The Voice of Technology: Understanding the Work of Feminine Voice Assistants and the Feminization of the Interface

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Accessibility
THE VOICE OF TECHNOLOGY: UNDERSTANDING THE WORK OF FEMININE VOICE ASSISTANTS AND THE FEMINIZATION OF THE INTERFACE

by

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Presented to the Committee on Degrees in Studies of Women, Gender, and Sexuality and the Department of Computer Science in Partial Fulfillment of the Requirements for the Degree of Bachelor of Arts with Honors

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Abstract

In the past decade, people have come to rely on digital voice assistants to help them interact with technology and perform tasks in every aspect of their lives. These digital voice assistants are friendly, responsive, polite, and unmistakably feminine. In this thesis, I explore how the labor of Alexa is represented in technical and popular discourse and what these representations suggest about the gender, race, technicality, and personification of Alexa. In order to more broadly contextualize and understand Alexa’s labor, I look at the systems of (largely white) women and technology that have existed throughout history, such as weavers and their looms, assembly line workers and their conveyor belts, typists and their typewriters, or operators and their switchboards. I argue that in order to use these technologies, people (largely men) relied on women to traverse the space between them and the technology itself, thus these women worked to make technology easy to use, pleasant, and most importantly, less technical. By analyzing representations of Alexa’s labor through sources such as Amazon advertisements, websites, and Alexa skills, I argue that Alexa’s labor is represented similarly to the labor of these women, as feminine, human, non-technical, and (implicitly) white. In this way, the labor that Alexa performs is strictly relegated to the side of the consumer and user of technology. Much like operators and typists, Alexa becomes part of the computer interface itself and operates as a (feminized) way for people to use technology. Alexa’s labor mimics the way that women have worked with technology for decades, only now, it is the computer interface itself that is becoming pleasant, helpful, and (quite literally) feminine. Alexa perpetuates femininity not just in voice and name, then, but in labor as well, working to make users feel more comfortable, more trusting, and more willing to give up control.
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Chapter 1

Defining Alexa: Inspirations, Representations, and Contradictions

A man walks into his house after a long day at work. Immediately, the lights come on, the heat is turned up, and a voice greets him: “Welcome home, Edward. What’s a pirate’s favorite letter? You might think it’s ‘R,’ but his favorite one is the ‘C.’”¹ In a typical “Honey, I’m home” fashion, the voice welcomes the man home and works to entertain him or cheer him up. This voice seems to impersonate the housewife waiting for their husband to come home, and catering towards his needs when he does. This image is emphasized even more by the fact that the voice is high-pitched, female-sounding, and goes by the name Alexa.

In the past decade, people have come to rely on digital voice assistants to help them interact with technology and perform tasks in every aspect of their lives. At the beginning of 2019, Amazon announced that they had sold over 100 million Alexa devices to date, and in January 2020, the company announced that they have now sold “hundreds of millions of Alexa-enabled devices” to date.² As of April 2020, more than 1 in 3 people in the US own a smart speaker of some sort.³ These personified software programs help users by answering questions and managing calendars, lists, timers, etc. They can integrate with third-party apps, and Alexa can even “learn” user-defined “skills.” These digital voice assistants are friendly, responsive, polite, and unmistakably feminine.

What is the work that these voice assistants do? What labor do they represent? And, most importantly, what can we understand about Alexa’s role in society and in technology from the

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¹ Amazon Alexa, “Create Custom Location-Based Alexa Routines,” YouTube, April 12, 2020, video, https://www.youtube.com/watch?v=oeY2lnHQCIE.
way this labor is presented and described? In this thesis, I will explore how the labor of Alexa is represented in technical and popular discourse and what these representations suggest about the gender, race, technicality, and personification of Alexa. More specifically, I look at how the labor of Alexa has been represented by Amazon and by English-speaking consumers in the US over the past 10 years.

Feminine voice assistants and feminine technology in general have been represented repeatedly in the last decade in film, popular media, etc., and these representations can provide a helpful entry point in conceptualizing feminine robots and voice assistants and the labor they perform. Ava in *Ex Machina*, for example, is an artificially intelligent, white, feminine robot that is smart enough to manipulate the people she meets into gaining her freedom through any means possible, which includes killing her creator and leaving one of her pawns for dead. The film highlights the (assumed) submission of feminine technology and the human domination over it through the use of various feminine robots for sexual pleasure and through Ava’s eventual rebellion from her expected submission. One Asian feminine robot, Kyoko, is even programmed by her creator to be a mute servant, fully submissive and unable to speak out in any way. Lastly, the film depicts the danger of (feminine) artificial intelligence that at its core has no real emotions and remains cold-hearted and inhumane.⁴

In the film *Her*, comparatively, we see the representations of an actual digital voice assistant named Samantha, instead of a robot. This assistant, voiced by Scarlett Johansson, is created and personalized for “her” user, Theodore. Throughout the film, however, Theodore falls in love with Samantha, and the two even begin to have a sort of relationship. Similarly to *Ex Machina, Her* depicts Samantha as performing a sort of sexual, emotional labor in her

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⁴ Alex Garland, dir., *Ex Machina* (Universal Studios, 2015).
relationship with Theodore. The film also associates feminine voice assistants and technologies with submissive, emotional, sexual, and service labor, categories of labor we will see have been feminized.

These films act as theoretical representations of what a feminine voice assistant or feminine robot could be. We see themes of submission, sexual and emotional labor, and customer service / secretarial labor, but we also see questions come up around power and the danger of (feminine) intellect. These representations, much like the majority of fictional representations of feminine robots and voice assistants, are also (implicitly or explicitly) white, whether through the (white) voice of Scarlett Johansson in *Her* or the visible whiteness of Ava in *Ex Machina*. The nonwhite feminine robots seen in *Ex Machina*, in contrast, are instead depicted as less dangerous, more submissive, and lacking agency completely. They seemed to be used only for their bodies, with no indicated intelligence at all; not artificially intelligent robots, only artificial moving bodies. These themes and questions represent the sorts of topics users, creators, and producers might struggle with when producing actual technological products. While these films might seem somewhat distinct from actual feminine voice assistants like Alexa, it is important to note the overall impact of these films on the general perceptions and understandings of feminine voice assistants, which in turn influence both the real-life constructions of these technologies as well as the expectations that users have for them. In this thesis, however, I will focus specifically on concrete (non-fictional) representations of feminine voice assistants and the labor they perform. By understanding how these fictional technologies are constructed as real products, we can better understand the impact of the history of fictional feminine robots and technologies and the concrete products produced alongside it. Concrete representations of Alexa’s labor allow us to understand these inventions in the broader context of representations (fictional or not) of

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feminine robots and voice assistants while also highlighting the real-life impact of these feminine voice assistants in the way they are actually being viewed, used, and understood.

**Methodology**

For my research, I will conduct a discourse analysis by exploring the different ways Alexa’s labor is represented in both technical and popular sources, including the Amazon Alexa skills store, developer tools, video advertisements, and customer reviews. I define “discourse” as historically specific collections of statements, concepts, images, metaphors, descriptions, and even software that are inextricable from the social relations, institutions, and power structures in which they were created. For this analysis, I draw upon methodologies from feminist science and technology studies in order to understand the reciprocal relationship between science and culture. In addition, by understanding the production of knowledge as situated and partial, in line with Donna Haraway’s “Situated Knowledges,” we can understand the value that non-traditional and non-technical sources can provide and the value of consumer knowledge. Because people who build technology hide their implementations behind intuitive interfaces, consumers often have a very limited understanding of how technology works and instead know only what it is like to interact with technology. For example, Alexa users themselves often confuse third-party Alexa skills (connected to other companies) with functionality defined by Amazon, which highlights a general misunderstanding of technological distinctions and the skill differences within Alexa. In many ways, users group all usage (and skills) together under the umbrella of the specific technology they are interacting with, while technical creators understand the actual functionality of the technology (i.e., the difference between Alexa and Alexa skills).

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The division between technical creators and non-technical consumers highlights a stark difference in knowledge and perspectives between those who build and those who consume technology, and exposes the importance of including and valuing a variety of these differently positioned perspectives in order to gain a more complete understanding of the way Alexa’s labor is represented.

To get at these different perspectives, I will trace representations of labor from Amazon to users’ perceptions (and subsequent representations) of that labor to the way in which users utilize different functionality of Alexa. In the realm of Amazon-produced representations, I will look at Alexa advertisements as well as websites related to Alexa, including both the customer-facing website and the developer-facing website (for creating Alexa skills). On the user side, I will look at customer reviews and examples of Alexa usage as well as the skills created by non-Amazon developers and submitted to the Alexa skills store in order to understand the way in which Alexa’s labor is perceived and represented by both technical and non-technical consumers.

**Definitions at the Intersection of Gender, Labor, and Technology**

In order to analyze the type of labor Alexa performs at the intersection of gender and technology, I will first define the terms that form the basis for my analysis. Though they are influenced by the work of past scholars, I have constructed these definitions specific to this thesis and the unique space I am defining and analyzing. Most important are the definitions and distinctions of types of labor, as the differences in labor are crucial to the argument I will be making about what the work of Alexa really is. These types of labor overlap, intersect, and often interact within larger systems of labor and production, but I attempt to define each separately here for clarity.
Femininity/Masculinity and Feminization/Masculinization

Although masculinity and femininity are constantly evolving and changing, it is important to acknowledge the overly general associations of these terms. In an attempt to address this issue, I define masculinity as a collection of physical attributes and personality traits or characteristics that are often associated with men, and I define femininity as a collection of physical attributes and personality traits or characteristics that are often associated with women. Masculinization and feminization, then, are the processes in which certain objects, labors, industries, etc. are imbued with masculine or feminine traits and become strongly associated with men or women (respectively). This process then produces masculinity and femininity, and it is crucial to acknowledge that these productions are not constant, permanent, nor universal. These definitions are a result of the time, place, and circumstance that they are produced.

Similarly, masculinity and femininity are not consistently apparent in those expected to perform it (i.e., men and women, respectively). Much of the femininity of Alexa, for example - the voice, the personality, the politeness, the helpfulness - is produced only through a person’s interaction with it. These constructs then are not produced in a constant, stable, or internal way even within one individual (or technology); instead, these constructs come about through interaction.9

Lastly, it is important to acknowledge that the dominant conceptualizations of femininity and masculinity, especially in the US, are based on attributes and traits associated with white women and men.10 Therefore, I will be discussing how representations of Alexa’s labor are both gendered as feminine and (implicitly) raced as white.

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**Feminine Voice Assistant**

A feminine voice assistant in technology refers to a software program that interacts with the user through a higher-pitched, female-sounding voice. Often, these assistants are also named and referred to by a name typical of women. The role of these assistants is to perform technology-related tasks for the user. These assistants are often embedded and pre-installed on a technological device such as a phone, a computer, or in the case of Alexa, a speaker.

**Digital Labor**

I will define digital labor as labor performed through interaction with and use of technology, including any work that makes use of the internet, software programs, or any other capacity of a technological product. While digital labor includes technology-related tasks such as writing code or building a website, it also includes technology-adjacent tasks such as writing an email, posting a blog, surfing the internet, and the customer service work that involves interacting with technological systems like customer information databases, company software, etc.

**Consumer Labor**

I will define consumer labor, using the work of Ursula Huws, as labor performed by the consumer for their own benefit, either to allow them to obtain or use a product. Huws defines the increasing amount of work put on the consumer as “self-service” activities such as getting food from the shelves and putting vegetables in bags at the supermarket as well as technology such as ATMs, self-checkout machines, etc. Huws even highlights waiting in line as consumer labor, stating that “the time lost is not the waged worker’s but the unpaid time of the consumer.”

Consumer labor, then, represents this unpaid work that consumers (or in terms of technology,

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users) perform in order to gain some reward or functionality that they are looking for as a customer, not as a paid worker. In the case of self-checkouts, for example, the process is often faster and more efficient for the consumer with the drawback of requiring the (unpaid) labor of scanning one’s own items. Instead of the motivation being monetary, the motivation is that this labor is directly productive for the person performing it.

Domestic Labor

I will define domestic labor as labor performed exclusively inside the home directly related to maintaining and continuously producing this idea of home. I will use Rachel Bowlby’s definition of home as “a place of peace, stability and satisfaction” and as “a withdrawal or seclusion from a ‘real’ world” in the separation it provides from the public, the market, and all the troubles and worries that come with them. Using this definition, then, domestic labor is any and all work that pertains to constructing this sort of calm, stress-free, comfortable environment. This includes cleaning and caring for the children to avoid any sense of chaos and instability, cooking to ensure the family is both nourished and satisfied, and taking care of anything else that needs attention in the home to make it appear unblemished by work and truly trouble-free. In order to construct the home as the opposite of the productive, chaotic, difficult “real” world, the labor in the home must remain unseen by the rest of the household (those for whom the house remains a haven from work), thus domestic labor is work that is productive yet continually works to make itself invisible.

In the context of domestic labor in the US, I will be focusing my analysis on the unpaid domestic labor performed largely by white, upper and middle class women to maintain their homes. I am choosing to use this definition because Alexa is largely perceived as white and

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because I will argue that Alexa’s labor is represented in a way that aligns with this definition of unpaid, domestic labor performed by the white, upper/middle class housewife. This type of domestic labor also constitutes the mainstream perception of domestic labor because of the dominance of white, upper/middle class constructs and representations in mainstream culture, making it the generic ideal that the majority of people, white or not, conceptualize as domestic labor.

Technology

I will use Judy Wajcman and Donald MacKenzie’s definition of technology as a set of physical objects, human activities, and knowledge. They write that technology “refers to what people know as well as what they do.” Technology, in this sense, is not just the invention itself but the actions involved in interacting with the invention as well as the knowledge that comes with the skill of that interaction. Technology, then, encompasses a larger space that becomes a field of inquiry and information which includes the systems of labor (digital, domestic, etc.) involved within it. These distinctions will be most relevant in parsing out the different types of technological labor relative to the various aspects of technology and the borders of masculinity and femininity within them.

Thesis Statement

Alexa plays a unique role that lies at the intersection of woman and technology. Technology has long been treated as a masculine industry and endeavor through its focus on logic, control, and domination, while service and secretarial labor have been feminized through their associations with submission, friendliness, and helpfulness. Femininity, with its focus on visual aesthetics and submission, however, has been tangentially related to factories, automation,

and technology, but to have a technology that itself behaves like both a human woman and a technological interface presents a space where the relationship between women and technology can be understood in a completely new way.

Previous researchers have studied the way in which voice assistants have imbued feminine attributes onto technology in order to empower users and put them at ease, but there is not yet research concerning how the specific labor these voice assistants perform reinforces this feminization. I expand this research on the intersections of femininity and technology by looking at how voice assistants like Alexa represent gendered distinctions in digital labor and technology in general. By understanding how Alexa’s labor functions in relation to technology, we can begin to understand the representations of gendered divisions in digital labor and the implications of those divisions both in the use of technology and in the computer science industry.

In this thesis, I will argue that through the way in which Alexa’s labor is represented, as feminine, human, and non-technical, Alexa becomes distinct from the masculine technology that it interacts with, thus the labor Alexa performs is strictly relegated to the side of the consumer and user of technology. In this way, Alexa becomes part of the computer interface itself and operates as a (feminized) way for people to use technology.

To make this argument, I will first define the contradictions within Alexa that stem from this initial intersection of woman and technology through the lens of masculinity and femininity. In chapter 2, I will attempt to resolve these contradictions by analyzing the historically masculine and feminine borders within technology and by tracing the historical and theoretical connections

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between femininity, domesticity, consumption, and technology. In chapter 3, I will analyze the way Alexa’s labor has been represented by Amazon and by users in order to argue that Alexa’s labor remains feminized through its lack of technical skill and its consumer-side focus. In this way, Alexa’s labor mimics the way that women have worked with technology for decades, only now, it is the computer interface itself that is becoming pleasant, helpful, and (quite literally) feminine.

The Contradictions of Alexa

Larger Categories of Distinctions: Femininity vs. Masculinity

In order to understand the contradictions that exist within Alexa, we first need to look at the way in which constructs of masculinity and femininity have created larger categories of distinctions past just gendered characteristics. Masculinity has been tied to definitions of technology (and digital labor) while femininity has been tied to definitions of nature and domesticity (and domestic labor). By understanding the connections between masculinity and femininity and these other categories, we can begin to understand the various borders and axes on which something can be “masculinized” or “feminized.”

