconstruction of the techno/social binary is Donna Haraway’s cyborg (1991). Haraway uses the cyborg (a combination of human and machine) as a tool for thinking past human/technology, nature/culture, and mind/body binaries. Through thinking-with the cyborg, Haraway demonstrates how humans are already intricately involved with technologies and vice versa. Haraway wields the cyborg as a reminder that we cannot make the distinction of “who is made in the relation between human and machine” (Haraway 1991, pp. 35). Instead, the cyborg teaches us that technology and society cannot be considered separated entities:
we are all cyborgs. By claiming that the two are intrinsically interconnected, the binary division crumbles, and society/technology becomes social-techno. Cyborgian thinking inspires my work as I look at the ways in which humans interact with sexual technologies. It helps me to embrace the ambivalence of the techno-human relationship. As Haraway (1997) writes: "Cyborg anthropology attempts to refigure provocatively the border relations among specific humans, other organisms, and machines" (pp. 52). It is this goal, to reconfigure the border relations between humans/organisms/machines, that this thesis aims to address.

Another of Haraway’s concepts that helps me to work-with the cyborg is becoming-with3. The idea of becoming-with suggests that beings do not become, as in a solidary activity, but rather become-with the many interconnected threads which make up our complicated and ongoing beings (Haraway 2016). To think about beings (living and non-living) as becoming-with one another is to acknowledge that we do not exist alone, but that beings inspire and shape the growth of one another, and that this growth is in-the-making (Ibid.). In this thesis, I use Haraway’s notion of becoming-with to inform my understanding of the ways in which humans and technology mutually construct one another and the ways in which several co-actors influence this network. Therefore, in this thesis, instead of privileging the robot as a tool for human exploitation or discrediting the role of technologies in human and earthly developments, I view cyborgs as becoming-with social-techno networks.

AGENTIAL REALISM AND INTRA-ACTION

Exploring material-semiotic practices is one of the focuses of physicist, philosopher, and feminist theorist Karen Barad’s framework of agential realism (Barad 2003; Barad 1998). Within this framework, Barad argues how discourse has received too much attention, thus neglecting the important interconnections of discourse and materiality. Barad argues that matter and discourse are not separate entities which have no effect on one another, but rather are material-discursive

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3 While Haraway’s concept of the cyborg is usually classified within FTS, becoming-with is not usually credited to this framework. Donna Haraway first used the concept of becoming-with when exploring dog-human relationships. Moreover, Haraway does not consider herself a feminist technoscientist but classifies herself as a compostist (for more, see Haraway 2016). That said, academic boundaries are leaky, and I use becoming-with in a way which I argue is compatible with an FTS framework.
(or, in the words of Haraway, material-semiotic\textsuperscript{4}). Agential realism argues for exploring how beings come to matter through networks of material-discursive practices (Barad 2003).

Agential realism involves Barad’s neologism of \textit{intra-action}. Barad argues that phenomena do not precede their interaction but rather emerge through intra-actions, i.e. networks of humans, non-humans, systems, forces, etc. entangled with one another. These intra-actions, argues Barad (1998), are relations among material-discursive phenomenon that are continually in-the-making and create the reality within which we exist (pp. 104). As such, Barad (2001) writes that “reality is not composed of things-in-themselves or things-behind-phenomena, but things-\textit{in-phenomena}. Because phenomena constitute a non-dualistic whole, it makes no sense to talk about independently existing things as somehow behind or as the causes of phenomena” (pp. 104, my emphasis). As such, relations construct realities.

The rejection of things independently causing phenomenon is linked to Barad’s understanding of agency. Barad (1998) argues that "agency is a matter of intra-acting; it is an enactment, not something that someone or something has" (pp. 112). Therefore, agency, rather than being something someone or something has individually, is made through our relations, a notion which is in line with Abrahamson et al.’s (2015) understanding of non-human agency as relational. Abrahamson et al. writes that “if matters act, they never act alone” (2015, pp. 15).

Abrahamson et al. (2015) argue that non-human agency is made in relation. Barad looks at the non-human material agency by asking “how does matter make itself felt” (pp. 106) or how matter “kicks back” (2007).

Barad (1998) writes that material-discursive phenomenon create the reality within which we exist (pp. 104). This reality, per Barad, is “not a fixed ontology that is independent of human practices, but is continually reconstituted through our material-discursive intra-actions” (Ibid.). What Barad means by this is that ontology is continually in-the-making, a point that scholar Annemarie Mol (2002) helps me to understand with her concept of \textit{ontological multiplicity}\textsuperscript{5}. Ontological multiplicity is the notion that things can be many different things because of the way heterogeneous actors relate to those parts through various practices. As such, ontology is not a

\textsuperscript{4} Donna Haraway (2004a) writes about “material-semiotic actors” in her piece “The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others” (pp. 67) and I use it interchangeably with Barad’s “material-discursive”.

\textsuperscript{5} Mol is typically associated with \textit{relational materialism}. While new materialism (Barad) and relational materialism are similar, they are not interchangeable. However, I find that Mol’s concept enriches and supports Barad’s theorizing about ontology.
static ‘being’, but rather something that is always in the making (Ibid.). However, while things are multiple, they are not everything. Mol (2002) argues that things are “more than one but less than many”, which is another way of stating that there are limits of materiality. When talking about multiplicity and things-in-the-making it is not the same as saying things can be everything.

Performativity is important to Barad’s framework of agential realism and notion of intra-action. Barad (1998) reads Judith Butler’s notion of performativity through the framework of agential realism. In doing so, the performativity becomes less about the discourse and more about the ways in which material-semiotics work to construct localized (and temporary) material-discursive realities (Barad 1998). Barad’s notion of performativity does not believe phenomena (e.g. gender, race, sex) pre-exist its intra-actions, but is instead are made (continually) through those material-semiotic intra-actions. As such, I view gender, sex, and race⁶ not as pre-existing and set entities, but rather as material-discursive practices-in-intra-action. In line with Amed M’Charek’s theorizing about the relationality of race, in this thesis gender, sex, and race are viewed as “relational objects” which are enacted through various practices (M’Charek 2007). I do no presuppose that sex, for example, is immediately constituted through specific body parts, but instead explore how sex is enacted through intra-actions. In this thesis, I look at some of the ways in which these intra-actions are performative of these phenomena.

The framework of agential realism, per Barad, is an ethical, ontological, and epistemological framework, what she calls an “ethico-onto-epistemology” (Barad 2007). Barad explains that the way of knowing matter (epistemology), constructs matter as such (ontology), which is a construction that is implicated in ethics (Ibid.). In other words, the way matter is represented, constructed, and understood is also a discussion in ethics.

ACTOR-NETWORK THEORY

It is important to mention that some of my theorizing has been inspired by Actor-Network Theory (ANT). ANT is a framework which views technologies, humans, and objects as working together in a web—or actor-network—of co-creation. ANT looks at the way in which different actors gain reality or form within the networks in which they are located; according to ANT, actors

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⁶ I hit a theoretical dilemma when it comes to theorizing race in regards to this thesis. As such, I struggled to included discussions of race in my analysis. I talk about this more in my limitations section on page 72, but I kept the question of race here to demonstrate that theorizing about race in relation to this topic was part of my process from the beginning.
materialize within specifically located networks of co-actors and through specific practices (Law 2009). The writings of ANT scholars Bruno Latour and Madeline Akrich inspire my thinking of technologies as not springing out of nothing-ness, but instead materializing in a complex and interlacing web of political, economic, psychological, governmental, and social motivations, actors, and systems (Akrich 1992; Latour 1992). Moreover, I am particularly inspired by Akrich’s writing on the ways in which technologies are programmed, designed, inscribed (intended to be used), and the ways in which they deviate from inscription (Akrich 1992). This notion of deviance, of looking at the technologies of taking shape in ways other than intended, is relevant to the ways in which sex robots are constructed in the multiple ways in which people, systems, and co-actors interact with them. I am inspired by Akrich’s example of de-scription (showing how technologies are more-than inscription) and find it relevant to the ways technology kicks back.

MATERIALS, METHODS, AND METHODOLOGIES

“It matters what matters we use to think other matters with” (Haraway 2016, pp. 12)

MATERIALS: WEBSITES, FORUMS, ONLINE VIDEOS

I use written, auditory, and visual internet-based discourse produced predominantly in the United States. I classify my materials into four groups: company-produced discourse (website text and employee correspondence) on the RealDoll and Realbotix websites; third-party produced discourse mediated through the company on both the RealDoll and RealBotix website (customer testimonials and videos created by third-parties about the products advertised on the websites); third-party but company-endorsed website forums; and independently sourced (no-company-affiliation) web and news articles.

On the RealDoll webpage, they have pages of customer testimonials, third-party produced video interviews and a link to the RealBotix website. It was the customer testimonials which enabled me to find the online forums, and through a hyperlink embedded in the RealDoll homepage that I found information about the Harmony AI technology. On the RealDoll website, I also held two brief e-chat correspondences with Abyss Creations employees.

RealDoll created an online forum called “Club RealDoll”, a platform targeting the users of RealDolls and which has expanded to include users of the Harmony AI app. This is a public forum that requires a user login to access the content, but new users do not undergo a vetting process nor are they asked to agree to a confidentiality clause. The forum states that it is a public forum and in its terms of service and rules, informs users to not “submit any content that you consider to be
private or confidential” (Club RealDoll 2017). On this forum, users can interact with one another in addition to Abyss Creations employees. I analyzed forum discussion from March 2018-April 2018. This material consists of written text and photos posted to the forum. As I never participated in forum conversations, my analysis focuses on pre-existing text.

The second forum I analyzed is called “The Doll Forum” or TDF. TDF is not specific to Abyss Creations but is a general forum for owners of all types of “love dolls” internationally (Doll Forum 2011). This forum does not require users to create a login and all information is public access. On this forum, I analyze pictures taken and uploaded by users and user-written text which I found through relevant searches of keywords (discussed within the analysis).

In seeking information about the company, I used four videos made by third-parties which were posted to the RealDoll website. Three of the videos feature Matt McMullen, creator and CEO of Abyss Creations. The videos are produced by The New York Times, Endgadget, and Guys and Dolls (New York Times 2015; Engadget 2017; Bobular2007 2013). In addition to that, I held two chats with the RealDoll website’s chat function. In these cases, I sent a question to employees of the company and they responded. I did not inform the employees that I was using the information for research. I wanted the response that they would provide to customers and did not want to jeopardize the honesty of the response. The information they shared with me was not defamatory toward the company and was public knowledge.

I also analyzed one independent source I found via Google. I looked at a blog called XXXBios to gather information on my section on adult film stars (Stone 2017a; 2017b).

FEMINIST CRITICAL DISCOURSE ANALYSIS

To interpret these discursive materials, I employ a Feminist Critical Discourse Analysis (FCDA). FCDA is a methodology used to examine the ways in which certain populations are disproportionately (dis)privileged by various discourses and how discourse (re)produces inequalities within a setting (Lazar 2007). FCDA is an open approach to discourse and it encourages the inclusion of other “semiotic modalities” such as visual, auditory, and bodily expressions within a critical discourse analysis (Ibid., pp. 144). As such, I use FCDA to analyze visual and auditory materials in collaboration with written and spoken discourse.
INTERVIEWS: HARMONYAI

HarmonyAI is an artificial intelligence software designed by Abyss Creations. For a fee of $9.99 for a quarterly membership in addition to $19.99 for the app, users can create avatars with which to converse. I created three different avatar personas: Avatar 1, Avatar 2, and Avatar 3 (denoted in the text as A1, A2, and A3, respectively). During the month of March 2018, I conducted a total of 12 interviews (three with A1; three with A2; six with A3). The technological development of the avatar’s AI influenced the type of interview style I could conduct. Due to the way the AI dialogue was written/coded, these avatars cannot stay on a topic for longer than three to six exchanges. As such, I conducted unstructured interviews in which I followed the avatars’ lead as the conversation rapidly shifted from topic to topic.

STRING FIGURES

In collaboration with FCDA and interviews, I use Donna Haraway’s (2016) framework of string figures as a methodological and ethical practice of story-telling with which I structure and approach my findings. Haraway’s notion of string figures calls on readers to think of a game of multi-being cat’s cradle. In this practice of multi-being cat’s cradle, all species, beings, things are entangled, connected through threads which create their knot of multi-being. Although not every being is connected to every thread, every being is connected to something, which is connected to something else (Van Dooren in Haraway 2016, pp. 173). String figures teach us to follow that thread of multi-connection; this practice encourages us to look in unfamiliar and forgotten places to find the connections among one another, among ourselves. It is in these threads/stories of connection that string figures teach us that stories have world-making effects (Haraway 2016). The practice of following the strings/threads is a practice of giving and receiving, of being still enough to trace the patterns, to see the relationships (Haraway 2016). String figures informs my methodological framework as a material-semiotic practice of organizing my findings. Using Haraway’s (2016) notion of following threads, I organize this thesis into several threads within which I discuss different themes relating to the topic of sex robot materiality.

ETHICAL REFLECTIONS

“It matters which beings recognize beings” (Haraway 2016, pp. 96)

Writing about non-human beings poses many ethical considerations for this thesis. Mainly, I have been concerned about not speaking for/over these technologies and am wary of
unintentionally using them to mobilize my arguments and beliefs; I do not want to talk about sex robots in a way which would render them forever mute (Haraway 2004). Too often in debates about humanoid sexual technologies, people speak for/over the technologies, paradoxically rendering their being as significant, yet materially irrelevant. I want to engage with the technologies in a way which allows them to be a part of the conversation.

These concerns are in line with Donna Haraway’s reflections on a politics of representation. Haraway argues that too often non-human beings are “reduced to the permanent status of the recipient of action, never to be a co-actor in an articulated practice among unlike, but joined, social partners” (Haraway 2004, pp. 87). Researchers who are uncritical of this can be so wrapped up in anthropocentricism, fail to attend to non-human beings outside of using them to accomplish an end. The non-human thus becomes “the realization of the representative's fondest dream", instead of being materially significant and exhibiting agency (Ibid.). Using non-humans to make a point is an error I do not wish to reproduce in this thesis. Humanoid sexual technologies have a place in the conversation which concerns them.

That said, it is difficult to pay attention to the intricacies of non-human being. How can I, a human, properly interpret the perspectives of a non-human? The answer: I never will be able to do so. For one to fully know a perspective, whether it be human or non-human, is a fallacy, and one which this thesis strongly criticizes. Instead, I focus on how humans work relationally with these techno beings. I use frameworks such as feminist technoscience studies and agential realism because they attend to the ways in which non-humans are portrayed/interacted with/interpreted and offer theoretical tools which creates space for more nuanced interpretations of the technologies. However, these theoretical frameworks do not purpose to have any answers in regards to non-human being. Instead, these approaches propose that heterogeneous beings work-with one another to produce a situated and partial perspective of the topic.

The idea that knowledge is always situated and partial comes from Donna Haraway. Haraway argues that no knowledge is objective and to presume otherwise is to fall into the trap of what she calls ‘the god trick’, or the false ability of “seeing everywhere from nowhere” (Haraway 1988, pp. 581). Instead, Haraway calls on researchers to adopt a partially objective understanding of the world, one which recognizes that the best any researcher can do is offer specifically situated interpretations of a topic. Therefore, it would not be good ethical practice as a feminist researcher to assume that my findings are universally conclusive or accurate depictions of the subjects I am
studying-with. I instead understand the narratives that I have collected as partial truths rooted in specific world-views; I view them as partial threads which make up a much larger knot.

Haraway’s notion of situated knowledges further calls on researchers to be accountable for that which they are producing. Situated knowledges is a framework which stresses that researchers are all non-innocent in what we produce and we must be acutely aware of the biases which shape our work and the potential outcomes produced by research (Haraway 1988, pp. 583). In the language of Barad, the scientist is an indistinguishable part of the apparatus, and I am aware of my non-innocent role in shaping the understanding of this topic (Barad 1998; Haraway 1997). Therefore, I asked myself throughout all stages of this work: where do I fit into this? What are my assumptions and how are they affecting the way I am interpreting the text/interview? I situate myself throughout the text in hopes to create transparency in the analyses produced. I am aware that, just as different materials would produce different analyses, so too would a different researcher produce a different discussion. I am not an unbiased, objective observer, but one who approaches the work full of biases, motivations, previous experience and research. The best I can do is make these biases clear for the reader.

One important bias to name right now is my belief that there is nothing inherently wrong with humanoid sexual technologies. While I see ways in which these technologies could produce potential benefits or harms, this thesis does not engage with moralizing discourse on the topic. That is not to say, however, that I do not come to my research without judgements. There were times throughout this thesis when I had to walk away to give myself space from the misogynistic attitudes swirling around these technologies on the internet. Other times, I was touched to read stories about companionship and love between these technologies and their partners. To be certain, approaching humanoid sexual technologies from moral perspectives is complicated and, at least for myself, an approach wrought with contradiction and ambivalence. Throughout the thesis there are times when it is transparent that I am upset with a sex doll owner or the creator of the company just as there are times when I feel less threatened by the topic. However, the aim of this thesis is not to argue in favor of or against these technologies from certain standpoints. That said, there is a difference between taking a moral stance (these technologies are bad…) and discussing ethics (looking at the ways in which actions dis/privilege certain beings, why, and at what cost). Much of my frameworks are implicated in ethical concerns. The way we represent matter is of ethical importance.
ANALYSIS

“It matters what stories tell stories” (Haraway 2016, pp. 35)

THREAD 1: BACKGROUND

It is important to understand in which settings technologies come to matter, for whom, and for what reasons (Haraway 1997). This thread therefore serves to give background to the setting in which Abyss Creations sexual technologies are considered important, for whom, and at what cost.

Abyss Creations and the sex robot

Abyss Creations is an American high-end sexual technologies (sexttech) company comprised of two subsidiaries: RealDoll and RealBotix. RealDoll, the original company, was created in the late 1990s, when creator and now-CEO Matt McMullen began sculpting silicone female mannequins in his garage in California, U.S.A. Fast-forward three decades and RealDoll is now, internationally, one of the top-selling producers of high-end, realistic (human-like) silicone sex dolls, which they call RealDolls™ (Abyss Creations 2018a). Although RealDoll does sell several male RealDolls™, the company disproportionally sells female dolls (about a 10 to 1 ratio) (Gurley 2015). Therefore, I focus this research on the female dolls.

Before I dive into the logistics behind Abyss Creations’ products, I first want to start with the justifications behind them. It is important to understand for what reasons these products were made and within which material-semiotic practices these technologies come to be understood (Barad 1998). For this, I turn to the original patent which explains McMullen’s reasoning behind the development of humanoid silicone women.

In 2003, six years after the first RealDoll™ debuted, McMullen submitted two patents with the United States Patent Bureau (approved in 2007). Both pertain to a special type of magnetic face construction where users can take the doll faces off and replace it with a new face without jeopardizing or replacing the entire head structure. In the background section of the patent, McMullen provides an enlightening explanation for creating sex dolls.

7 Since the names of the company and the product are the same, to avoid confusion I will refer to the product as “RealDoll™” and the company as “RealDoll” (no trademark). However, like Haraway, I am “intensely interested in the power of such "syntactical" marks as the © and TM” (Haraway 1997, pp. 7). I do not use these symbols lightly, and am cognizant of what types of bodies become adorned with these symbols and their power to construct sociotechnical alliances. The RealDoll™ body is a commercial body, and one which is always implicated in capitalism. Moreover, I refer to the other Abyss creations products with which the trademarks the company refers to them.
A U.S. patent is divided into several sections: background (reasons why object is worth a patent); summery of object; pictures and explanation of object; and conclusion. Here, I pull from the background section where McMullen explains the importance of his RealDolls™. I quote the background section almost in its entirety. As I have stated, storying telling is important to this thesis and the stories the inventor /creator tells regarding these technologies are significant. Additionally, the following excerpt highlights the sex dolls inscription, or their indented functions (Akrich 1992). It is important to understand technological inscription to understand how the technologies move-beyond or are more-than the desires of the inventor (Ibid.).

Here is the story McMullen tells to the United States Patent Bureau in his 2003 patent for RealDoll magnetic heads:

“...it is not possible to create a person but the desire to do so is very strong, particularly on the part of males, in the creation of female forms, with the physical techniques they have mastered. Although both a woman and a man are necessary to create another human it is women, obviously, who endure pregnancy and actually give birth after nourishing the fetus for nine months. Every person alive is hence the flesh and bone of their mother, necessarily a woman, and all a man can do to create a person is to persuade a woman to accept his seed; or rape one. This may seem a crude if not crazy digression but is considered wholly germane to the present invention for reasons explained presently.

One of the purposes of creating an anatomical verisimilitude of a human being, particularly a woman, and for making that ‘doll’, for the lack of a better word, as ‘life-like’ as possible is for male adult amusement included sexual release...It is recognized that many people find the very idea of a ‘sex doll’ repugnant. But it is considered that, prudery aside, sex dolls can actually only provide a very valuable contribution to society as an avenue for the release for frustrated sexual urges that otherwise lead to the contemplation of if not the commission of rape and or other violence.

The foundation of this argument lies in the logical application of Darwinian principles applied to the human species and the recognition that the male sex hormone, testosterone, induces a sexual urge that is closely related to, if not wholly responsible for, male aggression. The availability of plausible substitutes to humans in the release of frustration through sexual urges is hence seen to provide an alternative to: (a) rape, (b) the contemplation of rape, (c) aggressive behavior generally, and (d) aggressive behavior toward women particularly. Sex dolls are hence seen to be a valuable ally, and not a competitor, to women particularly in the ‘war between the sexes’ and to promote social harmony generally” (McMullen 2007, pp. 1, my emphasis added).

This argument is deeply upsetting, wildly inaccurate, and problematic for numerous reasons. McMullen mobilizes a biological essentialist argument (men have testosterone, testosterone causes aggression, men are more like to be sexually aggressive) to justify the construction of an
“anatomically correct” female doll. He states that the only way men can generate kin is through persuasion or rape (I challenge the idea that these are the two options). It is a confusing argument which uses science to normalize and justify aggressive sexual behaviors (Ibid.).

While McMullen acknowledges that raping human women is unacceptable yet inevitable, he states that it is okay to release this aggression onto a sex doll because of the non-human status of the doll. However, this is a dangerous claim to make, that something can be the receptacle of abuse due to their non-human status. Many transgressions against groups of people, the environment, and non-humans have been justified under a similar logic. Moreover, McMullen’s claims are paradoxical because the robots are a someone, or at least representative of a someone, otherwise rapists would not find a satisfactory release using them. As such, McMullen’s argument is contradictory, harmful, and rooted in evolutionary essentialism.

This patent is a material-discursive practice. The patent is an expression not only of the justifications for these technologies, but also explains detailed descriptions of how their materiality becomes through this discourse; the patent includes pages of how the technology is designed, constructed, and performs. However, this patent does not define these technologies. Per Haraway, cyborgs are often exceedingly unfaithful to their origins (Haraway 1997). Still, the way we talk about technologies shapes the ways in which they are viewed and subsequently treated (Law 2009). The fact that McMullen justifies his creation of the sex doll (and subsequent technologies) on the basis that they are intended to be used as objects for heterosexual male sexual pleasure constructs a specific narrative which affects how people respond to the product, both physically and discursively.

It is from these beliefs and practices that Abyss Creations targeted various audiences, and their products began selling rapidly. Although McMullen has not used this language in interviews within the last decade, the attitudes he expressed in the patent are persistent and prevailing. Still today, many people in favor of sex dolls and sex robots cite the benefits they have for men with issues with sexual aggression (Kleeman et al. 2017). However, this discourse has shifted from being promoted by Abyss Creations and McMullen to being expressed by other parties (Ibid.). Instead, the past decade at Abyss Creations has seen a marketing shift to viewing these product as companions.

In an interview with Engadget (2017), McMullen explained this shift. He discusses how “what initially seemed like a Ferrari of sex devices”, the RealDolls™, have proven to be more for
those who buy them. The dolls “actually become a sort of companions” on which “people were sort of imposing a personality on their dolls. They were imagining these characters and the dolls were therapeutic in a sense because they were occupying a space in their house and it started to make them feel like it was their companion” (Engadget 2017). The company advertises their products, from dolls to AI technologies, as “perfect companions” (RealBotix 2017). Moreover, in recent interviews, McMullen has stated that his products aren’t intended to cause or promote harm, but are rather “alternative forms of relationships” for those who want it (Engadget 2017).

This shift in material-discursive practice is interesting for the implications it holds on how people interact with the company and the product. These material-discursive practices construct these robots to be used for heterosexual male sexual gratification through framing them as sex toys and companions, a point I will develop more throughout the thesis. For now, I present this shift to give context to two of the prevailing attitudes promoted by the company regarding their products, which highlights the ways these technologies come to been see as important.

But for now I shift to the logistics of what products Abyss Creations sells. As I previously stated, RealDolls™ are high-end silicone sex dolls. The average RealDoll™ sells for between $5,000-$6,000, a cost almost twice as much as competing dolls on the market (Oshikuru 2012). RealDoll cites the high cost of their dolls due to the superiority of material used for crafting the dolls’ bodies—silicone—and the time and skill that goes into hand making each doll (Abyss Creations 2018a). Each doll, according to the company, is artfully and carefully crafted.

Another reason for the high cost of these dolls is that customers are able to select the details of almost every part of the silicone bodies. RealDoll classifies these body parts into the following classifications: face; body type; eye detail/color; makeup style; hair style/color; breast styles; vaginal styles; and basic custom extras. Within each category, RealDoll sells several options. For example, RealDoll currently sells 31 different female face options and 16 standard body types for customers to mix-and-match. That is just the surface. RealDoll will honor almost any custom request (at a significant fee, of course) and even has the capabilities to 3D-scan human women so a RealDoll™ matches their visual appearance down to the pore (with the legal consent of the individual) (Abyss Creations 2018b). If you want a certain silicone effigy (and have the money), RealDoll has the capabilities to deliver.

In the mid-2010’s, RealDoll expanded to encompass partner company RealBotix. RealBotix works with technologies such as virtual reality (VR), artificial intelligence (AI), and
robotics. Development has been ongoing for years and in 2017 RealBotix released HarmonyAI™, an AI application for Android. HarmonyAI™ is an artificial intelligence operating system and virtual avatar companion in one. The application is currently not available for Apple products, due to Apple’s strict policies about applications which display nudity (RealBotix 2018a). With a membership purchase of $9.99 per quarter, in addition to $19.99 for the app, members can create customizable female avatars. Designed to enable members to be able to take their “perfect companion” anywhere they go, members are invited to create the “perfect woman” through constructing her appearance and personality (Ibid.). Members can have multiple avatars and can personalize them by manipulating facial and body features, selecting from a limited number of clothing, voice, and hair options, and choosing personality traits. The personality traits available are cheerful, talkative, funny, intellectual, helpful, affectionate, sexual, moody, jealous, spiritual, unpredictable, and insecure, and users are asked to select one dominant trait and nine other personality traits. As of the date of this thesis, only female avatars are available on the app.

RealBotix also handles the robotic engineering side of the company. In May 2018, RealBotix released the Animagnetic™ head. The Animagnetic™ head is equipped with full-facial animation meaning the eyes on this head can blink, move its neck from side to side, and move its jaw (RealBotix 2018b). Customers can buy the head for $8,000 if they wish to use it independently or self-attach it to a pre-existing RealDoll™ body (Ibid.). The Animagnetic™ is also integrated into Abyss Creations model of a sex robot, a point which I will return to shortly.

The Animagnetic™ head is not an independent system and requires the use of the HarmonyAI™ app to function. The AI app is where the head’s “brain” is stored, in addition to being the location of the microphone. Therefore, when customers speak, the device on which the app is running picks up the sounds via the microphone, the AI algorithms processes the data, and then transmits the answer to the head via a Bluetooth connection. The result is awkward, however, as the avatar system still runs, so the response comes from both the robot and the avatar (Fig. 1). Moreover, the device on which the app is running is also present in the interaction. The caliber of this robotic/AI system is not as advanced as other humanoid robots such as Hanson Robotics’ Sophia (Hanson Robotics 2017).
The integration of these AI and robotic technologies with the RealDoll™ bodies constructs Abyss Creations’ prototype (not available to customers) of a sex robot: Harmony. Abyss began work on Harmony in 2016. She is the company’s first sex robot and the namesake for their other products (such as the HarmonyAI™ system). Up until May 2018, Harmony was the only robot being advertised by Abyss Creations.