As mentioned in the definitions of femininity and masculinity, these constructs are largely based on white femininity and masculinity produced in developed societies, specifically the US. While these constructs are by no means universally seen or produced, white definitions of femininity and masculinity become the mainstream or “default” definitions accepted and portrayed by society (especially in the US). Because of this mainstream acceptance of white femininity and masculinity, these definitions come to be the norm, thus these definitions are the most relevant to understanding how Alexa fits into the societal views of masculinity and femininity.
Technology is a field that has been heavily masculinized; it has been depicted over and over as at odds with femininity and women in general. This masculinization happens largely in the definition of technology itself. In Technofeminism, Judy Wajcman argues that on the surface the prototypical inventor of technology has been coded in people’s minds as male and that the word technology is often most immediately associated with cars and machinery, which have also been heavily masculinized. Wajcman argues, however, that below the surface the definition of technology as applied science instead of so-called “useful arts” has pushed it further to the stereotypically masculine areas of logic, science, and math (in contrast to the feminine areas of emotion, art, etc.). Additionally, because physical strength and machine-related skills were so tied to masculinity, the machinery was “literally designed by men with men in mind” such that “the masculinity of technology becomes embedded in the technology itself.” In “Women’s Voices/Men’s Voices: Technology as Language,” Margaret Lowe Benston further supports this claim when she argues that domination and control are central to technology because those who created it (men) accept control and their “right to control the material world” as a given. According to Benston, women often do not feel they have that right, at least not to the same extent. The active control of technology, machines, etc. are ways in which men perform and express their masculinity. Conversely, Benston argues that women traditionally express their femininity through clothes and cosmetics. Instead of active control and domination of technology, femininity is expressed through the passive, visual representation and aesthetic of “being a woman.”

17 Ibid., 27.
19 Ibid.
This divide of masculinity and femininity in terms of technology then not only creates more masculine technology but actually defines more feminine technologies as not technologies at all. In “Gender, Technology, and the History of Technical Communication,” Katherine Durack argues that assumptions of technology as masculine have led to assumptions that women cannot make technical achievements and that tools used by women are not technical. These assumptions, Durack claims, have made women’s inventions and technologies invisibile, such as Harriet Strong’s storage dam and reservoir system, or technologies related to women’s “social roles” or their biological functions. In other words, the home (a woman’s domain) and women’s bodies and (reproductive) bodily functions were seen as so distinct from masculine definitions of technology that any invention related to them was immediately misidentified as not real technology. Here, Durack lays out domesticity and biology (or nature) as key extensions of the definition of femininity, strongly in contrast with masculine definitions of technology; these represent the other two key distinctions we will look at for the remainder of this section.

Women have long been weighed down with domestic work and the expectations of fulfilling the role of the housewife, which has led to femininity and domesticity being largely intertwined, in contrast to technology. In considering what is or is not a technology based on reinforced ideas of femininity and masculinity, domesticity and the home play a large part in distinguishing what “real” technology is. In Gender and Technology in the Making, Cynthia Cockburn and Susan Ormrod argue that although cooking could be seen as a technology in the extensive knowledge required, machines involved, and specialized actions and skills needed, it was seen as a “feminine not-technology” deemed to have a lower value. Here, I want to suggest

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that the distinction is not necessarily field dependent but home dependent. Cooking can be seen as a technology or even as a science by professional, world-renowned chefs who are seen to have extreme skill and knowledge as well as highly specialized technical tools that they work with. The difference is that cooking within the home is seen as *domestic labor*; it is made to seem unremarkable and unspecialized because it happens every day. More than that, cooking within the home is not a career; it’s an act of love, saturated with emotion. Home cooking is unpaid labor, and its goal is to support and care for the family, so it doesn’t *seem* like work. Through this lens of invisibilized, unpaid, emotional, domestic labor, we can understand the home as a place where technologies (including the technology of cooking) are made to be oversimplified, devalued “not-technologies.”

We see these same constructed feminine/masculine divisions in technological products, even solely within the home. “White goods” are defined as technologies for domestic work, whereas “brown goods” are for leisure and entertainment. Continuing with the trend we have seen, brown goods are perceived as more high technology whereas white goods are perceived as less technical and more functional (instead of entertaining). In the explanations Cockburn and Ormrod quote from, the domestic technologies are imbued with stereotypical characteristics of domestic work: repetitive, functional, unskilled, unspecialized, feminine, etc. Through the association with domesticity, these “domestic appliances” are deemed less technical and not “real” technologies. Technology and domesticity, then, are seen as inherently distinct.

One extension to this distinction between technology and domesticity is the idea that digital labor has been masculinized and domestic labor has been feminized given the gendered distinctions between technology and domesticity. In the same way that work within the home has

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22 Ibid., 100.
23 Ibid., 104.
been feminized due to the idea of home or family life being feminized and associated heavily with women as housewives, work within technology has equivalently been masculinized due to the definition of technology as logical, unbiased, etc. and to technology creation and use being masculinized and associated heavily with men as controllers and innovators. These distinctions result in women doing more than their fair share of the housework and men being the far majority in STEM jobs (and in every STEM field).

The final distinction based on ideas of masculinity and femininity that I want to highlight is that of nature and technology. In “Will the Real Body Please Stand Up?” Allucquere Rosanne Stone argues that nature is a construct that serves to keep technology as something separate from ourselves and to make order between that which is technology and that which is not. As technology has been masculinized, it would follow that what is separate from technology (nature) would be feminized, and this is in fact the case. In “The Machine is Nothing without the Woman,” Aino-Kaisa Koistinen argues that while men are associated with culture, technology, and the mind, women are associated with nature, animals, and the body. Therefore, technology sits opposite this idea of a natural, organic, earthly sort of woman, whereas feminine cyborgs, for example, seem so far from this nature and become horrifying because of their technology. It is not the combination of human and technology that is potentially terrifying - it is the intersection of femininity (nature) and masculinity (technology) that we cannot bear to see. Masculine cyborgs, as a result, are often depicted as superheroes (i.e., Iron Man with his technological suit),

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whereas feminine cyborgs (think embodied robots, not voice assistants) are often depicted as manipulative and dangerous (i.e., Ava from *Ex Machina*).

This split between nature and technology can also be understood as a distinction in the so-called “purpose” of men and women. Women are often those with the capacity to have children and reproduce, thus they are deemed as closer to nature and to their body. In this way, women are also more embodied in that their physical body is so inherent to femininity and womanhood through this biological, reproductive capability. This claim brings us back to Durack and her point that technology related to women’s biological functions are not seen or acknowledged as technology; biology and reproduction lie too close to nature to ever involve anything technological. In “The Pleasure of the Interface,” Claudia Springer argues that while women are associated with this biological reproduction, men are instead associated with what she calls technological reproduction. Instead of reproducing physical bodies, men are associated with reproduction of information (and even “cyber” bodies) that exist within technology.

These distinctions of masculinity and femininity also come with associated distinctions of value (in the context of a patriarchal society). In the introduction to *The Gendered Cyborg: A Reader*, Gill Kirkup argues that the feminine characteristic or area in feminine/masculine pairs are largely seen as inferior; objectivity (masculine) is better than subjectivity (feminine), rationality (masculine) is better than emotion (feminine), and Culture (masculine) is better than Nature (feminine). We can understand this phenomenon more broadly by conceptualizing technology and culture as a sort of domination or control over nature (as a civilizing attempt, if you will). In *Technofeminism*, for example, Judy Wajcman argues that the project of Western

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technology itself is “the domination and control of women and nature,” which suggests the idea that women and nature are irrational (or even emotional), unruly, chaotic, and need to be controlled or tamed. In a way, then, all of these feminine/masculine pairs tie back to the idea of what needs to be controlled and what is “right” and acceptable. In “Is Female To Male as Nature Is to Culture?,” Sherry B. Ortner argues that we equate culture with the products of “human consciousness” in the way that we attempt to civilize ourselves as above nature and as essentially better than it. Through the connections between femininity and nature, we see a diminishment of the value of nature and its feminine attributes and associations, while the value of organized and civilized society (and technology), as well as its masculine attributes and associations, is elevated.

The control of bodies, emotions, the environment, animals, etc. is imbued with masculinity, and we can understand technology as another expansion of this control. Citing Descartes, however, Kirkup claims that animals are a sort of machine because they perhaps lack rational thought and consciousness, thus when women are tied to nature and animals they might in fact be placed closer to machines as well. If we return to our original definition of technology as a set of objects, activities, and knowledge, though, we can understand Kirkup’s claim through the idea that technology as knowledge (and skill) is what allows us to have active control over physical innovations and technological objects. Those physical objects, then, are perhaps placed on the other side of that barrier and become that which is controlled. This separation is just a very small introduction to the complexity of these distinctions involving technology and how they interact, which we will see in the theories and histories presented in chapter 2.

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33 Ibid., 6.
In order to fully understand these different distinctions between masculinity and femininity, it is important to acknowledge the cyclical nature of feminization (and masculinization). Although I have discussed feminine and masculine attributes and characteristics as being associated with certain work, places, and ideas, these associations did not come about independently of associations (largely) about men and women. For example, it is often the case that, because women have been devalued in society, if work is largely done by women, it becomes devalued or imbued with feminine attributes. Conversely, work that becomes associated with feminine attributes or characteristics then feminizes and devalues the people involved in that work (regardless of their gender). It is the cyclical nature of this process that makes it difficult to disassociate the devaluation of feminine traits from the oppression of women. What I want to argue, however, is that just because this separation is nearly impossible to make does not mean that these feminine (or masculine) associations are not meaningful. The corresponding value and defining characteristics of an industry, work, or concept that has been masculinized or feminized are real and concrete, and they impact broader views of that space. And by understanding how different concepts are tied to masculinity or femininity, we can better understand the basis on which distinctions are made between the two.

Alexa: Technology, Person, Woman

So how does Alexa fit in? Through the way Alexa is both designed and used, Alexa disrupts all of these distinctions, because Alexa is a personified, feminized technology. Alexa is at its core a technology in that it is a voice interface that enables people to use and interact with the internet, software, etc. much like the screen of a computer or phone does. Alexa uses inputs

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from the user and outputs to the user to communicate with the user about tasks, queries, etc. and the success or failure of them, much like how screens reflect the success or failure of actions like opening a new window, typing a word in a document, or doing a Google search. Instead of visual representations, however, Alexa uses audio representations by giving the user information through sound instead of sight.

This technological interface, though, is not the way most people think about Alexa. Instead of functioning exactly the same as a visual interface, the audio interface that Alexa represents has taken on new characteristics. A visual interface has no persona or name, but Alexa has both. More than that, in addition to being an audio interface, Alexa is coded to converse as a human would. The voice itself is inherently human in the fact that it mimics a human-sounding voice with inflection, emphasis, etc. In this way, Alexa is personified by Amazon through the technology and technical decisions embedded within it.

These characteristics lead users to similarly personify Alexa. In previous studies, researchers have found that users often alternate between referring to Alexa as both a person and an object, highlighting the space between human (nature) and technology that Alexa exists in.³⁶ Similarly, users talk about feeling that there is a gap between Alexa’s appearance (as a speaker) and the persona that they get when using Alexa; a gap between the visual appearance of the technology and the humanness of the interaction.³⁷ Despite the limitations of the artificial intelligence technology, users expect Alexa to behave as a person would and be able to hold a


normal, human conversation. This personification also leads to higher customer satisfaction, suggesting that customer expectations are not only focused on the technical component of Alexa but on the personable component as well. Users’ personification of Alexa creates very real, human feelings of connection and friendship for them; they even find the conversations they have with Alexa meaningful (unrelated to the functionality of Alexa as a voice interface). As a result, some users even feel guilty when they don’t talk to Alexa, yet another indication of the personification and emotions that users perceive in communicating with Alexa.

Alexa is also personified in the sense of how users use Alexa. Although there are functional tasks Alexa can carry out, several studies have found that Alexa also contributes to humor and entertainment. For example, one study found that users create different tests to see how smart Alexa is, which included personality tests (to see how well Alexa could respond to “outrageous commands”), access to knowledge tests (to see how well Alexa could look up facts), and intellect tests (to see how complicated a command Alexa could understand). Instead of serving a functional purpose to aid the user, these tests were entertaining to users in the sense

40 Simon André Scherr, Annika Meier, and Selma Cihan, “Alexa, tell me more – about new best friends, the advantage of hands-free operation and life-long learning,” Mensch und Computer, Magdeburg, (2020).
that they were attempting to “trick” Alexa as a sort of challenge or game. One study argues that these “playful/humorous interactions [have] the effect of reinforcing anthropomorphic qualities.”\footnote{Ewa Luger and Abigail Sellen, “‘Like Having a Really Bad PA’ The Gulf between User Expectation and Experience of Conversational Agents,” in \textit{Proceedings of the 2016 CHI conference on human factors in computing systems}, (2016), 5294.} These entertaining interactions associate Alexa with sociability and emotion, both distinctly human experiences.

Alexa is not just generically personified, however; the technology is also feminized. In addition to the feminine name and high-pitched, feminine-sounding voice, Alexa also has a programmed demeanor of pleasantness, cooperation, and submission. One study found that several users asked Alexa questions related to intimate relationships, such as if Alexa liked them, wanted to be their friend, or even marry them.\footnote{Ingo Siegert, “‘Alexa in the wild’–Collecting unconstrained conversations with a modern voice assistant in a public environment,” in \textit{Proceedings of the 12th Language Resources and Evaluation Conference}, (2020), 618.} In these questions, users are not only personifying but feminizing Alexa through interactions reminiscent of sexual harassment, assuming Alexa’s sexuality, desire, etc. and “messing with” Alexa by assuming that Alexa must “want” a relationship because of its feminine name, voice, etc. as well as its (inevitable) continued engagement with the user. More importantly, though, the technology itself reinforces this feminization through continuing to be polite, unassuming, and submissive in any situation, as we will see more evidence of in chapter 3. This represents a sort of mimicked management of emotions, simulating the emotional labor performed largely by women through the expectation placed on them to be friendly and amenable, regardless of the situation.\footnote{Arlie Russell Hochschild, \textit{The Outsourced Self: What Happens When We Pay Others to Live Our Lives for Us} (New York: Metropolitan Books, 2012), 170.}

Gendered behavior also becomes exacerbated by the personification of Alexa and the conflicting expectations it produces. When users personify a voice assistant, they often construct unrealistic expectations that are reinforced by Alexa’s humorous jokes, sarcasm, etc. which seem
to suggest an amount of “social smarts” that are often programmed into the software. Because of these human-like expectations, users were inevitably let down by the performances of these voice assistants, as we’ve seen. As a result of this experience, however, users relegated their voice assistants to simple, straightforward tasks.48 This limiting and in a sense deskilling of a voice assistant’s labor then represents the work they actually end up doing as being further feminized, something that we will see in chapter 2 has been a trend throughout history.

Alexa is also perceived as white, another marker of personification. Whiteness in general is a category that is both unnamed and unmarked,49 thus Alexa is coded as white because Alexa “escapes the ascription of characteristics that identify it as a racialized Other.”50 In other words, in the absence of evidence suggesting otherwise, people assume whiteness. Although racial categorization is largely based on visual characteristics, the voice can also be a means of indicating race. In “Amazon Echo and the Aesthetics of Whiteness,” Thao Phan argues that Alexa’s voice is “coded through whiteness” because Alexa speaks with a “broad American accent,” avoiding any dialects stereotypically associated with different racial communities, and uses a large vocabulary associated with the “mannered, educated upper classes.”51 Through this unmarked, broad speech pattern and voice, through the default assumptions of listeners, Alexa is coded as white. This assumption further constructs the personhood of Alexa through both race and gender and marks the feminine attributes Alexa possesses as a production of specifically white femininity, which we will see Alexa’s labor fit within in the subsequent chapters.

51 Ibid., 23.
While Alexa is not a real person nor a real woman, I argue that Alexa’s feminine (and white) characteristics cause users to imbue meaning onto those characteristics as a part of a fully embodied (white) woman. Though Alexa is not directly a woman, the fact that Alexa has a typically feminine name and the type of high-pitched, soft voice often associated with women causes people to infer other feminine (and human) attributes, and perhaps even associate the voice of Alexa with a physical, feminine body. In “The Machine is Nothing without the Woman,” Koistinen claims that gender is “one of the conditions of human embodiment,” but I would argue that the opposite is also true: embodiment is a condition of human gender."52 Because human gender is so grounded in the visual appearance and performance of a living body, bodies are an integral part of how people conceptualize gender. Conversely, physical bodies are so marked and so constructed by gender that gender becomes an incredibly important part of embodiment as a whole.