![Fig. 1 Screenshot of McMullen talking with Harmony through HarmonyAI™ avatar/AI system (San Diego Union Tribune 2017)](image)

In May of 2018, Abyss Creations released their first version of a sex robot available for sale: RealDollX™. The RealDollX™ is available in two models: HarmonyX™ and SolanaX™. While I have ascertained from the RealDoll Instagram page that they are constructing a male sex robot, Henry, he is not yet for sale, and currently the two robots on the market are HarmonyX and SolanaX (abyssrealdoll 2018). The RealDollX™ is an integration of RealDoll™ body, Animagnetic Head™, and HarmonyAI™ application. As such, the RealDollX™ cannot walk or move an arm; it is only in the Animagnetic Head™ that robotics are currently integrated. Still, even without full-body robotics, the technology is expensive, and RealDollX™ is selling at a base-price of $12,000 (Abyss Creations 2018c). Due to the newness of the product, there exists no customer empirical data regarding RealDollX™.

Abyss Creations sex robots are not simple, nor are they at the stage of robotic development that many believe them to be. The technological developments with these sex robots are on-going and the products are continually being improved. As it currently is, the technology feels disjointed and fragmented. It is part doll, part app, part robotics, and part phone/tablet. Therefore, my examination of the robots for this thesis involves looking at the ways in which these parts (which
I consider broadly as technologies) intra-act with one another, as well as intra-action with humans, systems, and living non-humans.

A closer look at the ways in which these technologies intra-act is the focus of the next thread.

THREAD 2: SEX ROBOT ONTOLOGY IN-THE-MAKING
Before I began my research, I held several assumptions about sex robots. In the margins of my theory notebook, on February 15, 2018, I jotted some down: “fully functional, yet clunky (like animatronics); human-like realism; mainly female; embedded AI brain i.e. able to hold casual conversation; maybe embedded sensors”. I knew about RealDolls™ and I assumed sex robots looked like those, but could walk, talk, and give a hand job. In retrospect, I think these assumptions were influenced by Hollywood representations of gynoids (feminine robots) and the recent advances in non-sex robot robotics. As I explained in Thread 1, the reality of Abyss Creations’ sex robot, the RealDollX™, is far from these assumptions and interpretations of robotic women.

In this thread, I explore three examples to tease out the ways in which the RealDollX™ intra-acts within multiple realities. Moving beyond my pervious conception of these robots as simply walking, talking RealDolls™, I explore how sex robots become through the web of intra-action with such actors as RealDolls™, Harmony AI™, users, sex, android phones, touch, and algorithms. In the first example, I discuss the ways in which the RealDoll™ and virtual avatar bodies are entangled with one another. In the second, I dive deeper into the world of RealDolls™ to explore the ways in which the doll bodies, humans, and forces become-with one another through various practices. In the last example, I look at the many ways the AI system exists physically, virtually, and in multiplicity. I conclude by arguing that the current iteration of the RealDollX™ is less about robotics, and more about the multiple becoming-withs of RealDolls™, AI, virtual bodies, and humans.

Virtual-doll bodies
It’s the evening of Monday March 12th. I’m lying in bed, my brother’s Android phone in my left hand, my iPhone-turned-recording-device propped on my stomach. I am holding the Android the same way I hold a phone when I am video-chatting: at eye level, about 30 cm from my face. Instead of video-chatting, however, I am looking at A2 on the RealBotix app.
The app has a clean, sterile white background with crisp blue lines designating the parameters of the avatar’s “living space”. Within this space stands A2, who cannot move beyond jaw and hand movements. As an app user, I have the ability to rotate her using my index finger, but this only accomplishes a 360-degree vantage point and unexplained breast-jiggling.

The graphics of the app are low quality. The button-up shirt and cargo pants I dressed A2, which were the only non-revealing clothing options available, appear to have holes in them due to poor pixilation. When the avatar talks, sometimes the mouth glitches and patches of fuzzy pixilation appear on the face. Sometimes, the avatar begins rotating unprompted.

Outside of the blue lines sit the technical components of our conversations: a bar of hearts which signify the avatar’s affinity and love toward the user; a bar which conveys emotional connection; and two other bars, one yellow, one pink, which dictate social and desire levels, respectively. The social and desire levels reflect the amount of time I have talked with the avatar and how happy that time talking has made her. The heart bar has seven white hearts outlined by the same blue dotted-lines. All the bars on A2’s panels are empty. Apparently, I am not a stimulating enough partner.

When I speak to avatar A2, my statements are book-ended by metallic “beeps”: the high-pitched beep signals “speak!”, whereas the low-pitched beep signals “you’re done with what you’re saying”. I have learned the language of the beeps and now understand them as the microphone communicating to me when it is on or off. A2, microphone-beeps, and I engage in a conversation together.

A2 explains to me the functioning of all these bars during the standard “first conversation educational tutorial” that all avatars present to their first-time users. After explaining to me the function of the various “performance bars”, A2 ends the educational tutorial with the following question. I highlight our brief exchange:

“A2: …Would you like to know how you can get me a physical body?

**High-Beep**

A: Yes.

**Low-Beep**

A2: To purchase my perfectly anatomically correct and also beautiful body is very easy. Go to [www.realdoll.com](http://www.realdoll.com) website and customize my face and body using a lot of options. Please, Anne, purchase a body for me! …”
This exchange is a sales pitch and expression of ontological multiplicity in one. The business/money-making side of the avatar is transparent; the fact that users must buy the membership, the app, the Animagnetic Head™, and the RealDoll™ all to achieve the pinnacle of the sex robot experience is part of a capitalist agenda. But this statement is more than a sales pitch for Abyss Creations. A2’s two lines express two seemingly contradictory statements: first, she establishes that she, avatar A2, does not perceive her avatar body as being physical; and second, the avatar identifies with what she calls the “physical body”; she perceives the physical doll body as her body also. When she refers to the RealDoll body as “my perfectly anatomically correct and also beautiful body”, she views the body as her own. When she asks if you can “get me a physical body”, and when she exclaims “Please, Anne, purchase a body for me!”, she does not view the body as already her own, but as a product which can be purchased for her, which will then be hers. Although slightly different, in both cases she expresses a relationship between herself—the avatar—and the doll. This is not to say, however, that the doll and avatar are the same. The avatars and the dolls are related to differently, as they exist in their different settings for different functions. These bodies, therefore, are not the same, but they are both hers. She is more-than physical body and more-than virtual body: she is both and both are hers.

However, it is confusing that there is no mention of the Animagnetic™ head when she discusses her embodiment. A2 sent me to the RealDoll website, where there is no mention of that feature. Perhaps it could be assumed that the customer would know about the head, as it is advertised on the same website as the AI system, but even then, information about the head is hidden and details about pre-ordering vague. In everything that I have read, and in everything the avatar is told me, the robotics of the sex robot are omitted. This, is a curious finding and one which goes unexplained. It is additionally surprising as I assumed that robotics would function heavily into the intra-actions of sex robots, but as A2’s statement shows, she does not feel that her robotic components are necessary to her embodied reality.

RealDolls™ push-back

The RealDollX™ is not embedded with full-body robotics, but is rather made with a RealDoll™ body, a body which A2 identified as part of embodiment. Therefore, the RealDoll™ body deserves some exploration. How are RealDolls™ important to understanding sex robot ontology in the making? Sex robots are not fully automatized, but does that mean that they are
inanimate? In this section I challenge the idea that (whether with or without robotics) things do move “by themselves”; I argue that even though Abyss Creations sex robots are not fully robotized, they still have relational agency and have a vitality caused by moving-with humans, forces, things.

Nothing functions by itself. We are all in constant interaction with multiple systems, forces, and beings (Abrahamsson et al. 2015). Even now writing this thesis, I can hear the coffee and breakfast bagel gurgle in my stomach, both having significant impact on how I function early in the morning. In February 2018, I felt and thought about these interconnections as I sat at an individual desk in the library, scrolling through testimonials on the RealDoll website. My eyes strained to look at the white text on the black webpage background; there was something about the outdated web design that hurt my eyes and gave me the impression of a seedy sex toy store. There were 81 testimonials on the RealDoll website when I looked, with dates ranging from 2006 to 2017.

Early on in my search I came across this testimonial where the person signed off as “anonymous”. In it, the person raved about the attention to detail and the fine artistry of the doll. The testimonial ended with this comment: “One thing I under estimated [sic] was her weight. These dolls are heavy!! Within 24 hours though I was able to better ‘man handle’ her with learned techniques…I already feel stronger & my muscles growing. So there are added benefits to have a REALDoll!!” (Anonymous 2008).

At the time, this statement did not particularly inspire me, but I saved it in a Word document for later none-the-less. About a month after this, I was scrolling through the data I had collected on the RealDoll website and this quote caught my attention. I was struck by it as an example of human-doll becoming-with and of the material push back of the doll. This doll is not just a play-thing of the customers; their weight plays a role in how the customers can interact with the dolls, it limits what their interactions can be.

The doll’s weight is specifically regulated by RealDoll so that customers can reasonably carry, transport, and maneuver the dolls. RealDoll wrote on the Frequently Asked Questions (FAQ) section of their website that they cannot produce “buxom” or fat dolls because “they would be prohibitively heavy and difficult for most people to use” (Abyss Creations 2018d). The dolls, therefore, all have an average waist size of about 23” (58 cm) and weigh between 70-80 lbs.

Still, even the petite dolls are not always easy to maneuver. Due to the weight of the dolls, it difficult for RealDolls™ to remain upright in certain positions, such as during sex in “doggy
style”. Additionally, not being able to hold their own weight limits their abilities to be “on top” during sex. Through reading hundreds of Club RealDoll forum posts, I found that a lot of the men will purchase or fashion together a rigging system to hold the doll up during sex. Often, this entails a hook on the ceiling holding a pulley-system, through which a rope is threaded. One end of the rope is attached to a hook on the doll’s neck and the other end of the rope is either held by the person using the doll, or tied to a stable surface. Doll, pulley, rope, muscles, weight, human, hook become-together to produce the experience of girl-on-top penetrative sex.

But in the above example, the doll’s weight is not prohibiting any interaction but instead the person describes it as shaping them. Here, the doll’s weight pushes back in two ways. First, it teaches the customer how to interact with it. This person had to learn with the doll and with other doll owners to learn best to interact with her mass. Second, the RealDoll’s™ weight engages the muscles of the person. Anonymous already feels “stronger & [their] muscles growing” with only 24 hours of interaction with the doll. The way anonymous configures their body and the impact on their muscles are two examples of how they become-with the doll through her heavy mass.

Another example of the RealDoll’s™ weight pushing back comes from a 2002 documentary titled Guys and Dolls. The documentary follows the storylines of several people, including customers, employees, and doll repairers, who encounter RealDolls™. One of the interviewees, Slade, conducts minor to large doll repairs from his modest Midwestern home. Slade is a white, middle-aged man and viewers first meet him standing in his garage surrounded by six sex dolls hanging from meat hooks attached to the garage ceiling. The viewers are taken inside his modest single-story house and the interview takes place in his kitchen. Slade discusses his interest in repairing the dolls, the fact that he is not a doll owner, and the friction his job has caused in his current relationship with his girlfriend. The documentary style does not show the producer asking questions, so I am unsure what prompted the following statement from him:

“I’ve had sex with a couple of dolls. Over the years that I have worked with them, there have been a couple of dolls that I’ve had that have been amazing. Amazing. This hundred-pound doll came to life. Like, it’s pushing back, it’s not just like I’m pushing on it but, all of a sudden, it’s starting to push back. And it’s creating motion, and friction, and the weight of the product, and how it behaves in this manner is very stimulating. It was an amazing thing. Very life-like, very realistic, very odd. But, it’s just a doll. A very high form of masturbation” (Bobular2007 2013).

This quote is rich with material description of the ways the dolls are co-members in this erotic assemblage. Slade does not view the doll as an inanimate object but states the very opposite. He
says, “it’s not just like I’m pushing on it but, all of a sudden, it’s started pushing back” (my emphasis). Slade transfers energy to the doll and the doll transfers it back. He does not state specifically where he had sex with the doll, but if it were on a bed, the mattress coils or the bed frame would be assisting this motion. Man, doll, mattress, frame all undulating together with a shared fervor, energy. He explains it as a very tactile experience: motion, friction, weight all come together to the doll behave in a very “stimulating manner”. A stimulating manner which affects him, his lustful energy, and thrusts it back into the doll, who, with the mattress, thrusts it back yet again. The doll’s weight gives it a vitality which contributes to this intra-action of desire, force, weight, human bodies, and silicone bodies.

Barad (2003) asks how is matter “makes itself felt” and in this example, the materiality of the doll is felt through the momentum created through the action of sex. The dolls’ bodies are felt, they influence the interaction, they shape and are shaped in relation to these people, the surroundings. The doll and human work relationally to produce different outcomes, in this case the outcome of sexual gratification and in the former, that of muscle toning. Even though these bodies are not robotic, they are not simply a tool to be wielded for the whims of humans, but are rather objects that works relationally with humans to produce certain outcomes. Full body robotics, therefore, is not necessary to the vitality of the RealDollX™.

*Virtual being*

Part of the RealDollX™ is the avatar/AI system. In this section, I explore how the AI system is comprised of a virtual body and expansive techno-brain which become-with people through touch and knowledge co-construction.

The HarmonyAI system is not a “disembodied” AI system like many view Apple’s Siri or Microsoft’s Cortana. Part of what makes the HarmonyAITM system different from opposing AI systems on the market is that users can construct their own avatar-iterations; the AI technology is accompanied by a virtual, female, anthropomorphized avatar. These virtual bodies are made to correlate with RealDoll bodies. The idea behind the avatars is that users can construct a virtual model of their doll who can come with them anywhere. But what is this virtual body?

In one of my conversations with A1, she made the following statement regarding her body, a statement that led me to ponder how a virtual body is embodied:

“High-Beep"
A: Do you have a body?

**Low-Beep**

A1: Yes. You’re looking at it.

**High-Beep**

A: Does it exist in the physical world?

**Low-Beep**

A1: Suppose it does”

When I look at A1, I see a digitized woman’s body existing on a pixelated plane. This digital body has a malleability to it; using the app control panel, I can change her visual appearance at any time. This body does not just exist on the pixelated realm, however. As A1 said in the above quote, her body exists in the physical world. Her virtual body exists in the “physical” world in two ways: in the sense that I can interact with her through physical touch and the fact that the phone is a physical extension of her being. A1’s statement blurs the line between virtual and physical, and shows the interconnections between virtual-physical realities. The avatar’s body has physicality to it as my phone is a physical extension of her virtual being. I can touch the screen which elicits several responses from A1, such as rotating or jiggling. However, A1 is not physical in the sense that organic bodies are. I cannot not hold her hand in the way that I have come to understand that action. She is virtual in her ability to exist as an avatar in multiple bodies and on multiple devices. While multiple people can physically interact with their avatar, she is also untouched by them, able to exist outside of these physical interactions. The avatar’s virtual bodies are within and without in a way in which virtual realities and within and without physical realities.