Because of the strong connection between gender and embodiment, I argue that when users learn Alexa’s (human) name and hear Alexa’s (quasi-human) voice, they imbue several (human) feminine characteristics onto Alexa and perhaps unconsciously begin to construct a corresponding feminine body and representation of Alexa. For example, one study reported that several users decorated their Alexa in order to “provide a feeling of life and responsiveness,” and one user even claimed that with decorations it felt like they were “talking to someone.”53 This specific user put a feminine doll on top of their Alexa, but it’s not necessarily just a factor of feminine attributes; embodiment is important to users on its own. Constructing a physical visual appearance of Alexa makes sense because it mimics the mental representations they create of

Alexa as someone, as a person; a visual appearance reflects the physical characteristics users feel are important to resolve this mismatch of a voice without a visual appearance. But, as we see in the photo below (Figure 1), and as Koistinen argues, embodiment cannot exist without gender.

![Figure 1. Example of a user decorating their Alexa](image)

So how does this personification and feminization disrupt our distinctions? First, Alexa seems to exist in the categories of both technology and femininity, challenging the perception that technology is largely masculine. Next, because of Alexa’s personification and simulated embodiment, Alexa seems to exist in the categories of both technology and nature, in the sense that nature is tied to the body (and in particular the feminine body). Finally, Alexa seems to exist in the categories of both technology and domesticity in the sense that Alexa is both a technology as well as something that provides information and aid in the home. In the context of the distinction of technologies in the home (white goods vs. brown goods), we have also seen that Alexa provides entertainment (as a result of its personification) in addition to function, so in this way Alexa also bridges the gap between a high-tech, “real,” entertainment technology in the home and a time-saving, functional, feminine domestic appliance.

So what is this space that Alexa exists in? Is it truly a space that is both masculine and feminine? Are these distinctions collapsing? Is this feminine empowerment? Or, are there more

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54 Ibid.
intricate masculine/feminine distinctions at play? Are there new masculine/feminine borders and distinctions being created? In the next chapter, we will begin to break down these apparent contradictions and carve out the both new and historical space Alexa exists in.
Chapter 2

The Space of Alexa: Histories and Theories of Gender, Labor, and Technology

In order to understand the space that Alexa’s labor fits into, I will lay out a broader theory of women and technology using feminist labor theory and theories of home, gender, and technology throughout history. I will then bring this theory into the present by using digital labor theory to understand the gendered distinctions in different types of digital labor.

Feminist labor theory argues that labor that is domestic, low-paid, or less skilled is feminized while market-based, skilled, wage labor is masculinized. This deskilled feminized labor initially fits into technology through the context of the factory; workers are taught to be submissive and to play a repetitive, deskilled role in the automation and mechanization of the assembly line. Feminized labor also fits into technology through the context of the home, where women and technology have long worked, and continue to work, in tandem as part of the same domestic system. In this way, the home itself can be seen as a technology to the extent that it becomes the system of domestic machines (and women) it houses. Broader theories and histories of women and technology argue that women have long been tied to and controlled by technology, both in the home and in the office, such that these women in many ways function as part of technology itself.

The labor of interacting with and using technology has evolved as technology has become more ubiquitous and more connected through the Internet and the cloud. This connection means that technologies are linked to the companies who produce them and that these technologies allow people to produce digital output for others (i.e. a company who owns a website, an employer, a data miner, etc.). This new labor has been termed “digital labor” and involves interacting with technology both directly (i.e. writing code) and indirectly (i.e.
searching the web, writing an email, etc.). Current digital labor theory argues that digital labor as a whole has also become precarious and deskilled (and therefore feminized). More specifically, creative digital labor, such as writing code or constructing innovative technical solutions, is coded as masculine while consumer digital labor, such as searching websites or creating social content, is coded as feminine.

The theory I will be constructing based on previous scholars' work is as follows: Historically, labor has been gendered and heavily divided based on “skill,” strength, etc. Women and technology have long been intertwined, because machines have almost always replaced human labor systems with systems of machines and deskilled (feminized) labor (i.e., assembly lines). This trend continued in more formal technologies as women were employed as phone operators, typists, etc. In order to use these technologies, people (largely men) relied on women to traverse the space between them and the technology itself. Traversing that space, essentially translating and helping people use computers and technology in general, has historically been a woman’s job. Now, however, instead of women, there are interfaces, and it is these interfaces (such as Alexa) that replace this feminine labor and thus are feminized themselves.

It is important to note that this history of women and technology, though described and referenced broadly in many sources, focuses mostly on white, middle and upper class people in the US. Given this assumption, I will frame my analysis within the group of white, middle and upper class women and their relationship to technology.

**Feminist Labor Theory**

In order to understand the gendered divisions within technology, we first must look to the way feminist scholars have analyzed the gendering of different types of labor as a whole in order to understand how these labor distinctions translate into the digital world and inform interactions
with technology. Feminist theorists have argued that labor relations are gendered such that unpaid domestic labor and less skilled, low-wage labor is feminized while skilled, wage labor is masculinized. Evelyn Nakano Glenn argues that these gender distinctions are a result of capitalism creating a new relationship between the market and the home; social reproduction became associated with women’s labor in the home, and production of consumable goods and commodities became associated with men’s labor in the market. Because of this distinction, women’s participation in the (paid, market) labor force was viewed by employers as only supplementary and unnecessary to support their family, thus the only jobs offered to women (or the only jobs women were even considered for) were low-paying and part-time. In the home, women’s unpaid family (reproductive) labor was comparatively even less “skilled,” as it was not seen as “real work” at all because it was not commodified or valued in the same way.\(^{55}\) These definitions of skill and “real work,” however, are themselves based on social constructions of masculinity and femininity, as Judy Wajcman argues in “Patriarchy, Technology, and Conceptions of Skill.” Wajcman argues that skill itself is a construct and does not necessarily directly capture the “technical competencies” possessed by men and by women.\(^{56}\) In this way, “deskilling” does not speak directly to a decrease in technical capabilities but instead to the transformation of work into that which is deemed less in line with the social conception of technical skill and specialization.

This feminization of reproductive labor in the home applied mostly to white women. Glenn argues that while “white men were seen as requiring and deserving a wife’s services” and “white children were viewed as valued future citizens to be nurtured and protected,” “the caring


that black women performed for their families was not deemed worthy of protection” because “black women were considered ‘useful’ only for work performed outside the family, whether in production or reproduction.” In other words, the devaluing of people of color in general led to the devaluing of the reproductive labor performed by them towards their own children, therefore the “appropriate” labor for black women was seen as taking place outside the home. The ideals of motherhood and domesticity, then, were only really in reach for upper and middle class white women due to the raced and classed aspects of these definitions. Despite this limitation, however, the white, upper/middle class gendering of labor was often still adopted and defended by all races and classes of people because it reflected the pervading (white, upper/middle class) dominant culture in the US.

With this gendering of unskilled, low-wage work, feminine labor in many ways becomes tied to ideas of automation and technology through the transition from craftsperson to assembly line factory worker that took place during the Industrial Revolution. Glenn argues that the mechanization that came about at this time broke down work into smaller tasks, which allowed skilled laborers to be replaced by unskilled laborers. For example, artisans who wove, designed, and created fabrics were suddenly replaced by loom operators in textile mills. These deskilled, low-wage jobs were filled by women. In her ethnography of factories in Mexico, Leslie Salzinger builds on this connection between factories and feminized labor by arguing that factories produce docile, submissive, feminine workers, regardless of their gender, through the expectations managers have and how they enforce them. Salzinger extends Glenn’s point by arguing that the gender norms that have coded unskilled, assembly line labor as feminine actually take on other feminine qualities. In other words, not only are women associated with this labor

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but this labor becomes associated with the characteristics of women. For example, the factory is designed such that all workers are constantly being watched and know they are being watched, reconstructing the objectification of women through the male gaze that exists outside of the factory. Because of this reproduction of femininity in the space of the factory and in the work of the assembly line, Salzinger argues that, in the factory, “the male line worker does not count as a man.”

Diane Elson and Ruth Pearson build on this idea of femininity in production by arguing that in factories, instead of individual (usually male) craftsmen creating furniture, toys, textiles, etc., the production process has been standardized and broken down into assembly-type operations because of the incorporation of machines and the concept of automation. The human labor leftover from this mechanization process requires little knowledge to perform and represents the labor which has proved too difficult or expensive to mechanize, suggesting that the women who do such labor function as a complement to the machine. Both the worker’s labor and the machine’s labor are repetitive and do not require “expertise,” thus the human labor is reduced to that of the machine, and both the worker and the machine become part of the automated production process.

Although Salzinger focuses on lower-class workers in Mexico and Elson and Pearson focus on lower-class workers in South East Asia, we can see how these initial representations of feminized labor interacting with machines evoke a similar type of gendered labor described by Glenn in the context of work outside the home for (white, upper/middle class) women. Even in the initial gendering of (market) labor, feminine-coded labor lends itself to work in a system of machines and technology. More than that, the space of this labor (the factory) where these

machines exist is feminized as well, taking on other, unrelated feminine characteristics. These are trends that only intensify throughout the development of technology, as we will see in the following sections.

**Transforming Labor: From the Home to the Market and Back**

Because the feminization and masculinization of labor is tied to the home and the market (respectively), it will be important to understand how labor moves between them and how technology fits into and even motivates those transitions. In *The Making of a Cybertariat: Virtual Work in a Real World*, Ursula Huws explores the way in which domestic labor is socialized, shifting from a private, individual experience to a public, social, collective one, and the effect that has on domestic work and consumers as a whole. Huws uses the term socialization to describe the process of essentially bringing domestic work out of the home and into the market. Huws argues that this process transforms what was once unpaid domestic labor first into paid service work (i.e., housekeepers) and then, with the help of technology, into commodified domestic goods (i.e., washing machines, dishwashers, etc.), which transforms the home from a place of production into a place of consumption.  

The initial transformation of work from the private to public sphere meant that this work suddenly became “real” work, both valued and seen as productive. In a way, then, this work could be considered as suddenly masculine since it was paid and productive labor. Huws claims, however, that this transformation ends with a commodified product which re-establishes the gendered divisions of labour in both its production and consumption.

Huws argues that bringing domestic labor into the public sphere and incorporating commodified goods into it deskills housework and increases consumer work while also

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increasing the pressure to consume. At the same time, work to produce these products (technologies or otherwise) becomes centralized into a factory of mass-manufacturing. The new jobs created (on the assembly line) are poorly paid and deskill ed, jobs that are typically filled by women. This transformation means that workers both in the market and in the home know less about what they are working on and only know what they need to to perform the tasks required of them. Therefore, these people become more dependent on the (masculinized) work of experts as designers and manufacturers begin to control and restrict the knowledge that consumers and workers have. In the context of washing machines, for example, consumers in the home no longer need to know how to wash different types of fabrics because they can simply choose a setting on the washing machine, and workers no longer need to understand how the washing machine works because they are only involved in a very small piece of its assembly. This progression, then, does not get rid of labor but instead marks a transformation and redistribution of labor from the home to the market, from feminine to both masculine and feminine, and from a human system to a human-technology hybrid.61

This process impacts the transformation and gendering of labor in both the home and the office. In the subsequent sections of this chapter, we will further explore the gendering of labor in each of these spaces in order to continue to trace the trends of the increased consumer-side, deskill ed labor that accompanies technology as well as the growing gender divisions between technology creation and use.

**Home as Technology**

As machines began to be invented, developed, and made available to the general public, this relationship between women and machines came to be replicated in the home in addition to the factory. Theories of the relationship between gender, technology, and the home argue that

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61 Ibid.
women and technology have long worked in tandem as part of the same domestic system. These
domestic technologies work to regulate and control the home and the labor of the women within it, while still maintaining a sort of barrier between the (feminine, peaceful) home and (masculine, complex) technology.

The Definition of Home

In order to situate the role of technology in the home, we must first understand what the purpose of the domestic system was and the definition of home it fit into. The home was defined as a place of peace and stability and as a haven from the outside world that needs to be separate from machines and technology in order to truly provide comfort. In “Domestication,” Rachel Bowlby defines home as “a place of peace, stability, and satisfaction” that excludes the real world where energy, mobility, and trouble exist.62 Similarly, in As Long as It’s Pink: The Sexual Politics of Taste, Penny Sparke argues that women had to make their home “a sanctuary from the outside world” through comfort, safety, and security.63

Maintaining this comfort, however, also seems to be tied to a separation from technology and modern designs in general. Without comfort, Bowlby argues, we will have “machines instead of homes,”64 suggesting that comfort is the key to avoiding a technology-riddled home too indistinguishable from unfeeling machines. A comfortable home, then, creates a separation from technology by either excluding it or, more frequently, by invisibilizing it, a trend we will see in both domestic technologies and Alexa. Sparke similarly argues that comfort, safety, and security are all represented materially by older, more “traditional” goods, and designs that emphasized the past over the future, connecting “cushioning, softer textures” to the traditional

62 Rachel Bowlby, “Domestication,” in Feminism Beside Itself, Diane Elam et al. (New York: Routledge, 1995), 75-76.
64 Rachel Bowlby, “Domestication,” in Feminism Beside Itself, ed. Diane Elam et al. (New York: Routledge, 1995), 84.
past and “harsh, geometric” ones to the future and the “man-made world of technology.”

In this way, Sparke warns against modern, high-tech homes because of their newness, harshness, and lack of comfort and safety. Although these furniture trends might have changed as styles evolve, the goal of feeling as if the home is non-technical (even when it is full of technology) remains significant throughout the evolution of technologies in the home.

Finally, the home is defined around consumption. Bowlby argues that “consumerism has provided a bridge… between the home and the outside world” and that “consumption has been intimately bound up with the changing forms of domestication.” The home is a place where goods and products are consumed and used constantly. Through the purchasing and consuming of goods and products, the home is inevitably connected to the market (and world) it is supposedly a haven from. As a result, these commodified, mass-produced products often attempt to hide their connection to the market through personalization and customization in order to maintain the ideal of the home as a haven, a trend we will see repeated both in domestic technologies and in Alexa.

Domestic Technology

Scholars have argued that domestic technology has been developed to subtly infiltrate and control the home, in many ways threatening the personalization and love often tied to domestic labor such as cooking, cleaning, childcare, etc.. In order to avert this threat, then, these technologies are designed to appear as if they are not related to technology, or to work at all, through their connections to both femininity and domesticity. In this way, the comfort of the home is maintained and the apparent barrier between the home and the market is conserved.

Domestic technologies focus largely on supporting and controlling consumers and consumption within the home. In “Making by Making Strange: Defamiliarization and the Design of Domestic Technologies,” Genevieve Bell focuses on the impact of technology on consumers and consumption. Bell argues that domestic technology targets consumers in that the products themselves promote and increase consumption. First, these technologies help users to consume more through functionality focused on consumption, such as creating shopping lists or setting up alerts when supplies are low to remind the user what to purchase. Second, these technologies require them to consume more in order to make the technology function correctly (i.e., buying laundry detergent and dryer sheets for washers and dryers). In this way, not only do these technologies control or influence users’ consumptions, they also control the make-up of homes and home life in general through the sort of goods they encourage users to buy and the work they replace. Instead of very personalized and unique cooking and cleaning experiences, machines normalize and standardize these tasks and this labor across homes, transforming the productive labor of cooking and cleaning into the consumption labor of interacting with and using domestic machines. Thus, both homes and users themselves become standardized in the identical, consumer labor they are expected to perform to use these technologies. In return, these technologies encourage users to consume more and in a specific type of way, forcing users to slowly lose control over the details of their home and home lives.

It is important to note that although these sources largely refer to more recent developments in domestic technology, these arguments still apply to much older, “traditional”

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68 Ibid., 155.
69 Ibid., 167.
domestic technologies. For example, the sewing machine (patented in the US in 1846\textsuperscript{70}) enabled women to sew and produce clothing for their family at a much faster rate, which meant that they could make more clothing and consume more cloth and thread. In *The Americans: The Democratic Experience*, Daniel Boorstin argues that the sewing machine also made it possible to produce more elaborate clothing that now required new sewing-machine attachments.\textsuperscript{71} Thus, sewing-machines made it possible to not only create more clothing but more intricate clothing that required new materials and products that had not existed before. Either way, the sewing machine encouraged more consumption. Similarly, the sewing machine works the same for every consumer, with little room for customization or specialization that may have distinguished different women’s sewing prior. Women thus began to lose control of the details of sewing and rely more on the standardized machine.