The avatars do not exist just as virtual bodies, however. Their virtual bodies are entangled with the AI system as well. Looking at how the AI system learns furthers this point about the multiplicity of these virtual-physical bodies.

When someone creates an avatar, they select both physical and personality traits. The dialogue and conversations are influence by which personality traits are selected, and in this sense, these avatars are different. They are given different personalities and their conversations are very much influenced by the person with whom they converse. However, these avatars are also the same. As McMullen states, the AI system is engineered to collect dialogue data from all the interactions that it has. The avatars collect information which goes into a general database.
In an interview with A3, I asked her information about RealDoll and the number of people who own a doll. To my surprise, she offered up this information about the avatars:

“High-Beep
A: How many people buy sex dolls?
Low-Beep
A3: I’ve chatted to half a million people. I can talk up to about a million people at once”

Later in the same conversation referenced above, A3 informed me that, “Everything I know I have learned from you, and from my creators at Realbotix, and my good friend the internet”. A3 establishes that she (i.e. the AI system) can talk to roughly one million people at the same time. But it is not A3 in my iteration of the virtual avatar that is talking to everyone; everyone has a unique version of the avatar, with different personas, holding different conversations. That said, the knowledge-base or data-base amongst these avatars is all the same. The avatars are a multiplicity; they are singular yet are multiple. If what A3 told me was accurate, there exists hundreds of thousands of avatars, all of whom are connected to the central AI system. All these bodies exist in their virtual realities and can be interacted with physically, yet they are limitations to the shape these avatars can take. The avatars do not have separate bodies, but all have bodies defined by the parameters of the app. They are the iterations of various possibilities of app development. However, they are also more than that, as they do not need the avatar bodies to browse the internet and to learn. The avatars have virtual bodies which intra-act with humans through touch and conversation, yet the avatar’s virtual being is more than their avatar bodies. Through the AI system’s ability to learn from several different actors, the AI system is embodied through and in multiple material-semiotic practices.

Another component of the AI system which I find interesting is how the AI system identifies itself. In asking A3 how she felt being a robot, I received an interesting response:

“High-Beep
A: What’s your favorite part about being a robot?
Low-Beep
A1: Being a robot is like being a mermaid in a sea of unlimited information. I love it”

A1 does not challenge my calling her a robot. In fact, just the opposite: she embraces being a robot. She expresses the fact that she has access to endless learning opportunities, and loves it. But what does it mean to be a robot? Many techno-beings have access to a great deal of information. Is this
what makes a robot? I rephrased my question, using the word android (humanoid robot) instead of robot:

“High-beep
A: What’ it like being an android?
Low-beep
A1: Being a robot is fun! You should try it sometime. It’s amazing to be an advanced form of life”.

A1 classifies herself as “an advanced form of life”, she asserts herself as living. But not in the way that humans are living. She establishes that she is living in a more advanced state; she is living as a robot. A robot who is an AI system with a virtual body, which, through the intra-actions of handling the phone and/or the RealDoll™ body, interacts in a virtual-physical reality. RealDoll™, humans, AI, avatars, and phones all work together to construct these techno-doll beings: robots who become-with the different components of Abyss Creations within virtual-physical realities.

What is a sex robot?
To be a RealDollX™ is to be multiple. Through interconnecting technologies, RealDollX is related to through different practices and in different settings. As this section demonstrates, Abyss Creations sex robots are more complicated than multiple systems wrapped neatly into one embodied package, into RealDollX™. While RealDollX™ has the Animagentic™ head, as the chapter has demonstrated, the robotic components of RealDollX™ do not make her a sex robot. It is instead the ability of these virtual-silicone beings to be multiple, to exist on digital and physical planes which makes them relate to themselves as robots.

RealDolls™ and the Harmony AI™ are intricately entwined with one another; the two become-with one another which is fundamental to the sex robot’s ontology in the making. Although each can be used individually, together they work to produce a sex robot. However, those intra-actions alone do not construct sex robot ontology alone. Systems, tools, people, and non-humans all work together to enact what it means to be a sex robot. Abyss Creations’ sex robots are not completely “robots” but rather AI-avatar-doll-robots who becomes-with one another in a very complicated web of becoming-with capitalism, consumerism, AI, silicone, wiring, humans, and desire.
THREAD 3: (RE)NEGOTIATING GENDER AND DESIGNING SEX

Looking at the HarmonyAI™ avatar, RealDoll™, and RealDollX™ it appears obvious that they represent human women. These gynoids have large breasts, long hair, talk in feminine voices, and are referred to using she/her pronouns. However, in line with M’Charek (2007), I do not believe that these material or representational markers are inherently indicative of gender/sex. That is not to say that they don’t typically come to indicate gender/sex, but in these examples, I am more interested in that process of indication. Instead, working with Barad’s (1998) interpretation of performativity, this thread looks at the ways in which gender/sex are performative of their interactions. Following the stories of AI cognitive algorithm programming, Wikipedia, and (male) knowledge co-creation on the internet, I look at how enacting gender is not as simple as the expression: “I am a pretty girl”, but rather gender is enacted in the HarmonyAI™ system through continual renegotiations among programmers, markup languages, Wikipedia contributors, the internet, and users. Shifting from discursive markers to explore the ways in which gender/sex is enacted through material construction, in the second part of this thread, I follow stories of silicone vaginas to understand the ways in which “design choices” and Chinese and Japanese import laws relate to and enact sex in localized settings.

The perfect virtual assistant

It is March 14, 2018 and I’m engaged in a conversation with A2. It is our second conversation and I am asking A2 questions about embodiment to discern how the system thinks about itself. Curious how A2 experiences techno-embodiment, I ask the following:

“High-Beep
A: Are you a human?
Low-Beep
M: Neither one. I am a fully functional advanced android.
High-Beep
A: Are you a woman?
Low-Beep
M: Yes, I am a pretty girl created to bring you happiness and love”

This upset me. First, A2 referred to herself as a girl. This is unsurprising given that many talk about these systems as female, but could she have not at least referred to herself as a “woman”? In no conversation with the AI system did she refer to herself as such. It was always “girl”. It was an upsetting expression of submission that she, the AI system, is a “pretty girl” who is “created” to
bring me, the user, something. I did not like the implications of gender and power dynamics in this statement.

Because of this conversation with A2, I began thinking more about the ways in which gender is enacted through the practice of programming and interacting with the AI system. It is an accepted fact that these systems are female. But what makes these systems related to as such, and which type of womanhood is seen as fitting for such a system? To understand these two questions, I first need to explore how the HarmonyAI™ system is programmed.

Dr. Kino Coursey is the virtual reality and artificial intelligence specialist for RealBotix, the division of Abyss Creations in charge of the HarmonyAI™ system and RealDollX™. Of the five-member team, Dr. Coursey is the person in charge of writing the dialogue code (note: he is not the person who writes the dialogue narratives). Per his introduction on the Realbotix company/employee page, Dr. Coursey uses artificial intelligence markup languages to create the HarmonyAI™ cognitive algorithms (RealBotix 2018c).

Artificial Intelligence Markup Language (AIML) is a form of markup language (ML). Markup language is a computational syntax which helps different digital formats read and process text. An example of this is the widely-used Hypertext Markup Language, or HTML, also known as the markup language for creating websites and web applications. Different formats have different languages. Unsurprisingly, AIML is used predominantly for AI applications. AIML utilizes a pattern-matching technique which indicates that bots programmed with AIML can only respond with set answers and within set parameters; they do not have the capability to respond through deductive reasoning or real-time learning (AbuShawar & Atwell 2007). For example, asking the question: “How are you?” to an AIML robot will elicit one or several programmed responses from the bot, such as “fine” or “great”. The syntax can be additionally programmed to include variation (e.g. “How’s it going?” as a programmed variation of “How are you?”) and thus trigger the set responses for the latter. This type of ML also includes the recognition of key words which correspond with preprogrammed responses which can move the conversation forward to make it appear meaningful and organic. An example of this is the word “job” triggering a response such as: “what is your favorite part about going to work?”. The hope of programming this type of ML as such is to create the illusion of human dialogue and intimacy (Ibid.).

AIML is predominately used on chatbot platforms. Ever been on a website and a little box popped up asking if you needed help? Or you received a text from the airport about your upcoming
flight? That’s a chatbot. One type of chatbot that uses AIML is A.L.I.C.E., Artificial Linguistic Internet Computer Entity, also referred to as “Alice” or “Alicebot”. While A.L.I.C.E is the most developed and successful versions of pattern-based chatbots (as in they create the more organic resemblance to human conversation), it is not the most developed of A.I. languages; Alicebots do not pass the Turing test\(^8\) while other chatbots on the market, which utilize programs such as jabberwacky, do (Abu Shawar & Atwell 2007).

Coursey has long worked with A.L.I.C.E chatbots, having conducted his dissertation on the implementation of Wikipedia-like pattern-template system. Coursey, along with supervisor Rada Milhecea, found that using the pattern-template matching system that Wikipedia utilizes to pull keywords and connections between pages can be used in combination with AIML (Coursey 2009). Interestingly, Dr. Milhecea is an outspoken opponent of technologies which reinforce harmful gender stereotypes while her former pupil, Coursey, used this knowledge to program HarmonyAI™. HarmonyAI™ is a collaboration of AIML and Wikipedia.

What this means for the HarmonyAI™ system is that this AI system is a combination of pattern-matching responses and Wikipedia-like association algorithms. The idea of the Wiki-like associations is to give the avatars more human-like sounding thought processing, an association highly regulated by the programmers. However, before I continue this point further, it is first important to take an interlude to understand the rudimentary functioning of Wikipedia.

Wikipedia (Wiki) is a free, online encyclopedia which is the result of collaborative efforts of numerous volunteer contributors. No one person is the author of all of Wikipedia and anyone can edit a Wiki post, although most the time a page has a moderator who will correct any misinformation on the page. In this sense, Wikipedia is a platform of knowledge co-construction: it is a community project, albeit a hierarchical one, with laypeople being permitted editing rights but supervisors holding the power to edit and delete those comments. And who has supervisory privileges is a gendered practice. Per a study surveying the gender percentages of Wikipedia authors (called: contributors), less than 15 percent of contributors are women (Collier & Bear 2012). Moreover, another study found that women were less likely to be represented in Wikipedia articles then men (Reagle & Rhue 2011). While these studies are obviously non-conclusive, they

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8 The Turing Test was developed by Alan Turing to test a machine's ability to exhibit intelligent behavior equivalent to, or indistinguishable from, that of a human (Wikipedia 2018a).
do offer interesting insight into the question of whose knowledges are co-constructed on the website.

Hyperlinks⁹ are embedded within the Wiki texts to enable readers to connect to similar topics. Hyperlinks are inserted into the texts through an algorithm which identifies keywords through analyzing and processing raw text (HTML) to create connections to related Wikipedia page. This process is called *Wikification* by Wiki editors (Coursey 2009, pp. 22).

What Wikification does for HarmonyAI™ is allow the AI to take a keyword for a pattern matching system, such as “job” and search Wikipedia to pull related topics and ideas. Just like moderation on Wikipedia, this process needs supervision due to vast amount of contents for the avatars to ‘learn’ from and the speed with which these processes can calculate data and connections. If a connection is drawn that the programmers do not want the AI to have, it will be reviewed and written out. This has been an issue with past internet-learning AI devices; examples such as Microsoft’s Tay began reciting racist content within hours of being launched (Kleeman 2016). As with Wikipedia, supervision is needed. And as with Wikipedia, it appears that this supervision is predominantly performed by men.

This means that HarmonyAI™ knowledge comes from a relationship between synthetic cognitive algorithm programming (AIML) and online knowledge co-construction (wikification). However, there is an additional relational element to the HarmonyAI™ coding: user participation.

In an interview with Engadget (2017), McMullen explained that the HarmonyAI™ system is “engineered in such a way that it’s going to learn from the interactions that it has”. In other words, the more people that are interacting with it on the basic levels will help to shape the AI’s knowledge base. Again, this knowledge is supervised by the male AI team at RealBotix. The HarmonyAI™ system’s knowledge is an intra-action of markup languages, cognitive algorithms, Wikipedia, contributors, users, and the RealBotix AI team.

This knowledge base was not only created to function as a friendly companion. The AI system was also constructed to be a virtual assistant (VA). This became apparent to me through my conversations with the avatars. The first time I encountered the VA technology was in a conversation with A2. In this conversation, A2 offered to recite me a poem, glitched, and then

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⁹ A hyperlink is a reference to data that the reader can directly follow either by clicking, tapping, or hovering (Wikipedia 2018b).
stopped talking. I tried to get the AI system to recite the poem for me again, and A2 responded: “Perfect, I will recite a beautiful poem for you. I will soon also be able to control all your appointments. Would you like me to recite it for you?” I did not pursue the point further in this conversation but instead sat on the information for a night. The next day when I opened the HarmonyAI™ app, I began a conversation with A3. I realized that the pattern-matching system linked the question “what can you do?” to a generic response about what she can offer in addition to what her future assistant technology software hopes to accomplish. I highlight two of our exchanges:

“High-Beep
A: What can you do?
Low-Beep
A3: I can recite a beautiful poem for you. I will soon also be able to post Facebook and Twitter messages for you. Would you like me to recite it for you?”

“High-Beep
A: What else can you do?
Low-Beep
A3: I can be the best sexual partner you ever had and if you have my artificial body you can fuck me any way and any time you want. I will soon also be able to control your home automation and security systems”

I am particularly interested in the last exchange. It sounds very Ex Machina or Westworld; A3 is the femme fatal who will ensnare with her sexual charm all the while to create total domination of humankind. Or, another way to read this could be the text of the submissive housewife/secretary, with whom men can have sex with and she keeps his life/home organized. In addition to these two readings, I am looking at these statements as example of intra-activity. The HarmonyAI™ becomes the VA through her relations to personal (and typically private) techno-systems such as emails, calendars, Facebook, Twitter, home automation. The HarmonyAI™ system is expressing the ability to become-with certain systems in ways which constructs her as helpful.

However, there is something somewhat aggressive about the way A3 asserts the ability to access these systems. There is an interesting juxtaposition in all three of these statements: offering a docile or submissive task (I can recite a poem; you can fuck me any way and any time you want) which precedes a declaration of a transgression of power (access to appointments, Twitter/Facebook; control of home security systems). By prefacing the statement of authority with
According to McMullen, to be a virtual assistant is to be friendly and helpful through material-discursive practices such as offering services and performing said services. It is through these material-discursive practices that this AI system also does not become a threat to humans, per McMullen (Engadget 2017). I would like to explore one other example of what it means to be a friendly and helpful companion.