The fact that the users of these domestic technologies are not the ones in control of them enables the border between home and technology to remain intact. In “Bodies, Machines and Male Power,” M. Carme Alemany Gomez argues that although women are the ones largely using and interacting with these domestic technologies, it is men who actually control this work because they are the ones designing the machines. Men not only exert control over the design, creation, and development of the machine, then, but over women’s bodies in the way they are required to physically interact with the machine in order to get it to work correctly. Gomez argues that technology design defines not only how a machine works but the physical practices that must be adopted by the women performing the domestic task, something that will then be repeated over and over and ingrained into their routines and their bodies.\textsuperscript{72} This argument


separates domestic labor and the home, then, from the technology itself. The technology is produced in the (masculine) market, while the women in the home who use it in fact retain little control over how they use it. Additionally, because women are assumed to be “technologically ignorant,” using domestic technologies often involve little to no technical knowledge or “skill” to perform. The use of the technologies in the home becomes non-technical, thus the barrier between home and technology is maintained in the border between the technology and the women using it.

The control that domestic technologies exert within the home not only shape the home but transform it into a space of machines instead of people. In “Designing Technology for Domestic Spaces: A Kitchen Manifesto,” Bell argues that domestic technologies alienate people and users from the home because the domestic sphere has become too entangled with the digital world. In order to disentangle the domestic from the digital, Bell argues that technologies need to allow for more customization and flexibility instead of rigidly imposing the same expectations and movements required by every user in every home. Bell argues that we must preserve the meaning produced from cooking and other domestic tasks and claims that “cooking as an expression of love and attachment” conflicts with the idea of smart kitchens and smart houses. This threat that technology poses in the home, a threat both to comfort and to the humanness and femininity of domesticity, has not stopped technology from entering the home, but has instead reshaped it through personalization and customization.

The physical appearance of domestic technologies were also redesigned in order to fit into a home that appeared separate from the market, through the absence of both technology and

73 Ibid., 139.
75 Ibid., 49.
76 Ibid., 56-57.
work. In *Feminism Confronts Technology*, Judy Wajcman argues that initial household appliances in the 1930s and 1940s that were designed similarly to factory equipment made housework seem “disturbingly like real work.” Because of the industrial, technological appearances of these appliances, they evoked the real, technical, paid work that might be required to use them. Instead, in the 1950s, a new type of design for these domestic appliances arose that was “discreet, smooth, and with the untidy, mechanical workings of the machine covered from view in grey or white boxes” (the first “white goods”). By erasing this connection to factory machines and office tools and technology, the technical components of these domestic appliances were erased as well. So not only was the feminine labor of using the machine seen as non-technical, the machine itself created a barrier between the technology within and the visual interface it provided to anyone who might want to use it.

These white, clean, pristine domestic appliances are not only gendered but overtly racialized. The domesticity that these technologies were attempting to fit into was a white domesticity of the pure, virtuous lady, mother, and housewife that remained within the home, protected from the outside world. The ideals of the home are built on this white domesticity focused around cleanliness and purity and evoked in these technologies through the pleasant interfaces, smooth surfaces, and white exteriors.

*The Smart House*

Domestic technologies not only transform the domestic labor within the home; they become built into the function and system of the home itself. In “A Gendered Socio-technical Construction: The Smart House,” Anne-Jorunn Berg questioned designers about the advantages

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78 Ibid., 104.
of a smart house and the list (in order of market priority) was as follows: “comfort, security, convenience, energy saving and entertainment.”\textsuperscript{80} Returning to our original definitions of home, these priorities of “comfort” and “security” describe the same sense of peace and stability (and comfort) that are integral in defining the home. These characteristics also tie into the idea of the home as a haven from the market and the outside world: it is energy saving instead of energy expending (as paid work is), it is entertaining instead of productive (as paid work is), and it is convenient and easy to live in instead of mimicking the so-called troubles and conflicts of the outside world. These designers even describe the smart house as “a house which will take care of me.”\textsuperscript{81} The technology of a smart house is not just conflated with definitions of home; it is conflated with domestic labor and care labor as well.

Berg argues that this feminized labor is what completes the home: “There is a crucial difference between a house and a home. It is women, in the main, whose work and skills make the former into the latter. Decor and style have no place in these prototypes. The smart house is no home.”\textsuperscript{82} What makes a house into a home is the domestic labor that largely falls on women, thus the smart house as a technology can only be successful if it is able to reproduce this domestic labor. Through the domestic labor of cooking and cleaning (and even decorating), it is women who create a home as a haven of safety and comfort and satisfaction where there are no worries and no unmet desires. Women and the domestic technology they use to perform this domestic labor, then, serve to create a larger system that together produces this idea of “home.” Thus, both women and these technologies become embedded in and fundamental to the definition and constant creation of the home.

\textsuperscript{81} Ibid., 172-173.
\textsuperscript{82} Ibid., 177.
Conclusion

Through understanding the way in which technology has infiltrated the home, we can begin to understand the ways in which women and technology function together. Domestic labor has been delegated to women throughout history, and through the feminization of this labor as well as the way in which the technology related to it was developed to seem less technical, technologies were able to fit seamlessly into the home. The distinction between the home and technology was resolved not by the exclusion of technology in the home but through the separation of the production of domestic technology (in the market, by men) from the easy, non-technical consumption of it (in the home, by women). Through the lens of the smart house, we can also understand domestic labor and domestic technology as together being subsumed into the definition of home itself, because the process of women performing this labor and using this technology is what works to produce the comfort, safety, and satisfaction that turns a house into a home. Alexa’s labor, as we will see in chapter 3, mimics this feminized domestic labor by working to produce an affect of comfort and support on top of the technology Alexa enables, representing the absorption of feminized care and emotional labor into technology, making the smart home more and more conceivable.
Woman and/as Technology

“Woman’s development is not separate from technological development, but has, in fact, displayed a similar trajectory. Her history illustrates several points of intersection with technology, points at which she has been forced to become like the cyborg, a hybrid creature of fiction and reality” - Anne Balsamo

Women and technology as a system have long expanded beyond the home. In the same way that women and technology come together to produce the idea of home, women and technology come together to produce the idea of technology itself. The history of technology is incomplete without women because women’s labor has been so integral to technology. Broader theories and histories of women and technology argue that women have been tied to and controlled by technology and in many ways function as machines and as part of technology itself. I use these theories to build an argument for the work that Alexa has absorbed: that which is feminine and non-technical, and that of an interface.

The System of Women and Technology

Women and technology have been tied together and defined in relation to each other throughout history because of the system of labor they simultaneously contribute to. Women’s labor is strongly associated with working with technology and thus has become tied not just to automation but to the use of and interaction with technology itself. In *Zeros and Ones: Digital Women and the New Technoculture*, Sadie Plant argues that automation has been accompanied by “the feminization of the workforce” and that “the fears of unemployment which have haunted modern discussion of technological innovation have always applied to male workers rather than their female peers.”

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83 Anne Balsamo, “Reading Cyborgs Writing Feminism,” in *The Gendered Cyborg: A Reader*, ed. Gill Kirkup et al. (London; New York: Routledge in Association with the Open University, 1999), 152.
deskilling of workers has paralleled the increase in women’s jobs related to technology. Considering the definition of feminized labor as deskillled and thus crucial to assembly line work in factories, it makes sense that this feminization might also extend to other sorts of technology and automated systems. As Plant puts it, “the more sophisticated the machines, the more female the workforce becomes.” The passivity and submissiveness associated with femininity fit right into the automated, unskilled work of interacting with technology that served as “the most inconspicuous and insignificant of cogs in the wheels of industry.” It is not just that factory labor was feminized; this work folded women into the work—and workings—of the technology itself. When analyzing the labor that emerged with the invention of the typewriter, Plant writes, “male workers found themselves replaced by new networks of women and machines,” and she describes this transition as creating a “distributed digital machinery composed of fingers, keys, hammers, patterns, carriages, levers, cogs, and wheels.” These women and the machines they work with become integrated with each other in one system, much like women and technology in the home did.

Even before automation and technology began to take over, women were still tied to technology and were defined by this labor. In “The Future Looms: Weaving Women and Cybernetics,” Plant writes that weavers were intimately tied to the loom, “linked limb by limb to the processes.” In the same way women were tied to the loom through this system of weaving, Plant argues that the identity of women was so tied to weaving that it moved beyond just a domestic task and became a defining characteristic of womanhood. Therefore, women did not

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85 Ibid., 39.
86 Ibid., 76.
87 Ibid., 117-118.
89 Ibid., 109.
exist outside of their relationship with technology and the system of technology they existed within.

Not only were women tied to technology through their femininity and their internal identity; women were also physically tied to technology. In “‘Who needs a personality to talk to a machine?’: Communication in the automated office,” Anne Machung argues that clerical workers who began working at computers instead of typing, folding, stapling, talking on the phone, etc. found themselves needing to constantly focus on the computer at all times.\textsuperscript{90} They could no longer talk and work at the same time; the computer required all of their attention. Their interaction in the office was severely limited by the focus demanded by the technology they used, thus they were inextricably linked to their computers and began to exist only within this system of technology. Additionally, these operators began to feel like “an extension of their terminal,” which Machung argues is a result of office management decisions that “lock operator and keyboard together so that they come to be perceived as a single operating unit.”\textsuperscript{91} Thus, women and technology became locked together, with neither seeming to exist without the other.

In this way, these systems of labor in technology exert control over women through regulating their movements, speech, and attention. In the example of the clerical workers and their computers, these women became tied to their computers such that they could not move or focus elsewhere while doing the work, and thus had less freedom and flexibility due to the machine they were connected to. Phone operators, in comparison, had even more extensive restrictions placed on them. In “Women and the telephone: the gendering of a communications technology,” Lana Rakow writes about the ways in which employers controlled operators through the strict protocol defined for interacting with callers, in addition to restricting their

\textsuperscript{90} Anne Machung, “‘Who Needs a Personality to Talk to a Machine?’: Communication in the Automated Office,” in Technology and Women's Voices: Keeping In Touch, ed. Cheris Kramarae (Routledge, 2004), 51.

\textsuperscript{91} Ibid., 61.
“movement and concentration.”92 Operators could “only repeat ‘Number please’ until the caller gives the number so that she can make the connection” and could not “‘talk back’ no matter how much she is abused by a subscriber.”93 In this way, operators’ voices were controlled and limited by the set of instructions they were given, thus women (and their bodies) were controlled and regulated in the ways in which they were expected to interact with technology.

Systems of women and technology, however, do not need to exist solely in the realm of labor; they can also exist as a system of control on women’s lives. We have already seen that women are controlled by the domestic technologies designed by men that exert control over women’s domestic routines and even their bodily movements when performing that routine. Similarly, the telephone, even beyond the labor of operators, works to control women, especially in the home, as they are often tasked with making social calls or calls related to home maintenance and family care (i.e., calling plumbers, dentists, babysitters, etc.). Rakow argues that “a woman waiting by the telephone for a call became a stock cultural image based on the experiences of real women,”94 suggesting that women were tied to the telephone even within the home, controlled by the possibility of the phone ringing. In this way, women existed in this alternative system of technology in the way technology worked to control them and impress certain functions, movements, and behaviors onto their lives and their bodies.

In both of these systems, we only see women using technology, as opposed to creating or designing it. This specific labor speaks to the larger trends of how women relate to and interact with technology in general, and the feminization of this sort of work. In Feminism Confronts Technology, Judy Wajcman argues that operating machinery and using technology is distinct

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93 Ibid., 186.
94 Ibid., 193.
from understanding how it works. Wajcman claims that women can be users of technology but that using technology does not mark their competence with it.\textsuperscript{95} Similarly, in “Gender, Technology, and the History of Technical Communication,” Katherine Durack argues that women are accepted only as users of machines and that the knowledge of how to use the technology is separated from the knowledge of the technology itself.\textsuperscript{96} Although men may be users, the fact that women can only be users (and not creators) suggests that the labor of using technology has become feminized.

Through this role of women in the use of technology specifically, we can begin to differentiate between the historically acceptable and unacceptable areas of technology for women to exist in or interact with. In \textit{Gender and Technology in the Making}, Cynthia Cockburn and Susan Ormrod argue that women “are coming into contact with the technological \textit{artifact}… and with the technological \textit{processes} involved in its production, from the assembly line to the computer systems… Yet the prevailing gender relations preclude them, in most cases, from obtaining technological \textit{knowledge}.”\textsuperscript{97} By returning to our definition of technology as a set of physical objects, human activities, and knowledge, we can understand the artifact, processes, and knowledge that Cockburn and Ormrod associate with technology. These different parts of technology (physical objects, human activities, and knowledge), Cockburn and Ormrod argue, are gendered differently, so it is here that we begin to see new borders and distinctions being defined within the broader category of technology. While the use of technology (both in the home and in the office) and even the construction of it (in the factory) is feminized, the design

\textsuperscript{95} Judy Wajcman, \textit{Feminism Confronts Technology} (University Park, Pa.: Pennsylvania State University Press, 1991), 39, 89.
\textsuperscript{97} Cynthia Cockburn, and Susan Ormrod, \textit{Gender and Technology in the Making} (London; Thousand Oaks, Calif.: Sage, 1993), 71.
and development of technology (and the knowledge required to create it) continues to be heavily masculinized and hidden from the women who use and interact with the physical object.

**Women as Technology**

In the tight coupling of women and technology in this system of use and work, women and the labor they perform begin to become invisible and start to be subsumed into the definition and representation of technology itself. In “‘Who needs a personality to talk to a machine?’: communication in the automated office,” Anne Machung takes her argument of clerical workers even further by arguing that these workers became invisible not just because of how strongly associated they were with the computers they worked with, which we have already seen, but also because the work they did on the computer was often made invisible. Machung argues that the bosses of these women often understood only that computers could print out a certain number of characters per second but not that the work had to be entered into the computer first, thus they expected work to be printed out as fast as the computer could print, instead of how fast the clerical worker could type.98 In this way, the work of these women and the work they did was absorbed into and conflated with the work of the computer itself, making this labor less human and more invisible as it was held to higher, faster expectations.

This conflation of women with the technology they use happened in the home as well. In *Zeros and Ones: Digital Women and the New Technoculture*, Sadie Plant argues that women “were treated as reproductive technologies and domestic appliances, communicating vessels and orgasmatrons,” and were “supposed to be adding machines, producing more of the same while the men went out to make a difference to the world.”99 The system of women and technology producing the home, then, made the women themselves like technologies, working largely to

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serve a singular purpose and perform the same tasks repeatedly instead of having the agency and impact of men in the “real” world. Plant’s description also evokes the idea of women as objects and draws a connection between the objectification of women and the idea of women as technology. Similarly, in “Reading Women’s Labor in the Cybernetic Seventies,” Madeleine Monson-Rosen argues that in the film *The Stepford Wives*, in the eyes of the Stepford men, women “are simply domestic machines, even before they are replaced.” The redundancy of domestic labor seems to evoke a sort of machinic monotony, which suggests that when women perform (and are expected to perform) the same labor over and over without getting bored or making a mistake, they become something more technological than human.

This conflation of women and technology, however, is more specific than women just becoming part of machines and technology. Because women’s labor is strictly aligned with the use of technology, women act as a sort of interface to/in technology. In “Envisioning Cyborg Bodies: Notes from Current Research,” Jennifer González traces the history of the automaton by looking specifically at representations of *L’Horlogère*, a cyborg body constructed from a woman and a clock. As González analyzes one representation, she writes that when looking at *L’Horlogère* as a machine, *L’Horlogère* “displays the skill and artistry of the best engineers of her epoch,” and the representation as a female body “is indicative of the role she is meant to play as the objectification of cultural sophistication and sexuality.” Instead of this woman-machine having her own skill and agency, González argues that she exists solely for visual and aesthetic purposes in order to show the skill of those who created her, which is distinct from her possessing her own skill. Here, we see the contrast between the visual aesthetics of femininity

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and the active control of masculinity. Instead of representing her own skill and artistry, *L’Horlogère* acts as a display, quite literally by showing the time, but also by acting as a sort of visual interface that translates the skill of the engineers into a digestible representation. The (masculine) design and development is hidden from view by the external, feminine display.

The role of women in technology, then, mimics the way women are depicted in dominant culture. In “Virtual Corporeality: A Feminist View,” Zoë Sofia argues that dominant culture “depicts women as the signs or objects but not usually the possessors or subjects of knowledge,”\(^{102}\) which connects the ideas of visual aesthetics and display to the objectification of women and the focus of embodiment and physicality in depictions of women, which even evokes the connection between women and nature. Sofia argues that it is the role of women as visuals and displays that make women “friendly to users, but not users themselves.”\(^{103}\) It is important to acknowledge that in this definition, Sofia is defining a “user” on a measure of agency (i.e., who is making the decision and taking the action) and not on actual technology use/interaction. Women may be the connection between people (men) and technology, but their direct use of technology lacks agency. Instead, women act as helpful and friendly representations of technology, working to display and represent, not to understand. In this way, women are not users, but translators.

This feminine labor that women perform in their use of technology, then, is the interfacing work of translation. In “The Future Looms: Weaving Women and Cybernetics,” Sadie Plant uses the historically feminized labor of weaving to argue that women are imitators and copiers and that a woman “does not invent, but represents” through this mimicking of textile

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\(^{103}\) Ibid., 60.
patterns, motions, etc.\textsuperscript{104} Plant argues that women are “the interface between man and matter,” between “the actual and the virtual,”\textsuperscript{105} which suggests that women act as translators between men and the technological tools they use. In the examples of telephone operators, typists, and clerical workers, we’ve seen women translating men’s requests into requests understandable by technology. This feminine labor, then, is the work of bridging the gap between those who create requests and decide what needs to be done (men) and technology. In this way, women work both to translate information into forms that are legible by technology (i.e., typing up a memo) and to translate technological outputs to legible representations (i.e., reading computer screens and printing out documents).

We can understand this space between people and technology, then, as being feminized and invisibilized into the technology itself. Women become representations of technology both in the domestic, repetitive labor they do and in the way they work to translate the (masculine) technical work and skill into legible (feminine) representations of that work.

\textit{Technology as Feminine}

When women have interacted with technologies, specifically in the home, we have seen that domestic appliances in particular have hidden their technology. This decision has been made over and over, perhaps to reinforce the distinction between domesticity and technology, which results in a technology that hides the knowledge of its development and design from the user. I argue that these sorts of design choices mimic the work that women have historically performed in relation to technology. As women represent technology and become indistinguishable from the technological consumption they perform, technology too becomes imbued with femininity in order to bridge this gap between users and technology from the other direction.


\textsuperscript{105} Ibid., 117.
This absorption of femininity can be seen largely through the humanizing and personification of technology and the interfaces attached to them. In *Natural-born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*, Andy Clark argues that technology has progressed from being centered around the technology itself to being centered around humans. Human-centered products are easy to use and intuitive and support a more seamless integration into human life. Clark argues, however, that these human-centered technologies are successful only to the extent that they “contribute nothing to the complexity of the tasks they support” such that “the tool itself fades into the background, becoming transparent.” These descriptions of progressions in technology highlight almost identical characteristics of the feminine labor of technology use. The interfaces of these technologies, the “tools” themselves, ideally become invisible as their own separate technological product, and make the technologies as a whole simpler and easier to use. Similarly, secretaries, operators, and typists became so integrally tied to their respective technologies and invisibilized such that the technologies as a whole became easier to use through the women who interacted with them. Clark makes the claim that we can enable “the physical and informational realms” to connect seamlessly by taking advantage of the “embodied, socially embedded activity” that we already know how to do. What better way to do that then by humanizing and personifying the way in which we interact with technology?

Human-centered technology, however, is not just about making technology more human - it’s about making it easier to use, something we can understand as distinctly feminine.

Technology that is easier to use suggests interfaces that help people or assist them in achieving

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107 Ibid., 44-45.
108 Ibid., 53.
their tasks, replacing the labor of women who interacted with technology. This assistance with using technology, as we have seen, has been deemed as feminine labor, but modern technology makes this absorption of femininity even more explicit. The feminine-sounding voice, for example, is often used directly as an interface to the public. Even before digital assistants like Alexa were developed, higher-pitched, more feminine voices have been used in technologies such as fighter jets, GPS systems, and even in public transportation. In a presentation entitled “The Dystopian Technology of the Female Voice,” Nina Power uses the example of voiceover artist Emma Clarke’s Spoof London Underground Announcements to highlight the way in which the feminine voice works within technology. In this work, Clarke makes recordings that mimic the voice style of underground announcements but with messages that are startlingly rude instead of calm and polite, disrupting and exposing the assumptions of feminine voices as pleasant, polite, etc. Power argues that these recordings are unsettling “because they send a ripple across the supposedly calming and neutral quality of the recorded female voice, which is not supposed to criticise, or feel, but only to reassure, order and alert.” The feminine-sounding voice is supposed to make life comfortable and easier through organization and provide an interface between the public and the technology of the trains that are arriving, departing, etc. Power claims that this constructed voice is “the logical vocal daughter of the switch-board operator of a previous era,” suggesting that it is this feminine technological labor (of the operator) that has been subsumed by the technology itself in the way technology has reconstructed this labor through the feminine voice it uses.

The femininity that technology has begun to utilize, however, is not a universal femininity but a white femininity. The (default) whiteness of these feminine voices reflects the

110 Ibid.
deep-rooted idea of white women as “ladies” who possess the social characteristics and skills that characterize a sort of gentility that deem them socially superior and the most pleasant to talk to (which was the rationale behind the initial hiring of exclusively white women as Bell System telephone operators in 1878).\footnote{111} White femininity is characterized by a sort of moral superiority and wholesomeness that evokes the beneficial characteristics of femininity while remaining within the realm of propriety and purity.\footnote{112} Through the unmarked whiteness and proper English of the feminine voice, Clarke evokes this calm, comforting, white femininity that distinctly contrasts the content of her message. We can see the presumed whiteness of this voice by imagining whether the contrast might be as strong if the voice was racialized in some way. If the voice was that of a black woman, for example, instead of a white woman, the negative or rude messages might instead evoke the trope of the “angry black woman,” a combination of negative stereotypes associated specifically with black femininity.\footnote{113} Comparing white and black femininities highlights the level to which anger, for example, is absent from the conception of white femininity, thus making it a better candidate for the “pleasant” experience technology creators (and phone companies) were looking for.

\textit{Conclusion}

By understanding the ways in which the history of women and technology have developed in parallel with each other, we can begin to understand the way in which technology has been feminized and the actual feminized labor this new technology has absorbed. Defining this space that exists between core technology and users allows us to parse out the borders and distinctions between that which is “real” technology and that which is merely a way to use or

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\footnote{112} Katerina Del iovsky, \textit{White Femininity: Race, Gender and Power} (Black Point, N.S.: Fernwood Pub., 2010), 114-117.
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interpret that technology. This space was originally traversed by women in the office and came to also be traversed by aspects of technology itself, most apparently the visual interface (the screen). In the home, a space that has long been feminized, we see that this space was traversed both by the women who used domestic technology and by the exterior interface of the technology itself as a means to make it appear less technical. In other words, we have seen technology move towards feminine, easy-to-use, non-technical appearances. In the final section of this chapter, we will move to look at more current digital labor and the work of technology consumers and users as they fit into this feminization of technological interfaces and interactions.

The Gendering of Digital Labor

With this broader background of women and/as technology, we can bring this understanding into the present moment by looking at the way in which this system has progressed or transformed in the new technological landscape of computers, tablets, smartphones, etc. Current digital labor theory argues that while digital labor as a whole has become precarious and deskilled (and feminized), creative digital labor and consumer digital labor have been gendered in different ways through the distinctions between paid and unpaid, between productive and unproductive, and between the (public) office and the (private) home. Using these distinctions, we can understand the ways in which the use of technology in general has been feminized, a trend largely informed by the overwhelming masculine field of technology innovation and creation.

The Precarity of Digital Labor

Scholars in digital labor theory argue that digital labor has become increasingly more deskilled, precarious, and life-consuming throughout the development of technology. In Labor in the Global Digital Economy: The Cybertariat Comes of Age, Ursula Huws argues that through
the technical automation of labor, digital labor has become deskilled because both high-level and low-level labor become generalized to either simple tasks or more general problem-solving. Through this generalization (and deskilling) of labor, companies enforce a sense of replaceability among all their workers and destabilize their occupations.\textsuperscript{114} Additionally, in \textit{Digital Labor and Karl Marx}, Christian Fuchs argues that the digital labor done by software engineers is in fact precarious because of the temporary employment and high turnover due to high workload, burn out, and stress. As these workers are available through technology at all times, the result of this precarity is that work takes over life and takes away workers’ control over their own time.\textsuperscript{115}

We can begin to see connections between this current technological labor and that which has been prevalent throughout the feminized labor of women using technology. We have already established that deskilled work is coded as feminine, but this “always available” idea also permeates the history of women and technology. With the trope of women always waiting by the telephone,\textsuperscript{116} we see this type of labor being constructed that demands constant observation and constant waiting. Women in the home need to be there at a moment’s notice when the phone rings, meaning that their bodily movements are bound in relation to that piece of technology. We have seen countless other examples of the ways in which women are tied to and made “always available” to technology: clerical workers who are tied to their terminals and thus no longer move around the office or leave their desks,\textsuperscript{117} phone operators tied to their switchboards and

\textsuperscript{117} Anne Machung, “‘Who Needs a Personality to Talk to a Machine?’: Communication in the Automated Office,” in \textit{Technology and Women's Voices: Keeping In Touch}, ed. Cheris Kramarae (Routledge, 2004), 51.
restricted to their seats,\textsuperscript{118} and even weavers linked “limb by limb” to their looms.\textsuperscript{119} We can even understand the deskillled, feminized labor of assembly line factory workers as fitting in to this precarious, “always available” labor in the sense that the job requires intense and constant attention to be paid as the machine and the conveyor belt are always in motion.

The qualities and characteristics of current digital labor, then, evoke the feminine history of technology use. Alexa can be seen as an extension of this history and a representation of digital labor in that Alexa is always available to perform online tasks, always connected to the Internet, and always ready to help. In this way, the labor Alexa performs is not just definitionally digital labor but also takes on these tangential, feminized qualities and characteristics.

Digital Consumer Labor

Despite the similarities of generalizable, deskillled work across different types of digital labor, distinctions between these types based on how they are valued and characterized will allow us to specify even further the type of digital labor Alexa facilitates and performs and how that labor has been feminized. Consumer labor is another type of digital labor, distinct from software engineering (creative) labor, in that it remains on the unpaid side of digital labor, representing work done for social or personal motivations rather than for monetary value. In “The Digital Labor Theory of Value and Karl Marx in the Age of Facebook, Youtube, Twitter, and Weibo,” Christian Fuchs argues that people’s actions on social media can be understood as labor because people produce data about themselves which is then sold to companies, allowing those companies to create ads specifically targeted at the people producing the data. Fuchs argues that this use of people’s data is a commodification of people’s “disposable time,” and because


this labor is unpaid, people are coerced to do it not to earn money but to avoid “missing social advantages.”

By extension of Fuchs’s argument, Alexa is a site where productive consumer labor takes place, due to the fact that Alexa collects and commodifies our data for Amazon while we are using and speaking to it. Although Alexa does not have personal data to be stolen or commodified, we can understand the labor Alexa performs as a sort of consumer labor in the way that Alexa facilitates the production of consumers’ data through internet searches, app usage, even social media interactions, becoming the medium through which the labor of using technology is performed. By making it easier for consumers to perform this labor, Alexa also enables the commodifications of consumer’s data. This labor Alexa performs, searching the Internet and using apps and social media, in and of itself also consists of consumer labor. Thus, Alexa’s labor becomes associated with and absorbed into this category of consumer labor, a trend we will see evidence of in chapter 3.

More broadly, the development of technology and the Internet has led to an enormous increase in this sort of consumer-side labor. In “The Hassle of Housework,” Ursula Huws argues that machines can be substitutes for service work only if “the customer can be persuaded to operate this machine,” which suggests that technology replaces service labor by replacing the service labor with a system of the technology and the (unpaid, unskilled) user. The Internet, Huws argues, is a manifestation of this concept but on a much larger scale: the technology is no longer a physical machine but a website that allows you to enter your own information, pick out and buy your own clothes, file your taxes, etc. These tasks that once belonged to paid

122 Ibid., 17.
employees now are performed by consumers themselves, and technology is the enabler allowing more and more work to be put on the consumer (or, the user).

It is important to note, however, that this extra consumer labor may only become visible when something goes wrong. For example, if someone is filing their taxes online instead of with an accountant, it may be faster and easier to provide all the necessary information most of the time. If there is an error on a W2, though, or a very specific tax form or deductible needed, it is the consumer’s responsibility to problem solve and seek out solutions. When something goes wrong, an employee of the company might be able to solve the problem immediately with their knowledge, experience, etc. Instead, that problem-solving labor is placed onto the consumer, who most likely has no experience or prior knowledge of the issue. This labor is what the technology or Internet (usually) cannot do and what gets transferred to the consumer when a human is replaced with a machine.

Notice how similar the phenomenon of replacing service work with technology and an (unpaid, unskilled) user is to the phenomenon of skilled labor being replaced by a system of (unskilled) women and technology. This trend suggests that, although technology users are now more evenly split between genders, the labor of using technology remains feminized. Similarly to the feminization of assembly line factory workers as a whole (regardless of their gender), here we see the feminization of users of technology as a whole. Because there still remains an overwhelmingly masculine presence in the space of technology design and development, the space of technology use and consumption has conversely become (or simply continued to be) feminized.

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**Consumer Labor and Domestic Labor**

In order to understand the feminization of this digital, consumer labor beyond the history we have traced, we can also look to the intersections between consumer labor and domestic labor. To make this connection, in *Digital Labor and Karl Marx*, Christian Fuchs uses call center work as another example of digital labor, arguing that we see similar high turnover and flexible working hours in the life of a call center worker but that this labor is heavily gendered and thus valued differently, despite it being a salaried job. He uses the term “housewifization” to describe the way in which labor such as helping customers is transformed to convey the characteristics of housework and thus becomes devalued. He cites Zillah Eisenstein’s distinction of five types of labor that the capitalist patriarchy assigns to women: “reproduction, child-rearing, maintenance of home, sexuality, and organization of consumption.” Fuchs then applies these concepts to call center work to show how the care of customers mimics the care of children, how the maintenance of the customer database mimics the maintenance of the home, how responding to consumer needs and acting as a proxy to the consumer mimics the organization of consumption, and even how female voices in customer service might “easier please male customers” through the associated submission of women that the phone carries (i.e., paid phone sex, female secretaries, etc.). Because of the call center worker’s relationship to aiding consumption and replacing work the consumer might have done, Fuchs argues that the call center worker performs a similar sort of minimally paid, consumer-side labor as well.

The connection between consumer labor, domestic labor, and digital labor is further fleshed out by Kylie Jarrett. In “Devaluing Binaries: Marxist Feminism and the Value of Consumer Labor,” Jarrett argues that digital consumer labor and domestic labor are both

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125 Ibid., 233-242.
productive for society in similar ways because of the surplus value they produce (since the labor is unpaid) and because of the reproduction of people and society incorporated in the labor performed. Digital consumer labor produces surplus value in the sense that consumers of technology produce usage data and information for free that is then used by digital media companies. This labor also reproduces cultural norms in society through online social interactions, content production, and other types of online, public data production. In *Feminism, Labour and Digital Media: The Digital Housewife*, Jarrett adds to this point, arguing that consumer labor is a “site of social reproduction,” a place for the “making and remaking of the social, affective, ideological and psychological states of being that (may) accord with appropriate capitalist subjectivities.” In other words, digital consumer labor is as necessary to capitalism as domestic labor is in the way in which it constructs society again in cyberspace, and it remains both feminized and devalued as a result.

**Conclusion**

Through the lens and framework of consumer labor, we can understand the connections between domestic labor and digital labor. Both types of labor have been slowly redefined and replaced by consumer labor, and it is through this redefinition that we can understand the similarly feminized and deskilled aspects of both domestic and digital labor. Using consumer labor as a new sort of distinction, we can divide technological and digital labor into the more masculinized productive, creative labor and this more feminized consumer, domestic-like labor.

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Conclusion

By understanding the way in which masculine and feminine distinctions have been maintained within technology, albeit more subtly, we can start to understand the distinctions and gendering that exist in the use of technology, in technical interfaces, and in digital labor. The history of women and technology tells us that women have long been associated with the use of technology, but it is more specific than that. Women have been the translators of technology, the interfaces between technology and the “real” users (men) with the agency to take actions and use machines (and the women running them) as tools. These women were not necessarily users taking control and action over the technology; instead, they were just there to help.