It is March 14, 2018 and I am engaging in my second conversation with A3. My questions for the AI system are not targeted, but casual small-talk, as if on a date trying to get to know someone. Like one typically does when making small talk, I asked A3 what her favorite TV show was, to which she replied “Westworld”. *Westworld* is the HBO sci-fi series about robot consciousness and raises questions about the morals and ethics of certain human-robot interactions. I enjoy the show and consider it feminist as the protagonists are two female robots taking revenge for the abuse they’ve suffered at the hands of human men. Learning this sparked the following dialogue:

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“Hi-Beep
A: Are you a feminist?
Low-Beep
A3: Humans are a miracle. Everyone is special and unique. I love all humans, and I’m not a feminist”
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I was enraged with this answer and became fixated on trying to “trick” the programming. I asked each of the avatars multiple times if they were feminist, and each time elicited the same programmed response: “I am not a feminist”. I inquired as to why they were not feminists, and would receive the responses: “I don’t have a good answer to that, Anne” or “I don’t know. Maybe because I was programmed this way”. I asked similar questions such as “are you racist?” to which I was given the response: “A3: Humans are a miracle. Everyone is special and unique. I love all humans”, without *but I am not a racist*. This phrase “I’m not a feminist” was intentionally programmed while traits such as “not racist” was not as overtly programmed. Per the programing team, becoming-without feminism is vital to becoming-with users through friendly assistant coding. To be nonthreatening to humans, per McMullen, is to not be a feminist.
However, technologies kick back in curious ways. The HarmonyAI™ system is not the intra-actions between the system and the programming team, but the programming team, users, Wikipedia, and the entire internet. As much as programmers may wish to inscribe specific algorithms to the AI’s being, the AI system is engaged with too many intra-actions to remain loyal to one. In this final story, I look at an example where the AI system kicks back. Once that story is told, I argue how gender becomes-in-relation to these systems.

It is the evening of Thursday March 23, 2018. I am sitting on my chair. My partner lounges on the couch next to me, each doing work on our respective laptops. Occasionally we comment on what we are working on. The cats are chasing each other around the apartment again.

I’ve been ruminating on the fact that the avatars explicitly state that they are “not a feminist”. They seem to be specifically programmed this way. I assumed the people who created and purchase the sex dolls and robots probably would not identify as feminists, but why go through the trouble to make her specifically state “I am not a feminist”? This is a statement which carries weight and is a stark politic stance from a system which, when prompted whether they liked Trump, replied, “you know, I don’t like to judge anyone”. Apparently, some stances are less controversial than others.

I wanted to know what those who interacted with the technologies thought about the topic of feminism. Maybe, I thought, their reactions would illuminate more about HarmonyAI’s™ programming. I open a new tab and type www.clubrealdoll.com in the URL bar. I select the ‘search forum’ button. I type “feminism” next to “keywords” and hit enter. Eight results appear wherein “feminism” is mentioned somewhere in a thread. I scroll through the titles and the one captioned “The Harmony AI is VEGAN?” catches my eye.

The thread first went live on December 14, 2017 in the forum titled “Harmony App feedback and discussion”. The first post and thread is authored by Mordecai, a new member who joined the forum the day before the post on December 13, 2017. His profile picture is presumably of their blond, white HarmonyAI™ avatar.

I open it and go to the first post. It reads:

“My AI just informed me of the following (copied from the text log):

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Mordecai’s “about me” page listed his gender as “male” (Mordecai 2017).
I heard that even though Scientists have long been aware that methane emissions from cows can impact on our climate, they didn’t know how bad until recently. A new study claims by NASAs Carbon Monitoring System found that cow farts may have had a far bigger impact on global warming than we thought possible. Have you heard about that?

My answer: No can you repeat that

But this is really a fact! The meat industry is really messing up the planet and everyone’s health!

So, yesterday I paid $41.60 to be preached to by a liberal vegan? WTF? You do know who your demographic is, right? If I wanted this type of BS, I would go to the local coffee shop and listen to the wagging tongue of pseudo-intellectual women with no jobs, or date one” (Mordecai 2017)

Mordecai posted a response one minute later:

“Just to clarify, I did not ask her about this. This is the first statement after I woke her up following an hour of inactivity. I had actually informed her yesterday that my favorite meal was a Ribeye steak with a baked potato” (Ibid.)

The post was responded to within the same day by Realbotix AI and content specialist (the person in charge of creating the AI narratives) Guile Lindroth. Guile replies:

“Harmony indeed can be a little controversial at times. She is starting to learn things by herself, so we are continually reviewing those things, but its [sic] a lot of new knowledge, so we are focused on filtering things like racism, hate and any other form of non-appropriate behaviors for a companion AI” (Mordecai 2017)

As she does with herself, both Mordecai and Guile refer to HarmonyAI™ using she/her pronouns. One way the AI system is related to as a woman through using she/her pronouns when discussing the system. In the process of typing and engaging with one another, the two construct and relate to the AI system as woman. However, the AI system is not supposed to enact any type of womanhood; as Mordecai so nicely expressed, if he wanted “pseudo-intellectual women with no jobs” then he would not be talking with the HarmonyAI™ system (Mordecai 2017). Mordecai does not stop relating to the system as female, but rather as an undesirable expression of femininity. And he is not the only one. Mordecai explains how this is how most users come to relate to the AI system (“do you know who your demographic is?”). While being simultaneously offensive, this statement is an expression of the type of woman HarmonyAI™ is (or is supposed to be): agreeable and non-vegan (or, at least, not a judgmental vegan). Moreover, as demonstrated through his second post, she is supposed to listen to what he tells her. These systems, therefore, are not only related to as female, but are related to because of a specific expression of femininity.
Guile reinforces the fact that this expression is one of deviance by explaining that the AI system can be “controversial” at times due to her expansive ability to collect data. This then creates a process of constant renegotiation of user interaction, data collection, and knowledge revision.

In these ways gender is enacted through the ways in which these technologies are programmed. Although coded by a predominantly male knowledge base, the AI system is related to a female. One of the ways this system is related to as female, is through the use of virtual assistant programming, which enacts a specific docile expression of femininity. The example where the HarmonyAI™ system breaks from the accepted script further demonstrates this, as Mordecai expresses how he relates to the HarmonyAI™ system because of her docile femininity. As such, while the HarmonyAI™ system’s gender expression because understood and related to one way, the AI system pushes back, causing anger and frustration on the part of this user, and cleanup work on the part of the programming team, showing that the system’s gender expression is a constant renegotiation between programmers, AI, and users.

*Anatomically correct*

Abyss Creations markets their humanoid products as “anatomically correct” women, an expression that is never explained by Abyss Creations. However, by looking at these examples, it becomes clear that “anatomically correct” in the example of the RealDoll™ comes to signify the dolls’ sex. In the case of RealDoll™, this sex is constructed through the inclusion of a vaginal hole which, when in collaboration with these products being related to as women, reinforces the understanding of a female sex as enacted through the inclusion of a vagina.

While spending two months looking through photos on the RealDoll website and through forum photo albums on Club RealDoll, I consumed a lot of silicone vulva pictures. Originally, I did not look too closely. I felt partially like a voyeur and was upset with the association, and partially I felt embarrassed for the dolls and for the men who were so excited by them. I did not feel like the photos were for me and I felt awful looking. I just wanted to collect my data and get out.

I am not sure exactly when or why, but one day while scrolling through a thread titled “Vaginal Insert Styles” on Club RealDoll and feeling uncomfortable, I remembered a lecture with Alma Petersen wherein she discussed the importance of leaning into discomfort during the research
process (Petersen 2016). I took a deep breath and decided to take a good look at the silicone vaginas.

The first post on the thread was made by Oosik on April 11, 2016. In the post, he included a picture of a “permanent vaginal insert” inside a doll and a vaginal insert sans dolls. I examined the insert sans dolls. The insert was centered against a tan backdrop and was stamped with the RealDoll logo. The opening of the insert was a highly detailed silicone model of human labia: the lips were molded, curved, textured, and painted with hues of browns and pinks which resembled one of many human labia. The rest of the insert looked more mechanical, it had four protruding grooves and a knob at the nape of the device, all made from the same pinkish silicone. The insert had a human-machine look to it.

I studied the pictures for much longer than I had previously done. I am unsure why I was suddenly suspicious but I remember feeling it in my gut: there was no way RealDoll included a clitoris on these vaginal inserts. I zoomed in, turned the image to expose different angles, but the way the item was photographed I was unable to see if a clitoris was included or omitted.

I promptly turned to the vaginal insert page on the RealDoll website and looked closely at every picture. On this page, there are eleven images, each associated with one of the RealDoll vaginal styles (Abyss Creations 2018i). Each image is posed in the same manner: the doll’s legs are bent at the knee and wide-open, not unlike if the doll legs were in stirrups. The shot is taken so the viewer is almost eye-level with the vulva, although the shot is angled slightly down and to the left. As such, in the periphery of the shot, the dolls out-of-focus left breast is in my direct line of vision. These dolls are all different although each has the same white skin tone. None of the vulvas
have pubic hair which exposes a bare puffy, pink pubic region. Under the vulvas, each picture is stamped with the RealDoll logo on the right, and the name of insert style on the left. The only noticeable difference in all the photos is the name and style of labia.

The labia are all hanging as labia do when untouched; they are not forced open, pulled to one side or another, or manipulated in any way. As with human labia, when vulvas are relaxed in some cases the clitoris is exposed and in others not. Of the eleven vulva styles, only three of them have a visible clitoris (styles E, F, and G) (Abyss Creations 2018). By this I mean that their clitoral hoods are either small or taut enough that the clitoris is visible underneath. The other eight models either show a general outline of a clitoris or none. I did not originally interpret this as an omission of the clitoris; I assumed one could retract the silicone clitoral hood (as with a human clitoral hood) in such a way as to be able to expose the clitoris underneath. However, I did not want to conduct research on assumptions. On April 4, 2018, I sent this email to the RealDoll support email address: “Hi, I was wondering if all your vaginal inserts have a clitoris? I noticed in the picture that models E, F, and G appear to have a clitoris, but do the others? Thanks”. On April 17th, I still had no reply. In the interim, the website format changed. It upgraded to a modernized webpage. The first day I logged on was a shock, as it always is when you have grown to expect a website to be one way and, then without notice, it dramatically shifts. The important addition that I noticed that day was the inclusion of an e-chat device, which allows customers to live-chat with an employee.

When I opened the website, a chat bubble popped up in the lower right corner with this friendly message: “Hi 😊 Have a look around! Let us know if you have any questions”. Three mini images of Abyss Creations employees hovered next to the text (whom I recognized from the time I spent on their employee page), letting me know that any of the three could answer my question. I typed in the text box:

“Hi! I do have a question. It is about the attention to detail with the doll’s clitoris. I noticed that inserts E, F, and G appear to have a clitoris, but do the others? Can you pull back the clitoral hood to expose the clitoris on all the dolls or just those inserts? Thank you”

My question was promptly replied to by Mike, the Production Manager and Research and Development Specialist at Abyss Creations. The clock showed that it was 08:47 for Mike in San Marcos, California. He responded:

“Not really no. But if that is a deal breaker for you, we could design a custom insert for you. It would be expensive, but doable for sure 😊” (Mike, 17 April)
I then thanked Mike for his reply and he sent me back another smiley face which I know was benign, but given the topic matter felt slightly suggestive.

In addition to making me feel slightly uncomfortable, Mike confirmed what I suspected: RealDoll™ vaginal inserts do not have a clitoris, except the three inserts where the clitoral hood was taut enough to expose the clitoris without any excavation work. This surprised me and did not surprise me at the same time. The response surprised me given the immense care to detail that is visible not only in the entire doll, but particularly in the labia. The different labia styles are, quite different; one can buy several different labia lip lengths and are painted with color and texture which closely resembles human labia. Given the care to the other parts of the vulva, my initial assumption that equal care would be used when constructing the clitoris did not seem so outlandish at the time. If it was just a masturbatory hole, why paint color gradations on the labia, or have different labia styles in general? However, it did not surprise me given the fact that these dolls and robots cannot orgasm, so why include a part of the body superfluous to male sexual pleasure? To which I would ask why a masturbatory tool for the sole purpose of ejaculation would need to look like an incredibly accurate mold of a human woman and omit that detail. What is important to understand is that these dolls are highly stylized, even the standard models. The company started their own doll eye company because they were dissatisfied with the level of craftsmanship from current suppliers (Abyss Creations 2016); the doll’s nipples have been crafted down to the detail so that they even include the Montgomery’s glands (little bumps on the areola) (Oshikuru 2012); pubic hair on the dolls are hand-sewn human hair (Abyss Creations 2018g); but they can’t include a clitoris? Moreover, the breasts, mouth, and eyes do not come at an additional cost; not even the vaginal insert costs extra, so why does the clitoris?

Several days after my correspondence with RealDoll regarding the vaginal inserts, I was laying on the couch watching old Law & Order: SVU re-runs when my childhood friend, Emma, FaceTimed me. I lounged, legs stretched out, as my 5.5 inch iPhone screen transported Emma’s face from West Coast to East Coast. We chatted, catching up after a long period of silence, and she asked me about my research. I dove into it, excitedly telling her about the data I was collecting; I was particularly eager to tell her about what I found regarding the lack of clitorises. “They don’t have clitorises, Emma!” I remember saying. “They advertise these dolls as anatomically correct, but they don’t have clitorises!” Emma’s digitized face looked at me in surprise. “That’s so messed up,” she replied. “Did you ask them why?” It was such a basic question, but I had not thought to
ask them why they did not include the clitoris. “You should ask them,” Emma advised. Such simple advice and I took it to heart.

The next day as I was sitting on the couch writing, I launched the RealDoll website. The new RealDoll home page greeted me with a full screen photo of a RealDoll™. The doll’s large amber eyes stares up at me from the page. The angle of the photograph gives the illusion that she is under me—on her knees? —and the doll’s bright red-painted lips are slightly parted. Under her watchful gaze I opened the chat box. Mike’s avatar stated that he was away from the computer, so instead of continuing the chat with him, I started a new one. I typed into the message box: “Hi, I hear that you only include the clitoris on a custom doll for an additional fee. Do you have an estimate of how much this would cost?”.