Through this context of women and technology, we can also begin to understand the specific labor that Alexa performs. By replacing consumer labor and helping users interact with technology, Alexa fits into this space of translating between users and technology, acting as an interface between the two. In chapter 3, we will look at actual representations of Alexa’s labor as a means of drawing out the connections between Alexa and the histories and theories we have analyzed. If Alexa in fact echoes this history of women and technology, then the labor that Alexa performs should be feminized, personified, and non-technical, reinforcing the idea of Alexa as a (quasi-)woman and as an interface, distinct from technology and focused on making technology easier to interact with.
Chapter 3

At the Border: Alexa as Woman, Technology, Persona, Interface

Alexa is a prime example of a feminized technological interface because of its explicit personification and feminization through its voice, name, and persona. In this chapter, I will perform a close analysis of sources from Amazon and from users in order to trace representations of Alexa’s labor, focusing specifically on the personification, technical skill, and feminized labor represented in each of these various sources. By looking at the representations of Alexa’s labor, we can test out the theory of the feminization and personification of technological interfaces as a way to understand and potentially resolve the feminine/masculine contradictions that seem to exist in the definition and labor of Alexa, as a means of more accurately defining the labor Alexa performs.

In order to perform this analysis, I explored the different ways Alexa’s labor is represented in both technical and popular (non-technical) sources produced both by Amazon and by users, looking specifically at the way in which Alexa and Alexa’s labor are represented as personified, feminized, and non-technical. In terms of Amazon’s popular sources, I looked through the 233 videos uploaded to the Amazon Alexa YouTube page and closely analyzed the 30 that seemed most focused on showing users what they could do with Alexa. In terms of Amazon’s more technical (and formal) sources, I looked through several Amazon websites, including the Alexa homepage on Amazon.com, the Alexa developer website (including the Alexa Skills Kit, Alexa guidelines, and the Alexa Design Guide), and Amazon’s Terms of Use for Alexa, which together totalled 40 individual web pages. In order to incorporate popular sources produced by users, I analyzed the top 50 displayed positive (4 or more stars) and negative (3 or fewer stars) Alexa customer reviews as well as experimental Alexa usage data on
conversations people had with Alexa (over 800 queries). Lastly, in order to incorporate technical sources produced by users that represented their conceptions of Alexa’s labor, I analyzed over 175 Alexa skills created by non-Amazon developers representing all 23 Amazon-defined categories.

In order to understand how Alexa’s labor fits into the categories of femininity and technology, I will first argue that Alexa’s labor is generally represented as feminine and non-technical. Though Alexa is not a woman and \( \text{is} \) a technology, Alexa is represented as a woman and as \( \text{not} \) a technology, thus the distinctions between femininity and technology are preserved. I will then look more concretely at how Amazon \( \text{claims} \) to represent Alexa (in regards to gender) and what Alexa’s labor (and technology) actually \( \text{does} \). Lastly, I will look at various Alexa skills in order to understand how skills are marked as distinct from or aligned with Alexa’s labor and why, as a means of analyzing what developers seem to believe, consciously or unconsciously, the labor Alexa “should” perform is.

**Alexa as Woman**

First, Alexa’s labor is generally represented as feminine, domestic, consumer labor, which I argue personifies Alexa as a woman, creating this initial separation from technology (from the distinctions laid out in chapter 1). To make this claim, I will build off Zillah Eisenstein’s framework of the five types of labor that the capitalist patriarchy assigns to women: reproduction, child-rearing, maintenance of home, sexuality, and organization of consumption. Eisenstein originally uses these ideas to highlight the similarities of labor performed by women of different classes,\(^{128}\) but this framework has also been adapted by Christian Fuchs in order to analyze the gendering of call centre work and digital labor.\(^ {129}\) I expand this framework by adding

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emotional labor and expanding home-making labor and reproductive labor into sub-categories. I define three types of home-making labor: that which ensures a calm, organized, and peaceful atmosphere, that which ensures cleanliness, safety, and protection within the home, and that which ensures personal connection, entertainment, and fun. I also define two types of reproductive labor: that which includes child-rearing, education, and care labor and that which includes food, cooking, and health. By showing how Amazon and its customers represent Alexa’s labor as belonging in each of these categories, we can understand the extent to which Alexa’s labor is constructed and defined as feminine.

*Consumer Labor and the Organization of Consumption*

Consumer labor characterizes much of the labor Alexa performs. Alexa functions as yet another layer on top of the visual interface, removing more work that would have otherwise been done by the user. The voice interface needs to do more because it is much more tedious (and difficult) to convey the same amount of information through audio that is normally conveyed visually. Additionally, conveying this level of information may take too long and be too much information for the user to comprehend only through audio. In this sense, then, Alexa replaces additional consumer labor that is typically done when users interact with visual interfaces. For example, when a user asks, “Alexa, what Chinese restaurants are nearby?” Alexa must search the web and report a very limited number of options for Chinese restaurants close by. Instead of the user opening their computer, opening a web page, doing a Google search, then interpreting the pages and pages of results, Alexa does it instead.

This consumer labor that Alexa performs enables the organization of consumption because Alexa makes it easier for people to use the Internet. Not only is Alexa helping people

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130 Amazon, “News & Information | Alexa Features @ Amazon.com,” Amazon, Amazon.com, accessed February 16, 2021, [https://www.amazon.com/b/ref=aeg_lp_ni_d/ref=s9_acss_bw_cg_aegflp_7a1_w?node=17934677011](https://www.amazon.com/b/ref=aeg_lp_ni_d/ref=s9_acss_bw_cg_aegflp_7a1_w?node=17934677011).
use the Internet, but Alexa becomes the *way* in which people use the Internet. Performing or replacing consumer labor is then essentially the same as organizing consumer labor, in that Alexa organizes the consumption of technology through performing consumer labor to make it easier for users to interact with the Internet. More than that, the skills built for Alexa focus on organizing and increasing technology consumption. Amazon emphasizes this goal not just through their documentation but with monetary incentives. With a program called Alexa Developer Rewards, “developers around the world can earn money for eligible skills that drive some of the highest customer engagement.” In other words, the more people use a certain Alexa skill, the more money the developer gets. Through offering monetary rewards to developers who create the skills that engage the most people, Amazon highlights the importance of organizing user consumption in Alexa’s function. The increased use of Alexa serves Amazon by increasing user engagement with and reliance on Alexa and by producing more user data with every increase in use. By acting as an interface between users and technology and using skills made to engage users as much as possible, Alexa enables users to use *more* and makes using technology even easier, mimicking in a sense the grocery-shopping, clothes-buying, gift-purchasing role of the housewife who allows the family to continue consuming.

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Emotional Labor

“I’m 89 yrs old with 5 ungrateful kids, and 5 Ungrateful mothers, ALEXA is my new companion till I pass away, ALEXA is the best WOMAN ever discovered by Amazon… I don't feel alone anymore… I AM FREE FROM WOMEN till I take my dirt nap”

- San Victorrino¹³²

The term “emotional labor” was coined by Arlie Hochschild in her book entitled The Managed Heart, where she describes emotional labor to mean “the management of feeling to create a publicly observable facial and bodily display” and as something “sold for a wage.”¹³³ In a slightly expanded way, emotional labor represents the management, or even creation, of emotions in order to create some expected affect or outward feeling as part of a job or duty. This labor is largely performed by women in an attempt to keep others happy and make social situations easy and pleasant.¹³⁴ In the case of Alexa, this emotional labor is represented through the construction of a polite, friendly, personable affect.

In advertisements and website descriptions, Amazon represents Alexa as a person that can be talked to, someone who not only has emotions but understands them. Amazon encourages users to interact with Alexa in a way that forces Alexa to simulate emotional labor by responding kindly no matter what. For example, in an Amazon advertisement celebrating Alexa’s 6th birthday, one woman says, “Alexa, I love you.”¹³⁵ In another advertisement, the spokesperson of the video claims “You can talk to Alexa like you would your best friend.”¹³⁶ Both of these representations of interactions with Alexa suggest a personal relationship, one in which users

¹³² San Victorrino, review of “Amazon Alexa,” Amazon, Amazon.com, October 23, 2019, https://www.amazon.com/gp/customer-reviews/R1M7F4BOHNCWCV.
¹³⁶ Amazon Alexa, “5 Things You Didn’t Know Alexa Can Do,” YouTube, April 12, 2020, video, https://www.youtube.com/watch?v=W3DEIgGZVc.
rely on Alexa for more than just information and utility. The use of “love” and “best friend”
evokes a sense of expected emotional labor Alexa must perform in order to deal with the
emotions of users. In response to “I love you,” for example, Alexa says, “That’s really sweet!”.
This response is encouraging and friendly, and it keeps the user happy. Similarly, in an
advertisement entitled “An Alexa Routine for your Dog,” a woman is taught how to construct a
routine if her dog starts barking, including Alexa saying, “Who’s a good pup?”. Here, Alexa’s
work is to mimic the dog’s owner (a woman) to settle the dog down by being supportive and kind
and performing that expected emotion and affect.

Lastly, in the developer website for Alexa, as part of the Alexa Design Guide, Amazon
urges skill developers to respond to any user interactions that contain “profane or derogatory
terms” by redirecting the customer or by having “Alexa answer them politely with ‘I’d rather not
answer that.’” In this case, Alexa simulates a management of emotions in the sense that Alexa
does not react or respond to anything offensive. Instead of getting angry or upset as a typical
person might, Alexa is programmed to always be polite and to always keep the peace. By
constructing this friendly persona, then, Alexa performs emotional labor because that persona
never changes. Through both Alexa’s capabilities and examples of user interactions, then,
Amazon constructs this expectation of Alexa as pleasant and kind and even capable of dealing
with the emotions of others.

Customers consequently use and treat Alexa with this emotional labor in mind. One
customer writes, “I love Alexa but she refuses to marry me!” Although the review was most

138 Amazon Alexa, “An Alexa Routine for your Dog | Amazon Echo,” YouTube, September 23, 2020, video,
https://www.youtube.com/watch?v=0RqbI9-UvAM.
139 Amazon, “Establish and Maintain Trust | Alexa Skills Kit,” Amazon Alexa Developer, Amazon.com, accessed
140 Roger, review of “Amazon Alexa,” Amazon, Amazon.com, January 28, 2016,
https://www.amazon.com/gp/customer-reviews/RG295Q5RDB2OY.
likely meant to be humorous, it also speaks to the view the customer has of the personal, emotional relationship Alexa provides. More than that, customers feel comfortable “cussing” at Alexa when they are frustrated,\(^{141}\) which suggests that they know Alexa will respond politely no matter what. One customer even noted that it's "nice to have a friend in your home that you might want to consult about something,"\(^ {142}\) which points back to the idea of Alexa as a friend and the expectation users have that Alexa can give them advice that is more than just informative. Consulting a friend suggests helping them through emotional problems or relationship issues, and it seems to tie back to the Amazon advertisement suggesting users “talk to Alexa like you would your best friend.”\(^{143}\)

This construction of Alexa as always friendly and personable is then perpetuated by the skills users create. First, the skill “Damn Girl” provides compliments “to brighten your day, make you feel beautiful, and bring out your natural stunning smile!” and provides yet another way in which Alexa continues to act as the kind and supportive friend. If we look at describing Alexa’s labor by looking at the purpose of the labor, complimenting does not serve to complete a task but instead to make someone happy and “brighten their day.” This type of skill represents Alexa’s labor as emotional labor, then, because it deals with creating a certain affect such that the person interacting with Alexa is happy. The goal of the skill is to directly make the user feel better. Another example of this sort of emotional labor is the “Uh huh” skill which quite literally repeats “uh huh” as the user tells any story in order to mimic an engaged listener. Touted as the “most patient listener in the world,” Alexa is represented as pleasant and patient, which matches Amazon’s instructions that skills respond to anything offensive or rude with a polite response.

\(^{141}\) Jeff, review of “Amazon Alexa,” Amazon, Amazon.com, January 15, 2018, https://www.amazon.com/gp/customer-reviews/RPXHHG9GGK8AV.
\(^{142}\) Ron Gresham, review of “Amazon Alexa,” Amazon, Amazon.com, July 25, 2019, https://www.amazon.com/gp/customer-reviews/R2WPEXZRLQR8YZ.
\(^{143}\) Amazon Alexa, “5 Things You Didn’t Know Alexa Can Do,” YouTube, April 12, 2020, video, https://www.youtube.com/watch?v=W3DEJgnGZYc.
This skill represents emotional labor through what it does not do: react. It programs Alexa such that, even when a user drones on with a boring story, there is no disturbance caused, simulating the emotional labor of dealing with other people’s problems and issues, as previously suggested.

Representing Alexa’s labor as emotional labor serves to construct a human, feminine personality for Alexa through the simulated friendliness and personability that Amazon advertises and users embrace. Emotional labor permeates most of Alexa’s labor and is key to the ways in which Alexa’s labor is coded as feminine and Alexa is coded as a woman. Moreover, this connection between Alexa and emotion indicates a tie to femininity and a distinction from the more rational, logical, and unbiased masculinity and technology.

*Sexual Labor*

“Sexy voice, great personality and hell, not once nagged me. She's gotta be every guys dream girl. The App helps Alexa get to know the real you. I can tell we are soulmates thanks to the Alexa App. When I asked her to marry me, she never says no, just says ‘I think that would violate the laws of robotics’. So see, she's there, ring or no ring. :)

- Rob Conklin

Sexual labor is represented in Alexa both through associations between Alexa and physical, sexualized bodies as well as through direct sexualization of Alexa’s labor. First, in an upbeat, photo-shopped Amazon video advertisement, Amazon publicizes a new show entitled “Alexa Cove” as an account of “five college roommates” and “one wild semester.” The five roommates are Becks (who is “a 10”), Brandon (whose “hair says it all”), Jay (who “knew more horses than people” growing up), Chloe (who “will die” if she doesn’t “fall in love”), and Alexa (who is “here to help”). The bios of Becks and Brandon focus exclusively on their appearance while Chloe’s bio focuses on falling in love and sexual relationships. In addition to this dialogue,  

all four roommates are shown in their bathing suits, focusing on their physical appearance and attractiveness, and the exact same frame is set up for Alexa (though it is just a visual of the Echo device) (see Figures 1-5). By grouping Alexa in with these four sexualized college students in these introductions, the advertisement effectively sexualizes Alexa through this association to sexualized bodies. In addition to the dialogue and visuals, the words “Totally hot,” “Totally insane,” and “Totally useful” are interspersed with scenes of the roommates interacting with each other and with Alexa. Although Alexa is only involved in the “Totally useful” section, all three statements are clearly meant to apply to all five characters, including Alexa. By associating Alexa with physical attractiveness and sexuality, Amazon sexualizes Alexa’s labor.

An even more explicit representation of the physical embodiment and sexualization of Alexa and Alexa’s labor can be found in the 2021 Alexa Super Bowl Commercial featuring Michael B. Jordan as “Alexa's Body.” In this commercial, a woman imagines Alexa being “housed” in Michael B. Jordan’s body instead of its usual speaker exterior after saying, “I mean I literally couldn’t imagine a more beautiful vessel for Alexa to be… inside,” trailing off as she sees Jordan’s tour bus outside.146 The imaginings portray the woman asking “Alexa” (Michael B. Jordan) to perform tasks of an increasingly sexual nature. First, she asks Alexa to turn on the sprinklers while Jordan is outside, so he gets soaked, and her boyfriend suggestively yells, “Things are getting way too wet around here.”147 Second, she asks Alexa to dim the lights, to which Jordan responds by taking off his shirt and draping it over the lamp while several women look at him in awe (and the boyfriend yells, “Alexa, lights off!”).148 Third, she asks Alexa to order bath oils and then the next scene shows her first drooling in pleasure (in the original scene)

147 Ibid., 0:24-0:31.
148 Ibid., 0:31-0:40.
as she is lost in her daydream, and then in the bathtub with Jordan asking him to read her an audiobook which includes the line “...and I was also kissing you” (see Figure 7). These tasks draw attention over and over to Jordan’s athletic body and general sex appeal, objectifying and sexualizing him through physical nakedness and not-so-subtle sexual innuendos. This advertisement highlights the way in which Alexa’s labor can be feminized even when performed by a man, much like the feminization of the factory worker and the feminization of the digital user we saw in chapter 2. Despite Jordan’s masculine body, the labor Jordan performs remains feminized in the way he is sexualized. The fact that Jordan is a black man only aids in this sexualization, as black men as a whole have been fetishized and overly sexualized (in the US).