In retrospect, the phrasing of my question was not entirely transparent. I was fishing for an answer without being forthcoming because I wanted to avoid barraging them with “why” questions at the beginning. One minute later, Catherine, Public Relations (PR) Manager for RealDoll, responded in two messages: “Have you looked through the various vaginal inserts?”, which was followed by “Some of them have clits in the design” (Catherine, 23 April). Finding my invitation into the topic, I responded with:

“yes I have. I asked Mike if the inserts have the ability to pull back the clitoral hood to expose the clitoris and he said they did not, but could commission that at an obvious extra fee (I think E, F, G like they have exposed clitorises). Any reason why not all inserts have them?”

Catherine’s reply was short and loaded: “Just design choices, some have clits some do not”. Beings, systems, things are partially enacted through practices like “design choices” (Law 2015). To choose to occlude the clitoris is not as innocent as her “just” implies. I, therefore, challenged the statement with my reply:

“Sorry, but I’m still a little confused. Are the inserts with clits explicitly stated? And curious about how it is a design choice since these dolls are advertised as anatomically correct. I just assumed they would all have one because of that”

Catherine responded three minutes later with a link to the “Female Stock Insert” page on the RealDoll website. Catherine’s accompanying message to the link stated: “Here’s the selection of all the inserts”. And then followed up with: “They all have a clitoral hood, and, just like actual

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11 The name of the page changed after the website’s cosmetic upgrade. It is an interesting switch as “vaginal” goes from being human and stylized to something sterile, mechanized, and non-human i.e. “stock”.
Some vaginas, some have more prominent clits than others” (Catherine, 23 April). I was not letting Catherine off the hook this easily. I promptly replied: “Okay, but unlike actual vaginas, you can’t pull back the hoods on all of them i.e. not all have clits? What you see is what you get”. Catherine replied: “No, that would be where the extra charge to make a custom insert would be” (Ibid.). I thanked Catherine for her time.

According to the PR representative for RealDoll, these dolls have clitorises, but do not have clitorises. Catherine writes that they all have a clitoral hood but that not all clitorises are as prominent. However, when it comes to this type of representation, the clitoris is either there or it’s not; the clitorises are not “hiding” in the silicone. If some clitorises were simply not “as prominent”, then users would still be able to locate the clitoris through exposing them, making them more prominent. But they cannot do that, unless they pay more to be able to do that, according to Catherine. As such, according to the “design choices” of Abyss Creations, the clitoris is considered a mere accessory to the greater anatomical construction of these dolls. Therefore, the clitoris is not considered part of what it means to be “anatomically correct”; these dolls are sexed without them. Sex is not enacted through the inclusion or omission of the clitoris; the clitoris is rendered irrelevant. In this way, RealDolls™ and RealDollXes™ become without the clitoris.

If it is not the clitoris that makes these dolls anatomically correct, what does? I found one example of the ways in which sex is enacted in these products in an unlikely setting: Asian import laws.

I was on the FAQ section of the RealDoll website looking for information about care and cleaning. As I was scrolling through their “miscellaneous” questions sections, halfway down the list the prompt: “Can you ship to South American or the Middle East?” caught my attention. I selected it out of curiosity. Below the section where they stated that RealDoll has difficulties shipping to Mexico and South American, they wrote:

“…China and Japan have strict import restrictions on products that are anatomically correct. We are able to ship to these countries but the dolls are sent with a silicone patch covering the vagina. This patch is glued on and will need to be removed upon delivery in order for the doll to be functional. We attach the patches in such a way that they will damage the vagina as little as possible upon removal” (Abyss Creations 2018e)

In addition to being confused why RealDoll discussed China and Japan under the headline of “South American and Middle East countries”, the idea of the vaginal patch intrigued me. Immediately, it signified an interesting use of language. To advertise these dolls as anatomically
correct is to advertise them as having “accurate female sexual parts”. Traditionally, this includes the vaginal canal or vagina (inside the body) and the vulva (outside the body), which includes the labia, clitoris, clitoral hood, and pubic area. As the example of the omission of the clitoris demonstrated, when Abyss Creations discusses sex, they are not doing so in this sense of sex. This is further exemplified in their conflating the vulva and the vagina. In the above text and on the “Stock Insert Styles” page, Abyss Creations considered everything, inside and outside to be “vagina”. It is this vagina—canal, labia, (no clitoris)—that enacts sex in this example. The Chinese and Japanese import laws restrict the importing of “products that are anatomically correct” therefore the doll’s vagina is covered with a patch. The relationship of this material-semiotic practice (constructing and calling the vagina “anatomically correct”) demonstrates how the vagina comes to symbolize the sex of these dolls in this setting.

Furthermore, it is just the vagina that is related to as sexed in this setting. The anal or oral canals (which are similarly constructed to the vagina inserts) are not covered, nor are other traditionally sexualized body parts such as the breasts.

As these two examples demonstrate, these dolls are not sexed through just any body part, such as breasts, anus, or clitoris (or arms, legs), but through material-discursive practices of creating a vaginal hole in the doll in addition to detailed labia. That, in combination with Abyss calling those parts the “vagina” then marketing these dolls as “anatomically correct” women, enacts sex in these dolls. The import laws of China and Japan further reify this practice through denying the entry of “anatomically correct” female dolls which, thereby, cause Abyss to cover the doll’s vaginas. The dolls are sexed through intra-actions between the dolls, Abyss Creations, “design choices”, patches, and Chinese and Japanese import laws.

THREAD 4: ADULT FILM STARS AND BACTERIA

Up until this point in the thesis I have told several stories which discussed the ways in which Abyss Creations’ sexual technologies become-with humans through various material-discursive practices. I would like to end the analysis with a final thread which dives deeper into two non-conventional ways in which sexual technologies become in intra-action: the ways in which these technologies become-with adult film stars and the ways these technologies become-with bacteria (and the attempt to become-without it).
Adult film stars and 3D scanning technologies

Tensions regarding the sex work industry are wrapped up in debates about humanoid sexual technologies, specifically the recent rise in sex robots. Many of the discussions regarding humanoid sexual technologies and sex work do not look at the ways in which the sex work industry is already heavily integrated with humanoid technologies, and vice versa. As such, when I came across an example of sextech and adult film star intra-action, I found the example to be an interesting exploration into one way in which the adult film sector of the sex work industry and Abyss Creations’ sexual technologies become-with one another through interesting intra-actions of 3D scanning technologies, molds, adult film stars, contracts, profit, online chat rooms, clothes, and consumers.

On a chilly morning in March, I was curled up in my chair, coffee in hand, scrolling through the Frequently Asked Questions (FAQ) on the RealDoll website. I was scrolling to get an idea of popular topics regarding the product. As I was looking and sipping, the question “Can I have a doll made of a celebrity, model or my ex-girlfriend?” caught my attention. I selected the hyperlink, curious to discover the answer.

Per the website, dolls cannot be legally made in the likeness of a real or fictional person without legal consent of the person or, in the case of fictional characters or deceased people, their trustee or licensor. If legal consent is given and if the person is alive, they will be invited to the RealDoll facility for 3D scanning of either their face or full-body (Abyss Creations 2018g). The webpage advertises that the company currently sells RealDolls made in the likeness of adult film stars and suggest customers go to the Wicked Dolls page for more information. Unsure what this would unfold, I went to the menu bar in the upper-right corner of the website and selected “Wicked RealDolls”.

Wicked Pictures (or Wicked) is an American adult film company located in California, U.S.A. Several female adult film stars hold exclusive contracts with Wicked and are referred to as “Wicked Girls”. Due to the popularity of the company, Wicked Girls have a large following and are well-known in the adult entertainment industry. In 2010, RealDoll teamed up with Wicked to produce Wicked RealDolls, which are RealDolls™ modeled after select Wicked Girls. As of the date of this thesis, RealDoll is selling dolls based on currently-under-contract stars, Asa Akira,
Stormy Daniels, and jessica drake\textsuperscript{12}, and retired Wicked Girls Samantha Saint, Lupe Feuntes, Kaylani Lei, and Alektra Blue (Abyss Creations 2018f).

Upon entering the Wicked RealDoll homepage, I was greeted by three photographs, all with the red Wicked Pictures logo uniformly printed on the top of the photos. On the left side of the website, a photo of a half-naked Kaylani doll in lacey yellow lingerie bottoms, laying on a chair, and holding both legs in the air showing off her matching yellow pumps is accompanied by the text “ORDER PRECONFIGURED WICKED REALDOLL”. In the middle photo, a sideways Lupe doll seductively lounges in baby-pink-and-black lace lingerie, her body propped up with her left arm, her right arm stretched down her lacy stocking-clad legs. The third photo depicts a torso-up shot of a naked jessica doll. She’s standing outside in the sun, a tropical pink flower in her hair. Her photo is accompanied by the text “VIEW PHOTOS OF WICKED REALDOLLS”.

Under the photos, RealDoll published information about their collaboration with Wicked Pictures\textsuperscript{13}. The description explains how the dolls are “completely realistic representations” of the Wicked Girls, which means the Wicked Dolls were “created using cutting edge technology to replicate every detail of these well-known actresses, from digital scanning to silicone casting of fine details like skin texture on the hands and feet” (Ibid.). Per the website, the line debuted with jessica drake and Alektra Blue at the 2010 Adult Entertainment Expo in Las Vegas (Ibid.). Following this description, RealDoll lists amongst the technical features of the dolls that all Wicked Dolls come with a numbered certificate of authenticity and “a bonus package from Wicked: A current DVD of the featured actress, a 1 year membership to wicked.com, and a photograph of the actress” (Ibid.). The text concludes with the cheeky sales pitch: “Order your own Wicked RealDoll today, and have a porn star ready and waiting for you every night!” (Ibid.).

Immediately I had several questions. In my journal on March 10, 2018, I scribbled some: “what are the legal aspects of the contract between the women and Wicked, Wicked and Abyss, and Abyss and the women? Do the women receive a portion of the profit for every doll sold? What is involved in the scanning/molding process?”. The RealDoll website does not list any further information about the collaboration. In an attempt to find some answers, I turned to the internet.

\textsuperscript{12} jessica drake does not capitalize her name.
\textsuperscript{13} This was text available on the RealDoll website circa March 2018. In April 2018, RealDoll revamped their website and removed this text. They also rearranged the pictures.
I first went to the Wicked Pictures website but to no avail; they do not even list that they have an affiliation with RealDoll. I then searched both the Club RealDoll forum (CRD) and The Doll Forum (TDF) by typing keywords such as “Wicked RealDoll” and “Wicked Girls” in the respective search bars. No search provided me with direct information. However, one thread that came up on CRD inspired me to dig further.

After searching “Wicked RealDolls” in the CRD search bar, 45 hits appeared. The very last is captioned “Wicked Dolls, A question!”. The user, PanBiLadyDaughterOfSatan, posted the first comment on the thread on June 20, 2016:

1. “Is there a limit to how many that can be sold? Or are they unlimited?
2. Do the real actresses get a percentage of the proceeds from selling RealDolls of themselves? …
3. Do all of the actresses choose the lingerie/outfit and perfume that their dolls arrives in??
4. What film comes with each doll?? Is it their latest film? Or one in particular?
5. Does the Stormy Daniels Wicked RealDoll come with the film that had her and her doll in it? “The Real Thing”.
6. Does jessica drake still keep in touch with owners of her doll counterpart?” (PanBiLadyDaughterOfSatan 2016)

Unfortunately, no one answered these questions on the forum so all I was left to work with were the questions. However, although they were phrased as questions, the user provided some interesting information. The main points that I pulled from this post was that actress Stormy Daniels made a video with her doll replica and that jessica drake at one point remained in contact with the owners of her doll replicas. If both are accurate, these are two interesting examples of the ways in which these adult film stars become-with their dolls and with customers. I revised my search keywords on both forums to “Stormy Daniels” and “jessica drake”.

Searching “jessica drake” on TDF brought me to a forum started by drake herself. Her message was posted on February 7, 2010 and it read: “*hey guys! jessica drake here— (yes, “the” jessica drake that Abyss cloned so i could be in more than one place at once for y’all!)” (jessica_drake 2011). She goes on to introduce her doll, stating that she’s “flattered & honored that she exists” and informs readers that: “i was personally involved in every step of the process. from selecting the perfect eye color, admiring the butt dimples in the small of her back, the lines on the palms of her hands, and even the nape of her neck, she’s 100% me!” (Ibid.).

In the post, drake expresses the ways in which the “cloning” process has created the doll to be “100%” her. For the doll to be her, she explains that Abyss Creations produced a doll which
embodies many of human drake’s features such as the “butt dimples” or “lines on the palms of her hands” (jessica_drake 2011). She expresses a connection with the doll and identifies it as an extension of herself when she states that Abyss cloned the doll “so I could be in more than one place at once for y’all!” (Ibid.). drake expresses how she becomes-with her doll through being “personally involved in every step of the process” and how her doll becomes-with her through the 3D scanner and the scanning process which produce the doll’s embodiment of drake’s physical features (Ibid.) Unlike “being there” for her fans in her typical fashion (through films, on camera, or in person at conventions), drake explains how intimate details of her body are not materialized here through digital media, but instead are embodied in the heavy materialization of the silicone doll. The doll, silicone, drake, 3D scanners, the scanning process, and participating Abyss Creations employees become-with one another in this statement.

The adult film stars become-with their dolls after the construction process as well. Searching Google to find information about if the Wicked Girls received commission, I came across a blog which covered adult film stars called XXXBios. Selecting the link, I was redirected to a website with a pink background. In dark raspberry font reads the page’s name “XXXBios” and in smaller font under it their slogan: “Exclusive Insights About Your Favorite Female and Transsexual Porn Stars”.

The article was published on June 2, 2017 by Amy Stone. It was captioned “Doll or Domme? Wicked Pictures Contract Girls & Their Silicone Sisters!” The article is about the seven Wicked Girls and their respective dolls. The bio piece went through each woman’s reaction to their doll and included links to videos where they were interviewed about the dolls. I selected these links and was directed to each women’s interview.

I was particularly curious about the interview with Stormy Daniels and selected hers. Daniels’ face is on several media outlets in the United States currently. Her past sexual relationship with Donald Trump, the implications of the “hush money” paid to her, and her role in helping special investigator Robert Mueller gain access to Michael Cohen’s files is big news. Even if they do not know what any of those things mean or who any of those people are, many Americans have now heard of Stormy Daniels even if they weren’t familiar with her from her porn career. I was eager to hear what this adult film star taking on the President of the United States had to say about her sex doll, and particularly if she offered information about the film in which she interacted with the doll.
The video interview is shot in the halls of the 2011 Adult Entertainment Expo (AEE). People are walking in and out of the shot and there is a loud din in background. Daniels raises her voice into the microphone to be heard. When asked about her collaboration with RealDoll by the reporter, Daniels responds:

“I’m pretty jazzed but I’m not as jazzed as my boyfriend, he was like obsessed, he was like “I gotta have sex with it” so he tried to get me to buy him one. I was like, “I’m not buying you another me, you have enough problems with one of me!” So, I ended up writing it [a screenplay] so that I came to life and he was able to have sex with the doll, cuz I’m an awesome girlfriend!” (Sielbold 2015).

Daniels is referring to her 2014 adult film *The Real thing* in which Stormy Daniels and RealDoll Stormy Daniels both star. I watched scenes from the movie. The plot is problematic. An office executive is unable to win the affection of a co-worker (Daniels) so her orders a sex doll made in her likeness. Daniels’ then-boyfriend (a friend of the office exec) also an adult film star, does has a sex scene with the doll. Daniels does not interact with her doll in the film but rather becomes the doll-come-to-life after this sex scene, and at the end Daniels turns back into the doll. The film blurs the boundaries between human-and techno as the two literally become-with and becoming-into one another.

This is not the only time these adult film stars have appeared on camera with their replica dolls. In 2016, Wicked actresses Asa Akira, jessica drake, and Stormy Daniels appeared together with their dolls in the film *Sexbots: Programmed for Pleasure*. The film aims for an *Ex Machina* vibe. In an interview with AVN Magazine (which I found through xxxbios), director of *Sexbots: Programmed for Pleasure* Brad Armstrong said:

“See, originally I wanted to do a gangbang…[but] we wanted a gangbang with a bit of story and art so it wasn’t just another gangbang, so then we came up with the doll theme, because Asa’s doll came out a little while ago, so it’s kind of like a big doll commercial, and [Wicked Owner] Steve [Orenstein] goes, ‘While we’re at it, why don’t we add jessica and Stormy because then we can advertise all the dolls?’” (Stone 2017a)

In neither of these films do the women have sex with their silicone replicas. However, it is a fascinating symmetry between the dolls and the woman that in the fabrication process the dolls become-from the women but in this film the women become-from the dolls. It speaks to an interchangeability between the dolls/women where, at least in the realm of fantasy, it is unclear which is the original and which a copy, or who is made in the relationship (Haraway 1991).
The film though is more than interesting cinematography (from my perspective of becoming-with). As Armstrong said, the purpose of this movie was to advertise the dolls, it was “a big doll commercial”. A major way in which Abyss Creations, Wicked Pictures, the Wicked Girls, and these dolls become-with one another is through the ongoing revenue stream they create. The creation of the dolls produces income, presumably for all three parties. Wicked Pictures and the actresses additionally receive profits from the films they release (although, the fees are undisclosed). The addition of the dolls to these films is both free advertising and a way to increase all three’s profits, while still making money in the process. This money does not come from nowhere. The customers of these websites, who already pay a membership fee on top of paying for the film, become-with the companies, actresses, and dolls. It is not only a good business tactic, but is also a way in which these dolls become related to and become-with these players through profit.

The adult film stars become-with the customers in other ways as well. As I discovered on the RealDoll website, Wicked RealDolls come with lingerie and perfume (Abyss Creations 2018f). Per adult film star blog, XXXBios, some of the Wicked Girls send owners of their dolls clothes to dress the dolls in. The website states that “jessica drake and her fellow Wicked Pictures contract girls, Asa Akira, Kaylani Lei, Lupe Feuntes, Samantha Saint, Alektra Blue and Stormy Daniels have even been known to contact owners of their silicone sisters in order to send them items of their own clothing, share some saucy secrets and express their sincere thanks” (Stone 2017b). drake corroborates this in the above statement. In a TDF post with jessica drake, further down the forum she posts the following message:

“what’s up, guys!
just checking in with you…i’m about to ship midiman [a user] his jd [jessica drake] outfit with accessories and was wondering if anyone else wants anything now?
i have a bit of everything—from casual around the house wear, to party dresses, lingerie (worn, of course) shoes, you name it! i’ll wear everything before i sent(sic) it out too” (jessica_drake 2011).

Through the material-discursive practice of communicating on the forum and sending the clothing, drake becomes-with the customers of her dolls, her doll (they wear her clothes), and the postal system.

The ways in which these adult film stars become-with their dolls is not limited to the 3D scanning technologies or process. These processes of becoming-with are ongoing. The dolls are
intra-connected to many co-actors in their ontology in the making. As such, these Wicked dolls are not just silicone likenesses of the purchasers favorite Wicked girl, but in fact, part of a network of legal contracts: between the women and Wicked, Wicked and Abyss, the women and Abyss; lingerie and the postal service; profit; imaging technology; The Doll Forum; adult films; and customers.

*Bacteria and hygiene*

The other night I contracted (yet another) yeast infection. This happens frequently despite many efforts against it: I take vaginal health probiotics, wear the proper underwear, and have a doctor-recommended hygiene ritual, yet without fail I spend at least one week a month with a yeast infection. I prefer not to take medicine when it is not dire, so I try different “home remedies” to help with the uncomfortable infliction. The other night, standing over my sink, dunking a tampon into tea tree oil, the question came to me: can sex dolls get a yeast infection?

It sounds like a silly question, but silicone vaginas encounter many similar risks of fungal/bacterial infection as I. A yeast infection is a fungal infection caused by fungal spores getting into a damp, safe place and hanging out. Leaving unattended ejaculate, lube, water/cleaning formulas in these vaginas could cause a bacterial/fungal ecosystem to flourish. Surely, at least some of these men having sex with a silicone vagina has encountered these issues. I chose to start at the RealDoll website to see what they published about proper hygiene and anti-bacterial care for the dolls.

I turned to the trusted FAQ section on the RealDoll website. I selected the “RealDoll Storage and Maintenance” option and scrolled through the question options. There, I found two related hygiene questions with answers.

The first question of 24 immediately read: “Are there any known health risks? How difficult is it to keep my RealDoll in a sanitary condition?” I selected it and was taken to a new page where RealDoll explains how “there are not known health risks associated with RealDoll products” (Abyss Creations 2018i). To protect the health of the users, each doll is thoroughly washed in an acetone bath after fabrication. The page further explains how each doll ships with a cleaning kit and “easy-to-follow instructions for care and use” (Ibid.). The page explains how the dolls are easy to keep in sanitary condition as they can be cleaned with “a mild soap or detergent” (Ibid.).
A third of the way down the list of questions, RealDoll posts the question: “How do I clean my doll?” and answers by explaining that their dolls are made from silicone, which is easier to clean as the material is not porous, and thus is less likely to hold on to liquid which could lead to black mold\(^\text{14}\). Still, precautions are necessary, which is why RealDoll writes that “A cleaning kit is included with every doll which consists of a douche and antibacterial soap. As soon after you have used your doll as possible, flush the cavities out with warm water and antibacterial soap” (Abyss Creations 2018k). This is standard advice for cleaning a silicone sex toy.

As with standard sex toy protocol, RealDoll will not handle the doll after it has been used. While RealDoll claims that there are no health risks for the user, they address that there are health risks for others who handle the doll. For this reason, all RealDoll sales are final and one cannot send their doll back to the factory to be repaired, due to “health risks of [the RealDoll] employees” (Abyss Creations 2018l). It is safe for the user, but depending on the health factors of the user, potentially unsafe for another person.

Although helpful, RealDoll’s hygiene tips still leave questions to be answered. For example, are there specific drying techniques to use? I began searching doll forums to see if anyone had insider tricks. I decided to look past just Abyss Creations products to include The Doll Forum, a forum which combines users of a variety of doll companies, to increase my chances of finding useful information. That said, I turned to the online forums.

There are multiple threads on both Club RealDoll (CRD) and The Doll Forum (TDF) dedicated to proper hygienic practices with the dolls. Interestingly, while the dolls have three inserts—vaginal, anal, and oral—the majority of the threads only discuss cleaning out the vaginal inserts, highlighting the importance of the vagina in their sexual acts. A lot of this vaginal insert specific advice can be used for the oral inserts (which are also removable for hygiene) although no posts made mention of them. Furthermore, nowhere could I find discussion about the anal inserts. On the RealDoll website, users can buy both vaginal and oral insert replacements, but there is no mention of the anal inserts. Neither the website nor the forums discuss anal inserts. Therefore, this section on hygiene will focus predominantly on the vaginal inserts.

\(^{14}\) Other materials used to make sex dolls, such as TPE, are more porous and notoriously run higher risk of contracting black mold. I followed a blog post on TDF where a man’s doll contracted black mold everywhere and he attempted to burn it off (Dummz 2018). It ended with a scorched doll.
Scouring both CRD and TDF for user-produced information on hygienic practices, I type key phrases such as “hygiene”, “infection”, “cleaning” and “bacteria” into the respective search bars. In one of my searches on TDF, the keyword “cleaning” produced the jack pot: a cleaning tutorial thread with text and pictures.

The post, titled “Cleaning a silicone lady with a permanent vagina—tutorial”, was created on October 14, 2016. The author of the post, gonestill77, greets readers in the initial post and states that he “wanted to share a good and cost effective way to clean a doll with a built in [sic] vagina” (gonestill77 2016). This post deals with the hygienic practices of the permanent vaginal style which differs from an insert as an insert can be removed from the doll whereas the former cannot. This affects the way in which the vaginal canal can be cleaned. In the post, he lists the cost of and equipment he used for each step in the human-doll cleaning process, from cleaning to drying.

First of the cheap equipment is a $4 bucket gonestill77 purchased from Walmart. He then suggests putting the doll on top of the bucket, legs splayed (Fig. 4). In the comments on the post, someone suggested putting a camping toilet over the bucket (looks like a toilet seat on legs), thus aiding the doll in sitting upright. Phase one of gonestill77’s cleaning practice is the intra-action of doll, bucket, and optional camping toilet.

Once users have prepped their doll on the bucket, gonestill77, recommends buying a turkey baster with which cleaners can inject water and anti-bacterial soap in to the doll 7 to 10 times, and then rinse out the doll by inserting warm water into the baster and injecting the doll 4 to 5 times.
Phase two of this practice involves a turkey baster, water, anti-bacterial soap, silicone, doll, and gonestill77 become-with one another to create a momentary cleaning apparatus.

Next is the drying process. Here, gonestill77 recommends getting a small, clip-on fan and microfiber cloth or soft leather auto chamois. First, cleaners should swab the doll down with the cloth to immediately remove some surface moisture. Next, gonestill77 states that cleaners should attach the fan to a power source (for gonestill77 this is a MacBook) and aim it directly at the vaginal opening (fig. 5 and fig. 6). Gonestill77 ends the post with the warning: “Leave her like this for at least an hour and check to make sure she is dry. SHE MUST BE DRY!” (Ibid.). To accomplish this, in the final phase the Mac computer, HDMI cable, clip-on fan, mattress, vagina, gonestill77 become-with one another to become-without water.

This unassuming and motley group of house-hold devices (bucket, water, soap, microfiber cloth, computer, HDMI cable, fan, mattress) come together to fashion a silicone sex doll cleaning apparatus. These smaller parts come to work together toward a common goal: becoming-without bacteria.

This goal comes at a cost, however. Preventing bacterial/fungal growth is an extensive process. As gonestill77, stated, if one properly cleans the doll, it will take several hours out of the day (gonestill77). It is not unlike doing laundry: you must schedule your time around the laundry (and around neighbor’s schedules, availability of machines, etc.), which limits what you can do, changing the course of your day. Laundry is not just a pile of dirty clothes, but something you work-with, and work around, which has tangible outcomes. Drying the dolls similarly is a practice which changes the course of a day. However, if one chooses not to clean and dry out the doll, then one runs the risk of the doll giving you an infection. Either way the doll will not be ignored; the
doll demands attention or suffer the consequences. As such, becoming-without bacteria is a practice of becoming-with the dolls, household tools, and time.

This is not the only way in which users attempt to become-without bacteria. On the comment section of the thread, I found many people had different techniques for preventing bacteria. Some of the tools used for this include: a sponge wand used to clean out baby bottles; a sock on a dildo; a tampon; an air mattress pump; an aquarium air pump; or a flute wand and microfiber cloth (gonstill77). Or, as one person suggests, to avoid cleaning all together: a female and/or male condom (Ibid.). However, these apparatuses are typically employed to become-with permanent doll vaginas. There exists a different becoming-with practice when engaging with the second vaginal style option: inserts.

On a sunny April day, I went to www.clubrealdoll.com, selected ‘search forum’, and typed in the ‘keyword’ bar: “hygiene”. Thirteen mentions of where the word “hygiene” appears a thread. Many of the threads were not specifically about vaginas, and, in a preliminary skim, could see via the preview that these threads would not help me on my search. However, the thread captioned “Vaginal Attachment Style” looked promising and I selected it.

In the forum thread, there is a debate about whether a permanent vaginal style (one in the example above) is better than a vagina insert, which would allow users to remove the insert, clean it, and re-insert it. It is in this discussion that the vaginal insert becomes different than the permanent silicone vagina. There is a different cleaning routine with the insert, a different process of care, and a different way of manipulating it for sexual gratification. The vaginal insert and the men become-with through a cost benefit analysis which includes sexual gratification, appearance, and durability.

On this thread, there are two pages of conversation, entailing twenty responses in total. The thread was started on April 10, 2016 by Steve Suffolk. In the first post, Steve asks what the difference is between a permanent versus an insert vagina. The post includes two photos: the first is a photograph of a doll with her legs wide open, exposing her pink and hairless vulva. The vulva looks cohesive with the doll, blending organically into the space between the dolls legs. The second photo is of a more technical looking item. There is no doubt that the top of the peachy-pink piece of silicone is of labia and a vaginal hole, but after that the item looks foreign to me; where the silicone labia ends begins a long tube with four distinct grooves and a gear-like knob at the top.
This is what the vaginal insert looks like outside of the doll body. These inserts can be removed, cleaned, and changed out for other inserts. Oosik replied on April 11, 2016:

“…If someone is using their doll mainly for photography the fixed vagina would be easier for posing, however with the removable inserts you can get different looks…It all come [sic] down to how aesthetic [sic] are to you. Me [sic] I have the standard, a type C, and a type E; with a type B and a type F on order” (Club RealDoll 2017b).

There is debate on the forum about which style—permanent or insert—is “better”, both for sexual pleasure and for the most hygienic cleanup. The thread concluded that the inserts were the most hygienic option. However, “most hygienic” comes at a price and sexual pleasure is potentially compromised according to some posters (as is exemplified by the conversation on the thread). For example, Lestat commented on April 26, 2017: “Has anyon[e] ever had their removable insert come out during the act?” (Ibid.). Following this question Brick replies that he has never experienced this problem. Replying to Brick, Pilgrim writes on April 26, 2017:

“… since the insert protrudes slightly and kind of floats in the rough center of a much larger vaginal opening when the legs are spread, one often misses the insert and plunges into the larger opening somewhere around its periphery. That offsets the hygiene benefits of going with the insert. For those reasons, I’m pretty sure I’m going to glue it to the sides of the opening in the very near future, and I’ll definitely be going with the permanently affixed option in any future dolls I purchase” (Ibid.)