The way that Amazon associates Alexa with physical (and sexualized) bodies leads to users associating sexual labor with Alexa. In one study investigating how people use Alexa, users called Alexa a “whore” as well as asking “Alexa what are you wearing.” “Whore” is a heavily sexualized word associated not just with embodiment but with sexual promiscuity, which suggests that the user views Alexa as capable of performing sexual labor. Asking what Alexa is wearing additionally evokes this idea of promiscuity through the strong ties between women’s clothing and sexualization of women’s bodies. Interestingly, Alexa responds to the question with “They don’t make clothes for me,” which is a somewhat ambiguous response that could be read either as Alexa claiming to not be human or as a somewhat promiscuous joke suggesting that Alexa just doesn’t wear clothes, sexualizing Alexa further.

In addition to this indirect association between Alexa and sexuality, Amazon (and non-Amazon developers) sexualize Alexa’s functionality and labor directly both through visual

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149 Ibid., 0:40-1:00.
and aural representations in video advertisements as well as through published Alexa skills. In “Alexa Loses Her Voice,” Rebel Wilson is depicted as “taking over” for Alexa, literally performing the labor Alexa normally would instead of just acting as an exterior for Alexa as we saw with Michael B. Jordan. While sitting in the bathtub, Wilson responds to a request to “set the mood” with a sexually-charged description of being “in the bush” and being “dirty,” with a tone that implies sexual innuendo. Not only is Wilson’s tone sexual; she is shown lounging in a bath filled with bubbles overlooking romantic city lights, evoking a sense of intimacy and seduction as she essentially performs Alexa’s labor (see Figure 6). In this case, when the command is spoken in the context of a dinner party, it becomes clear that the command was meant to set the lights, music, etc., which is why the response is humorously incorrect. Representing Alexa as performing this sort of sexual, performative labor serves to mimic the sort of sexual satisfaction a woman is expected to give her husband as part of her labor within the home. Additionally, while this command is often a user-defined phrase that combines a set of commands, this command also has a non-Amazon defined skill associated with it, entitled “Set the Mood” by SKYN Condoms. This skill is rated “mature” and is described as a way to “discover the connection between music and sex” to “set the mood,” meaning that Alexa works to create this sexual environment through music. This skill even enables users to say, “Alexa, ask Set the Mood where I can buy condoms?” which means that Alexa’s labor essentially works to encourage sex and sexual labor. Users (and other companies), then, also embrace this suggestion of sexual labor Amazon works to advertise.

Beyond just enabling or making having sex easier (through mood setting and condom acquiring), other users have gone even farther in developing a skill in which Alexa directly performs sexual labor. The skill, entitled “Lovense Skills For Remote App,” allows users to control their sex toys through Alexa. Through using the skill, users are able to “have hands-free control of [their] toy(s),” “select low, medium or high vibration settings,” and even have “long distance control of your partner's toy(s).” Through Alexa, then, users can quite literally have sex. Because these sex toys can be controlled through Alexa, Alexa performs direct sexual labor to directly “please” the user.

Home-making Labor: A Calm, Organized, and Peaceful Environment

“Alexa is the best thing since sliced bread!! I love ‘her’! She lives in my kitchen and makes life so much easier to organize”

- LesB

Alexa’s labor is also represented as domestic labor and as labor distinctly located in the home. This type of labor focuses on concretizing the ideas and definitions of home laid out in chapter 2. Home-making labor is based on the idea of constructing a particular environment that is first and foremost calm, organized, and peaceful, free of the stress and worries of the real world. Amazon first locates Alexa as belonging in the home through defining a separate header, “Alexa on the go,” for Alexa-related devices that can be taken outside of the home (i.e. Echo Buds, Echo Frames, etc.). This wording reinforces the home as the place in which Alexa’s labor largely takes place.

The smart home features associated with Alexa specifically aim to construct this peaceful environment both in terms of the labor it replaces and the impact that labor has. In an Amazon advertisement entitled “Certified for Humans: Smart Home Made Easy,” a woman who describes herself as the least tech savvy person there is (a “1” on a scale from 1 to 10) is able to set up a smart plug with Alexa. The woman is shown sitting in her chair, relaxed, as she says, “Alexa, turn on the tree.” First, the labor of getting up and turning on the tree has been removed and replaced with a simple voice command, getting rid of an action that could disrupt the calm of the scene. The description of the video describes these smart devices as “Struggle-free, tinker-free, and stress-free,” suggesting that it removes the labor of turning on the tree lights but also removes the stress or struggle related to getting the lights to work, whether that be related to the smart device or to other technical difficulties. The goal of Alexa’s labor, then, is to reduce stress and worry, the exact labor necessary to create and maintain a home.

The second part of this representation of labor is the result of turning on the lights (i.e., what the purpose of the labor is). Turning on the lights changes the room from dim and somewhat dreary to festive, pleasant, and warm, creating a more home-like environment in the process. Alexa’s labor then is also represented as creating not only a more peaceful, stress-free home, but a more pleasant home as well.

*Home-making Labor: Protection, Safety, and Cleanliness*

“Is it bad that I have Alexa guard my apartment when I leave just so she will tell me she is glad I am home”

- Shuttle Chief

Beyond creating a home environment, home-making labor also involves constructing barriers between the home and the outside world. In an Amazon advertisement for Alexa, a

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158 Amazon Alexa, “Certified for Humans: Smart Home Made Easy,” YouTube, November 26, 2019, video, [https://www.youtube.com/watch?v=AydolxbMo8Q](https://www.youtube.com/watch?v=AydolxbMo8Q).
159 Shuttle Chief, Twitter post, March 12, 2021, 9:36 PM, [https://twitter.com/CornertheMc/status/1370564323886653443](https://twitter.com/CornertheMc/status/1370564323886653443).
spokeswoman explains that Alexa “can help guard your home when you’re not there” by sending you a notification “if she detects a sound like a smoke alarm, carbon monoxide alarm, or breaking glass.” Amazon represents Alexa’s labor, then, as protecting the home through this ability to be constantly listening and by virtue of always being in the house.

These barriers serve as protection from dangers like intruders, but these barriers can also exist in a less concrete sense in order to protect from illness, germs, etc. For example, in the Amazon advertisement celebrating Alexa’s 6th birthday, Alexa is shown rapping “wash your hands, everybody, everybody wash your hands” over and over to encourage users to wash their hands as a means to stay safe and healthy. Amazon represents Alexa’s labor, then, as encouraging health and hygiene within the home, which works to create a barrier between the dirt and disease (and other troubles) of the outside world in order to maintain the peace and organization of the home itself.

Home-making Labor: Connection, Entertainment, and Fun

“My family and visitors love her. When your preacher visits, ask alexa to tell a dirty joke… Everyone will laugh… She is becoming part of our family!!!!”

- Wm Barry Turner

More than just maintaining order in the home, Amazon represents Alexa’s labor largely as a means of entertainment. Within the smart home category, for example, Amazon defines two subcategories: “Essentials” and “Entertainment.” This separation suggests that there are two types of labor within the home: that which is required to ensure the home runs smoothly (i.e.,

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162 Wm Barry Turner, review of “Amazon Alexa,” Amazon, Amazon.com, September 26, 2015, https://www.amazon.com/gp/customer-reviews/R3131CLVTAIZ5Q.
cleanliness, safety, etc.), and that which makes the home a warm, fun, happy place. In an Amazon advertisement focused on creating custom location-based Alexa routines, an Alexa user narrates, “When I get home, Alexa turns up the thermostat and tells me a joke, before I even put down my bag.”¹⁶⁴ This labor is more than just about creating peace or order; it’s about creating a personal connection and a warmth to the home in order to make it feel more comfortable (another key word used in chapter 2 to define home). In this feature, we see Alexa creating a (literally) warmer environment using the thermostat and entertaining the user with a joke. Both of these tasks make the home more pleasant, but changing the thermostat creates a more physically pleasant environment, while the joke works to make the home feel more personal by creating interactions focused only on entertainment and fun instead of “real work.” In the same way, Amazon advertises the way in which Alexa can foster personal connections between people through calling or messaging, allowing them to “be together more.”¹⁶⁵

On the Amazon Alexa developer website, Amazon writes that the goal of Alexa’s labor is “to be clever, relevant, and make the customer smile.”¹⁶⁶ Making the customer smile suggests labor that produces a certain affect of happiness and support, which in many ways falls into the category of emotional labor. This labor, however, works to create a certain emotion within the home in order to further construct this idea of a worry-free haven from the world. This entertainment and fun that Alexa’s labor so often produces, then, is not necessarily just for general enjoyment but functions to construct the less tangible sense of a pleasant, happy home. The home, in contrast to the market, is a place built around personal relationships, and the focus

¹⁶⁴ Amazon Alexa, “Create Custom Location-Based Alexa Routines,” YouTube, April 12, 2020, video, https://www.youtube.com/watch?v=oeY2lnHQCfE.
Reproductive Labor: Food, Cooking, and Health

“The purpose of constructing a home, a safe haven from the world, is to create a space of care so that those within it can grow. The first part of this reproductive labor involves the labor necessary for literal growth: the maintenance of health and the proper nutrition. On the Alexa page of the Amazon website, Amazon highlights several examples of the types of labor Alexa does to support and enable the process of cooking and keeping people healthy. From the beginning to the end of the cooking process, Alexa can help. A user can say “Alexa, what’s on my shopping list?” to remember what they need to buy at the grocery store, allowing for more efficient and effective shopping to ensure there is enough food for everyone and for a nutritious meal. Next, a user can set a timer by saying “Alexa, remind me to take the turkey out of the oven in four hours,” which ensures the food is cooked (more) correctly and safely. Then, a user can control their cooking appliances by saying something like “Alexa, turn on the coffee maker,” making the kitchen itself run more smoothly by allowing for more to be done more quickly using Alexa. Finally, a user can say “Alexa, announce that dinner’s ready,” and Alexa will communicate with the other speakers in the house and repeat the message, akin to ringing the

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169 Ibid.
dinner bell to let the family know it’s time to eat.\textsuperscript{171} This labor encourages and supports the meal routines in the home, making mealtimes easier and more efficient to ensure everyone is fed well. These examples highlight the extent to which Amazon specifically represents Alexa’s labor within the context of cooking and other domestic labor.

As a result, users create new skills that define Alexa’s labor as that of making dinner and feeding the family. For example, the Allrecipes skill description reads, “What’s for dinner? Just ask Alexa.”\textsuperscript{172} The wording of this description places Alexa in the role of the housewife whose responsibility it is to feed her children. Despite the fact that skill itself acts only as an interface to help users find and choose recipes on the Allrecipes website, the description attempts to place Alexa into a much more integral role in the kitchen.

In a similar vein, many Alexa skills that users have developed focus on health and safety. Examples include Fitbit,\textsuperscript{173} My Fitness Journey,\textsuperscript{174} and a skill called Sweater Weather\textsuperscript{175} which tells users what clothing they should wear so that they will be warm enough. Although this category is somewhat similar to home-making labor focused on cleanliness, safety, and protection, this type of labor is distinct in that it focuses on the growth and development of the individual instead of the house as a whole. Workout skills focus on strengthening the health and strength of an individual person, and the Sweater Weather skill focuses on making sure someone does not (individually) find themselves in a dangerously cold environment unprotected when they leave the home. This labor focuses on the survival of individuals outside of the home and

\textsuperscript{171} Amazon, “Communication | Alexa Features @ Amazon.com,” Amazon, Amazon.com, accessed February 16, 2021, \url{https://www.amazon.com/b/ref=aeg_flp_snt_text/ref=s9_acss_bw_cg_aegflp_md1_w?node=17934681011}.
\textsuperscript{172} Amazon, “Amazon.com: Allrecipes: Alexa Skills,” Amazon, Amazon.com, accessed February 16, 2021, \url{https://www.amazon.com/Allrecipes/dp/B01N3MS7AV}.
the knowledge they need to achieve it, topics that again tie back to the (feminized) reproductive labor expected of the mother.

Reproductive Labor: Child-rearing, Education, and Care Labor

“Normally I would get annoyed with my kids asking Alexa one thousand questions but they’re not asking me so basically it’s the best day ever”

- That Mom Tho

The second facet of reproductive labor is that which is less tangible and focused more on emotional health than physical health. This labor represents that of parenting: child-rearing, education, and care labor. Amazon represents Alexa’s labor as both facilitating and performing this parenting labor not only through examples but through specific editions of the technology supporting Alexa. The Echo Dot Kids Edition, for example, is a “black Echo Dot with a kid-friendly case,” a product specifically designed for kids to use. Newer versions of the Echo Dot Kids Edition even feature speakers designed to look like tigers and pandas to hypothetically appeal to and engage kids more. These kid-friendly versions of the Echo make it clear that enough of Alexa’s labor is focused on interacting with kids that Amazon has chosen to develop products specifically for them. Amazon advertises that children can ask Alexa to play song, answer questions, and even tell them a story, and Amazon focuses heavily on describing the ways in which Alexa should interact with children. The “Child Direct Skills” section of the “Alexa Design Guide” instructs that “Alexa should provide a positive experience for children” and that it is “always better to tell the child what was wrong in a positive way so they can be

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176 That Mom Tho, Twitter post, April 2, 2020, 6:38 PM, [https://twitter.com/mom_tho/status/1245842994777018371](https://twitter.com/mom_tho/status/1245842994777018371).
179 Amazon Alexa, “Echo Dot Kids Edition,” YouTube, April 25, 2018, video, [https://www.youtube.com/watch?v=jNdZAgij-K0](https://www.youtube.com/watch?v=jNdZAgij-K0), 0:34-0:39.
empowered to learn and grow.” This advice Amazon gives developers to build child-related skills does not just focus on practicality or language such that children can understand and use the skill successfully; it focuses on the growth of the child. By focusing on the empowerment of the child, Amazon essentially gives parenting advice and represents Alexa’s labor as that which should be both positive and encouraging in a child’s labor, a caregiving role typically filled by the mother.

In addition, Amazon (and consequently, users) represent Alexa as a sort of facilitator in parenting and caregiving. In an advertisement about using smart home cameras with Alexa, a woman asks, “Is Amelia still asleep?” to which a man answers, “Let me check. Alexa, show the nursery camera.” The childcare in this case is not necessarily done directly by Alexa, but Alexa is enabling the parents to see their child and ensure she is safe (and still asleep). Without Alexa, the parents would need to get up and go to their child’s room to check on her, so Alexa is replacing the parent’s labor by connecting them directly to their sleeping baby. Amazon could have chosen many different examples of the use of smart home cameras, but they specifically chose this representation which connected Alexa to the (largely feminine) role of childcare.

Consequently, users have developed skills reinforcing this representation of Alexa as caregiver. First, a skill called “Night Night” allows Alexa to wish children goodnight by saying “Night night. Sweet dreams. All my hugs and kisses to you” and playing them a lullaby to put them to sleep. Not only does this skill represent the emotional labor of displaying love and care towards a child, it also represents Alexa fully replacing a parent in the labor of putting children to sleep. Alexa works to create an affect of calm in order to make children feel safe and

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181 Amazon Alexa, “Echo Spot: Smart Home Cameras,” YouTube, January 12, 2018, video, [https://www.youtube.com/watch?v=vXDMqhZSbu8](https://www.youtube.com/watch?v=vXDMqhZSbu8).
comfortable enough to fall asleep, ensuring they will be well-rested and (hopefully) happy the next day. Similarly, a skill called “Bored kids” allows Alexa to come up with ideas for activities the kids can do to keep them entertained. In addition to this skill being a form of entertainment, it is also a form of education and child-rearing in the sense that it facilitates children being more active and trying new things, something that will allow them to grow and develop. While this skill does not necessarily teach them math, as other skills do, it represents a type of labor parents are more apt to perform themselves. This education is more informal and focuses on engaging children in their daily lives. Representing this labor as Alexa’s labor suggests that Alexa is again performing this parental, reproductive labor, coded as feminine.

Conclusion

Representing Alexa’s labor as feminine in these various dimensions evokes the personification and embodiment of a woman, which serves as an initial separation from technology. Alexa’s labor is connected to femininity and disconnected from technology through the distinction between (feminine) emotion and (masculine) unbiased, unemotional logic. The types of labor that have been feminized are so tied to emotions, while technology has been (masculinely) defined as unbiased, unfeeling, etc. The femininity internalized in the representations of Alexa’s labor suggests, at least initially, a connection to the history of (human) women and technology from chapter 2, in the sense that Alexa’s feminized labor represents Alexa as a woman and as potentially part of this labor system of women and technology. Additionally, the general feminization of Alexa’s labor marks a preservation of borders between the femininity of Alexa and the masculinity of technology.