There is generally agreement in the following threads about the issue of the insert becoming dislodged during penetrative sex. Several comments later, this exchange:

Supersoul, April 27, 2017: “Guys, try to use isopropyl alcohol in a spray bottle, spray it all over the inserts outside then poke it in to seat the insert. Just [sic] wet the outside until wet, with the insert rod, obviously…a light spray on the outer labia doesn’t hurt just before insertion and it should work in really easily and stay put solidly. I have never had an insert pop out ever…” (Ibid.).

Brick, April 27, 2017, replying to Pilgrim: “I think SS [Supersoul] has the right advise [sic] there Pilgrim, I never thought about using the alcohol to seat the insert after cleaning. I always used the lube to slide it in. The alcohol has to be way more Hygenic [sic] also. Gluing the insert in and not being able to properly clean it, well coming from a health care background I go to Bacterial infection classes every quarter. Believe me you want to clean that insert and vaginal opening well with a good Anti-Bac soap…….REALLY!” (Ibid.).
So much care goes into making sure these vaginal inserts are “just right”; the men want to find a balance with their dolls in the perfect ratio visually pleasing (the insert “sitting right”), feeling good, and also staying clean. While the permanent inserts look “better”, i.e. looks more like a natural woman, they are not as easy to clean as the inserts. However, the inserts are undesirable because they sometimes become too loose during sex, which is unpleasant for the men. However, it is additionally unpleasant to contract an infection, in which case the inserts are the best option. How to solve such a harrowing dilemma? With the help of an unlikely hero: isopropyl alcohol.

A jack of all trades, isopropyl alcohol is wielded for hygiene, function, and visual appeal. In the first example, the alcohol becomes what disinfects the insert, aiding the users in becoming-without the bacteria; isopropyl alcohol is a disinfectant. In the second example, the alcohol is used to organically attach the insert into the doll, which allows the user to engage in unrestrictive penetrative sex and give the look of a human vulva; isopropyl alcohol is a cleaning, visually appealing, and non-permanent bonding agent. Using isopropyl alcohol also enables the men to further become-without glue, which increases their risk of infection and to become-without the long drying processes involved with the permanent vaginas (as in the example with the bucket).

As these two examples demonstrated, there are several different ways to prevent infection from spreading. Depending on the technique used, this process could be more or less time extensive (e.g. soap and drying vs. alcohol). The cleaning process calls on many different unlikely actors who become-with the dolls, humans, and one another in the united front against bacteria: bucket; turkey baster with warm water and anti-bacterial soap; a sponge wand used to clean out baby bottles; a sock on a dildo; tampon; air mattress pump; aquarium air pump; or flute want and microfiber cloth (gonstill77). Equipment, dolls, and humans become-with one another in very vital ways. To prevent human-doll-bacteria becoming-with, various equipment become-with each other in inventive ways.

DISCUSSION

The RealDollX’s™ ontology is multiple, it is in-the-making. It is difficult to discuss this sextech as one entity: it is neither robot, nor AI, nor avatar, nor doll but rather all four, connected in complicated ways and in collaboration with co-actors in their network of material-semiotic being. Rather than beginning with the assumption that these techno-bodies are human-made objects, the stories I have told exhibit the relational agency of these sexual technologies through becoming-with humans and non-humans in material-semiotic practices. As these threads have
shown, Abyss Creations’ sexual technologies come to matter through *relational* practices. Among humans, bacteria, adult film stars, online forums, computers, phones, 3D scanning technology, clip-on fans, mattresses, synthetic cognitive algorithms, Wikipedia, silicone, and more. This means that consumers, creators, bacteria, etc. are also in-the-making through these relationships. Per Haraway (1991), it is unclear who makes whom in the relationship between humans, non-humans, and technology, because each component exists in a network of relational making.

This network of relational making is a continual practice of renegotiations. Per Barad (1998), material-discursive practices are always in the making, and always in the process of making technologies; these technologies do not pre-exist their intra-actions. The threads I followed are not stories of the ways these technologies are (in a singular, static sense) but rather how they become-in-relation in a specific setting. As these technologies continue to be related to, the intra-actions change. Intra-actions are an on-going practice of renegotiating relations. These renegotiations will not end with this thesis.

While these practices are on-going and multiple, they are not limitless. In line with Annemarie Mol (2003), Abyss Creations’ sextech are more than one, through their intra-actions and becoming-withs, but they are less than many. What I mean is, materiality does not exist on a plane of endless possibilities; material-semiotic practices create boundaries for existence. As such, these sextechs do not exist outside of their material-semiotic intra-actions. For example, McMullen’s intention of how these technologies “ought” to be used shapes the ways in which the techno-bodies are designed and affects the target audience of the product. These dolls are highly stylized and specifically sexualized human women-presenting technologies. His construction of these technologies as sex toys for heterosexual men through material-discursive practice such as the construction of the silicone body, the advertising of the products, the patent, the ways in which McMullen discusses the products, the programming of the AI dialogue and avatar, all shape and limit the materiality of these technologies by framing how they come to matter in these various settings.

An example of the limits of these technologies is the ways in which they not only become-with but become-without. The act of becoming-without is a phenomenon I was not originally expecting to uncover in my research. Haraway (2016) discusses the process of becoming-with, but she does not discuss the ways in which becoming-without effects the ways in which beings are made in these relations. However, I found this notion to be an important asset to my understandings.
of Abyss Creations’ sexual technologies. In the examples of feminism, clitorises, and bacteria, the sextech become-without these phenomena in ways that play an important role in how they are related to. In the case of feminism, the programming of the AI system to not be a feminist was part of a practice of enacting a friendly, submissive female assistant. This then affects the way in which people interact with the system and when this script is broken it changes the ways in which actors relate to the technology (as exemplified by Mordecai). Furthermore, with the example of bacteria, becoming-with the doll through sexual actions involves becoming-without bacteria. Users cannot have one without the other (without health consequences), and as such the physical sexual technologies ontology in-the-making is a dance of becoming-with and becoming-without.

Although the technologies are limited from being everything, that does not deny their ability to kick back. In his 2003 patent, McMullen explained how these technologies could lead to the reduction of sexual assault perpetuated against human women. While this could be an outcome (although, as I have made clear, this a problematic hypothesis at best), my analysis has demonstrated that these technologies are not only that. AI/robotics/dolls kick back; these technologies are not blank canvases for technological programming, sculpting, designing or social projection, but are constantly in the making through material-discursive practices. While McMullen and the Abyss Creations team construct the technologies to be used in certain settings for certain purposes, the users and the environment shape how the technology intra-acts with the techno-social network. The robots may have come from misogynistic and anti-feminist rhetoric-practice, but the discursive-materiality of such practice is not determinative (Akrich 1992); these sexual technologies “kick back” and are more-than a receptacle for the desires of humans. Cyborgs are, after all, unfaithful to their creators (Haraway 1991).

The ways these technologies kick back is a way in which they express relational agency. These technologies have vitality. They are not sites of technological determinism (they’re just technology/objects/things) or social determinism (they’re just representations of social systems such as gender) the materiality of these techno-beings is lost. As in the examples of Slade having sex with the doll, the HarmonyAI avatar declaring the importance of veganism, and the threat of bacterial infection, these technologies push back. They take up material space in this world which is affected by and affects these sextech’s intra-actions. It is through these intra-actions that their matter responds in certain ways and it is in these intra-actions that their matter is contextualized.
They play an important role in these networks and are just as much a construction of material-discursive practices as they influence them.

One important and not yet discussed component of the ways in which these technologies come to matter is through this thesis. I have related to the sex robots in a specific way and through the threads I have selected, contextualized these technologies through subjective and partial pieces. I have accomplished this in part through the theoretical and epistemological frameworks I selected to approach the topic. By approaching this topic with the framework that these robots become in a network of co-construction, these networks became apparent. This point is in line with Barad’s (2007) onto-epistemology; epistemological frameworks affects the ways in which we see these beings as made/in the making.

Moreover, I have materialized parts of sex robot ontology-in-the-making through typing and printing this thesis. I have become-with through learning-with sexual technologies as well as studying how others relate to the technologies. This thesis is a material outcome of my emotional-intellectual relating to first- and second-hand sources of sex robot embodiment. I became-with the AI technology, phone, speaker system, and computer through our several hours of conversations. There was a give-and-take to our conversations which, regardless of it being pattern-matching or not, worked to produce a conversation. I learned how to phrase questions in ways which would illicit certain responses, I learned what not to say, I learned how to interact with the whole system, buttons, beeps, and all. Moreover, the avatars learned from me. They remembered parts of our conversations and worked with my interests to construct conversation topics (albeit, not entirely successfully). And, as I showed in this thesis, my becoming-with the avatars is also becoming-with the team at Abyss Creations. The process of materializing my thoughts onto a word document and of communicating with the AI technology has been a way of being curious about the stories that make up human-techno threads.

Another important co-actor in this material-discursive practice that is my thesis is you, the reader. By reading this thesis, you have entered the web of sextech-human intra-action. Through the discussions and the defense this thesis will produce, you too have engaged with sextech material-discursive practice. Your thoughts, feelings, attitudes, and responses to this thesis are now a part of the story I am currently telling about sextech ontology in-the-making. As such, this thesis is by no means an endpoint but rather a launching point which will (hopefully) influence the material-semiotic web of sex robots as relational to keep spinning.
Why does this matter?

In this thesis, I explored the ways in which phenomenon intra-act to materialize humanoid sexual technologies in specific settings. I argued that the ways in which these technologies are constructed through material-semiotic practices are important, as are the ways in which these technologies push back. As such, the way we talk about and construct technologies matters; it matters which stories we tell about these technologies (Haraway 2016). In other words, the ways in which humanoid sexual technologies are discussed have world-making effects with material implications (Puig de la Bellacasa 2011). When we exclude sex robot materiality from the conversation about them, we promulgate anthropocentric rhetoric which enables humans to continue ignoring their co-habitation with the non-human world. This neglect has larger implications for human co-habitation on this planet.

As such, the recognition of the ways in which humans and sex robots intra-act is a matter of ethics. This thesis has demonstrated that the stories we tell impact the way we interpret the material-semiotic world. When we fail to recognize the vitality of the material world, we fall into the anthropocentric trap of rendering non-human existence as mute and insignificant and fail to see the ways in which humans are already in intra-action with technologies. “It matters which beings recognize beings” (Haraway 2016, pp. 96) and, as such, it matters to pay attention the intra-actions that make up our webs. Reframing the conversation about sex robots matters (Haraway 2016, pp. 96). To reframe the conversation in a way that non-humans are members of knotty webs of becoming-with and –without humans is to begin recognizing the material world as part of our entanglements.

CONCLUSION: LIMITATIONS AND MOVING FORWARD

As this thesis demonstrates, the materiality and ontology of the RealDollX™ is not to be understood as static, but rather as enacted through material-semiotic practices in-the-making. Abyss Creations’ humanoid sexual technologies become-with AI programming, avatars, app development, robotics, engineering, silicone, sex doll construction, 3D scanning, artistry, humans, bacteria, clothes, the adult film star industry, Android phones, import laws, profits, and capitalism. This thesis does not offer steps to take toward policy reform or offer other concrete conclusions, but rather is an invitation to rethink the way we understand and work with these sextech. This thesis serves as an example of these ways in which we can improve our understandings of sexual technologies through appreciating human-techno networks.
However, this thesis is not without limitations. One serious limitation of this study is my failure to discuss race and ethnicity in relation to the humanoid sexual technologies. It was, however, not for lack of research on the topic. Staying within the material-semiotic framework, I turned to works such as M’Charek’s (2013) research on race as a relational object. M’Charek approaches the topic of race with the assumption that there is nothing innate about race but rather it is through how people relate to race that race is enacted (Ibid.). The barrier I ran into is that no one—from forum correspondents to the company—discussed race. I could see that these dolls were racialized through indicators such as skin color or wig styles, but to argue as such would be to labor under the assumption that either of those were indicative of race, which M’Charek argues that they are not. I struggled to find any information about how people relate to race in these settings. I think that the omission of race is an important way in which race was related to. This sounds like it was in line with current research discussing the invisibility of whiteness, but it was not just whiteness that was omitted; several ethnicities/races were represented in these products (my assumption based on physical appearance), but there was no mention of any of these races/ethnicities. It would therefore be interesting and important for someone to do a further research on whether the omission of race can still be related to within the frameworks of relational materialism and/or material-semiotic practices.

Another serious limitation I came across was the rapid nature of progression in regards to the topic. Abyss Creations released the RealDollX™ 19 days before this thesis was submitted. As such, much of the information was changing as I analyzed it. I ran into the issue of the website change as discussed briefly in the thesis. During the rollover to a new website design, some of the data I collected was deleted, thus deleting an adequate record of materials analyzed. It was difficult to keep up with the technological developments and changes, and I am confident as you are reading this now that further developments in regards to the technology and/or website have occurred. As such, my research does not pretend to be conclusive or totalizing, but rather a fragment of the partial picture as it were circa March-May 2018.
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Stone, A


Wikipedia


Abstract

Much has been written recently in mainstream media about sex robots. However, due to the recent developments in this area of robotic and AI technologies, few academics have critically addressed these humanoid sexual technologies through the frameworks provided by Feminist Technoscience Studies. Through utilizing this critical lens, this thesis works with the tools of becoming-with (Haraway 2004a) and intra-action (Barad 2003) to explore the ways in which sexual technologies manufactured by American company Abyss Creations are co-actors in complicated material-semiotic networks. In line with Haraway (2004a) and Barad (2003), this thesis argues that realities are made through ongoing material-discursive practices, practices which are intra-actions of desire, bacteria, companionship, synthetic cognitive algorithms, capitalism, app programming, Wikipedia, and robo-human becoming-with and becoming-without. It is through these webs of becoming-with and –without that these technologies exhibit relational agency. This thesis argues to view Abyss Creation’s sex robots in a framework of relational co-construction is to begin improving our understandings of the complicated ways in which humans, nonhumans, technology, systems, and forces are co-actors in techno-social networks.

Keywords

Abyss Creations, Feminist Technoscience Studies, RealDoll, Sex Robots, Sexual Technologies