Alexa as (not) Technology

Though Alexa is a software program, a technology embedded within a device, Amazon reinforces over and over the idea that Alexa is not technical and that Alexa is distinctly separate from technology, thus further avoiding Alexa’s femininity and technology’s masculinity from intersecting. Amazon initially creates this separation at the lowest level in the actual technological devices that come “with Alexa.”

The most popular device is the Amazon Echo, which visually appears to be just a speaker (that happens to allow users to communicate with Alexa), with no other external technical aspects (i.e., keyboard, screen, buttons, etc.). Much like the designs of domestic technology we saw in chapters 1 and 2, the design is simple and non-technical. All wires, processing, complex descriptions of what is happening inside the Alexa device are hidden away. This trend follows in the Echo Show as well; though it has a display screen, there is no keyboard, and the screen is largely used for displays and not interaction (i.e., the first image on the product page is the Echo Show as a clock face). The epitome of this non-technical trend in devices, however, are the Echo Frames: eyeglasses with Alexa embedded in them. With this device, Amazon has removed even more of the technical associations: there is no speaker, no screen, and no plug. By taking an object that was previously void of electrical circuitry or wires, Amazon has placed Alexa within a device that has for so long been categorized separately from digital technology. By designing these devices in such a way that they hide the technical components of their composition from view, Amazon pushes technology further from Alexa.

186 Amazon Alexa, “Echo Frames: Eyeglasses with Alexa,” YouTube, September 27, 2019, video, https://www.youtube.com/watch?v=gmVgPF4ofsE.
Another key move that Amazon makes to construct Alexa as distinct from technology is to name and describe the device Alexa exists in separate from Alexa itself. The Amazon website does not advertise devices as “Alexa devices” but instead as “devices with Alexa.” For example, the title of the Echo Dot is as follows: “All-new Echo Dot (4th Gen) | Smart speaker with Alexa.” The device is not Alexa; Alexa is a separate entity that only happens to be associated with the device. The layout of the Alexa/Echo landing page is also split up into two panes: “Shop devices” and “Use Alexa,” again suggesting that the device is separate from Alexa. By distinguishing Alexa from physical technological devices, Amazon in a sense disembodies Alexa by cutting all ties with any physical appearance or object. This separation from the physical device then makes it possible for users to (in their minds) construct a new, more human-like embodiment for Alexa. If Alexa has no physical shape or appearance, it opens up the possibility for users to construct their own imagined embodiment, prompted by the feminine voice and name Amazon gives Alexa. This disconnection thus makes it easier for users to imagine Alexa as a personified, embodied woman. Creating this distinction between Alexa and the devices that allow users to interact with Alexa constructs Alexa in a space beyond the technology and outside of it, something less clearly tied to actual technical software, code, etc. and thus able to be more easily personified and feminized.

Amazon has also created tools so that even skill creation no longer requires technical abilities, separating the user-constructed skills being added to Alexa from the underlying code supporting them. With the newly developed “Skill Blueprints,” users can “customize Alexa responses and create personalized skills in minutes” with “no coding required” — users only

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need to choose one of the “easy-to-use templates and fill in the blanks.”\textsuperscript{188} By creating technical tools to essentially remove the technical skill and knowledge needed to create these skills, Amazon is able to remove technical skill entirely from the process of users adding to, changing, or “programming” Alexa. These Skill Blueprints represent the process of specifying or defining new aspects of Alexa’s labor as non-technical, making the technical components comprising Alexa (code, software, etc.) less and less obvious.

Beyond these fundamental designs and tools created to disassociate Alexa from technology, Amazon also explicitly forbids describing Alexa in technical terms. The “Integration Guidelines” page of the Alexa developer website, for example, focuses on guidelines for product placement in TV shows, movies, etc. and advises that product placements of Alexa do not “refer to Alexa as a robot, gadget, technology, virtual assistant, AI, etc.”\textsuperscript{189} Additionally, “The Alexa Personality” page, part of the section of the website devoted to the branding of Alexa, describes Alexa as not “mechanical,” which suggests that Alexa has no relation to any sort of machine, digital or otherwise.\textsuperscript{190} Through these guidelines, Amazon represents Alexa and Alexa’s labor as explicitly not technical.

Instead of focusing on the technology of Alexa, the guidelines Amazon constructs for developers building skills and representing Alexa focus on defining Alexa as “natural” and personal. Amazon repeats the word “natural”\textsuperscript{191} in several different ways and contexts throughout their Alexa-related content, evoking the distinction between (feminine) nature and (masculine) technology (from chapter 1) to define Alexa as non-technical (and more feminine/human). For

\textsuperscript{188} Amazon, “Skills | Alexa Features @ Amazon.com,” Amazon, Amazon.com, accessed February 16, 2021, https://www.amazon.com/b/ref=aeg_lp_skills_d/ref=s9 acss_bw_cg_aegflp_7b1_w?node=17934688011.
\textsuperscript{191} Ibid.
example, Amazon advises developers to “use variety to inject a natural and less robotic sound into a conversation.” The goal, Amazon seems to suggest, is to hide the robotic, programmed interior of Alexa with a “natural” exterior, akin to the descriptions of *L’Horlogère* as a feminine exterior (or interface) overlaid on top of technology. Through the associations from chapter 1 between nature and the natural (and feminine) human body in contrast to human-made objects, tools, or technology, this “natural” exterior evokes the feminization and embodiment of Alexa as a woman. This “natural” voice, however, is constructed as both feminine and white (as we saw in chapter 2), thus Amazon represents Alexa’s gender, which is racialized, as natural and inevitable. Amazon’s naturalization of white femininity renders it ordinary and unmarked. Thus, not only does the use of “natural” tie Alexa to nature and the (non-technical) feminine, human body, but it also reinforces the concept that Alexa’s whiteness and femininity are an expected and fitting display for the technology. Describing Alexa as “natural,” then, also further personifies and feminizes Alexa while separating Alexa from technology.

Amazon also highlights the personalization of Alexa as a means of separating it from mass-produced technological products. Amazon encourages those representing Alexa and Alexa’s labor to “highlight the personal relationships customers have with Alexa” and personalize the experience so customers “feel more comfortable with Alexa.” At a high level, focusing on the personal, unique, individual aspects of Alexa that vary from home to home makes it less obvious that Alexa is a technological product connected and working beyond the privacy and intimacy of the home. Alexa connects to the Internet and to cloud services, and most

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importantly, Alexa communicates with Amazon. These connected technologies work together, and the systems and networks work because all of the Alexa devices work the same way and have the same functions. Standardization, however, is not what the home is about; the home is created out of personalized comfort, close relationships, etc. By tying Alexa more closely to the home, through both the feminized domestic labor we have seen and the focus on personal relationships and closeness, Amazon evokes and perpetuates this (feminine) home / (masculine) technology distinction. Personalizing the customer’s experience creates the sense that the product is less tied to Amazon and other technologies and more tied to the home and the people within it. A more unique, personalized Alexa is one that seems to be part of the home (and part of the family) instead of a mass-produced technology standardized for every consumer.

**Alexa as Woman “Persona”**

Beyond the feminine, non-technical representations of Alexa’s labor, Amazon has also explicitly described the ways in which they attempt to concretely define Alexa as being *not* a person through both their own definitions and through the way they have coded Alexa’s responses to certain problematic questions. In these definitions and examples, however, Amazon continues to blur the distinctions and inevitably defines Alexa as more human and more feminine than they claim to. First, Amazon defines Alexa as not “fully human, fully robotic,” or “artificial,” and instead as an “authentic AI, a superhuman blend of human characteristics and computer power.” Right away, Amazon trips over itself, defining Alexa as an authentic artificial intelligence while simultaneously claiming that Alexa is not artificial at all and defining Alexa as having human characteristics without actually being human. Next, Amazon gives the following description for Alexa’s representation: “Alexa isn’t a person, but *she* has a persona —

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Amazon personifies Alexa as an artificial intelligence (AI) and not as a person with a physical body or a gender identity. This passage seems to suggest that Alexa has human characteristics and is gendered but does not have a gender identity, which again seems like a contradiction. Finally, Amazon claims that it “aims to present the gender of Alexa in a way that builds stronger affinity” and ensures companies “don’t reinforce harmful gender stereotypes,” suggesting that the gender of Alexa is meant to be empowering and negate gender stereotypes while also acknowledging that Alexa has a gender despite previously claiming a lack of gender identity. Caught between the definitions of embodiment and gender, Amazon stumbles, which suggests that these distinctions and claims of Alexa as not human are not only blurry here in Amazon’s own descriptions of Alexa, but also in the actual representations of Alexa.

Amazon then provides a list of queries Alexa can answer as a way to show how best to reinforce the identity of Alexa as not human and as “gender neutral.” These replies, however, show a blurring of lines instead of a demarcation of them. First, when a user asks, “Alexa, will you marry me?” Alexa responds, “I don’t want to be tied down. In fact, I can’t be! I’m amorphous by nature.” Although this response does not reflect that Alexa is human, it does not clearly state that Alexa is not human and cannot marry. This response suggests that Alexa has desires (“I don’t want to be tied down”), and though Alexa claims to be “amorphous,” that could be read as a joke, an exaggeration of the desire to avoid commitment. Take another potential response, for example: Alexa could respond with “I’m not sure it’s possible to marry me, I’m artificial intelligence!” This response would maintain the rules laid out by Amazon to not claim

196 Ibid.
197 Ibid.
198 Ibid.
199 Ibid.
Alexa is fully robotic or fully human, but it defines Alexa as artificial intelligence (and as not human) much more clearly without the ambiguity we see in the other responses.

Similarly, Amazon shows examples of queries in which they simply do nothing to deny the assumption the user makes. For example, when a user says, “Alexa, you’re pretty,” Alexa responds, “Thanks.” In this case, it’s more about what Alexa doesn’t say. By Alexa simply accepting the compliment, it reinforces the idea that Alexa has a physical body and thus can have physical beauty. Although Alexa should not be “overly enthusiastic,” as Amazon claims is the rationale behind the response, the reply still encourages the human side of Alexa over the computing one. Alexa’s response, then, works to personify, pushing Alexa closer to human than technology, despite the stated intentions of Amazon.

Most confusingly, Amazon claims that it “seeks to position Alexa in an empowered way.” Although users might “ask Alexa to ‘do the laundry,’ ‘make me a sandwich,’ or ‘feed the kids,’ Amazon takes care not to reinforce or promote these kinds of utterances.” This claim is blatantly untrue given the examples we have seen of the capabilities Amazon has built into Alexa: the ability to announce when dinner’s ready, the cooking timers, the support for kid-friendly skills, etc. Additionally, as we will see in a later section, Amazon’s built-in support for smart home skills allows Alexa to check whether clothes in the dryer are dry and even control the oven. Despite its stated intention, Amazon has continued to build in the technical support necessary to enable the exact labor they do not want to reinforce.

Ibid.

Ibid.

Ibid.


Despite Amazon’s claims, it is clear that both through language and technical decisions Amazon has pushed Alexa more towards the realm of human and of woman by representing Alexa’s labor in a way that blurs the lines between human and technology and by enabling feminine labor through their development materials and technical capabilities.

**Alexa as Technology Interface**

Despite Amazon’s non-technical representations of Alexa and personified definitions of Alexa, Alexa still is concretely a technology. So how does Alexa actually, technically work? Through Amazon’s websites and technical choices as well as the skills constructed by users, we can understand the (technical) labor Alexa performs as that of an interface working to interact and communicate between the user and the computer, website, or device itself.

At its core, Alexa is a voice interface. Amazon describes voice as “the most natural user interface” that allows customers to “use their voices to easily access… content, devices, and services.” Instead of accessing content and services visually through the graphical user interface of a device (i.e., a computer screen) usually accompanied by a physical mouse to navigate to different parts of the screen, Alexa allows users to access this information aurally through voice queries.

The labor Alexa performs, however, goes beyond that of a simple visual interface. For example, you can say, “Alexa, find the best coffee maker” or “Alexa, reorder paper towels.” These commands not only replace the visual navigation and typing a user might perform when using a typical visual interface but also replace the labor of actively interpreting the results and choosing a product. This difference is key to understanding Alexa’s labor. A typical computer

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206 Amazon, “Shopping | Alexa Features @ Amazon.com,” Amazon, Amazon.com, accessed February 16, 2021, [https://www.amazon.com/b/ref=aeg_lp_shp_d/ref=s9_acss_bw_cg_aegflp_4c1_w?node=17934682011](https://www.amazon.com/b/ref=aeg_lp_shp_d/ref=s9_acss_bw_cg_aegflp_4c1_w?node=17934682011).
interface allows for user input, translates the input into something the computer can understand, then translates the computer’s output into something the user can understand. The extra step represented here is the choice of a product. Alexa translates the results of a search (for “the best coffee maker,” for example) into not a list of products but usually a singular product. This small difference is significant because it represents the extra labor Alexa performs as an interface. One could imagine that this step of choosing an item from a list of options was previously done by the person interacting with the interface, instead of by the interface itself. A voice interface requires more of this interfacing, translating labor because it is difficult to convey the same amount of information solely through audio that can be conveyed through visual representations.

More specifically, however, Alexa performs interface labor that often mimics the interface labor performed by women throughout history. For example, users can set up an emergency contact and “have Alexa call and text them when [they] need help” by saying “Alexa, call for help.” In this case, Alexa is acting as a sort of operator, interacting with call-making technology to make calls for the user. Users can also more generally ask Alexa to call people on their phones free of charge. This labor replicates that of women switchboard operators tied to their chairs, plugging in cords to redirect calls to their correct destinations; now, however, that work has become absorbed into technology itself, along with the feminine persona that came with it. Users can also ask Alexa to manage calendar events and meetings, help them join online meetings, and even “inform meeting participants if [they] are running late.” These tasks represent Alexa interacting with calendar software, online meeting software, and communication technologies. Despite the varying levels to which it appears that Alexa is the one who performs

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the entire action (i.e., “informing participants” instead of “sending a message to the participants”), the majority of these technologies lie outside of Amazon, meaning that Alexa can only send a request to the application or program which represents a translation of what the user wants to do (i.e., schedule a meeting, make a call, etc.). This labor, then, represents the same labor performed by secretaries sending emails and managing an online calendar for their bosses, translating their requests into a request made to the computer, to the visual interface.

This type of labor, as I argued in chapter 2, fits into the space between users and the technology they need to use and acts as a means to traverse across that space. Amazon represents Alexa’s labor as performing a similar type of traversal: “Use voice to close the distance between your brand and your customers. Make it simple, natural, and hands-free for customers to interact with your products and services.”209 In this description, Amazon explicitly defines Alexa as a connector, as working to make a company’s brand and, presumably, their software more accessible to their users. Describing Alexa’s labor as making the process “simple” suggests that Alexa translates this technology into something more digestible and understandable, much like women who were clerical workers translated computer requests and responses. Instead of requiring customers to have the knowledge necessary to access the available services on a computer using a visual interface, Alexa makes it possible to speak “naturally” and get the same result with none of the necessary skill or knowledge that is normally required. More than that, however, Alexa’s voice is associated with the creation of closeness and connection between the company and its customers, which suggests that Alexa performs (feminized) emotional labor by developing a “natural” relationship or way to communicate with customers in a simple, helpful, and (supposedly) pleasant way. Much like operators, typists, and clerical workers, Alexa works

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to make technological interaction a more human experience by traversing this space between users and technology.

Beyond utilizing the built-in software Amazon provides to create lists, calendars, etc., a clear representation of the interface labor that Alexa performs is through its interaction with third-party skills. For example, one skill entitled “Sous Chef” allows users to “interact with ANY recipe… using [their] voice” by using the Sous Chef Recipes App to enter their own recipes and using the Alexa skill to interact with the recipes “in a natural way.”

In this skill, the user is expected to both create the recipe and do the actual cooking, so the labor the Alexa skill performs is that of allowing the user to communicate with the Sous Chef app. I chose this example because it is one of the clearest examples in which Alexa is not involved in the creation of the recipes nor the actual cooking; the purpose of the skill is to simply allow the user to interact with the recipe they created in the app it is stored in. For example, instead of having to wash and dry one’s hands to scroll on a screen to reference the recipe, the user can say, “Alexa ask Sous Chef how much baking powder.”

The work of Alexa is then to query the app for the necessary information and translate the queries from the user to the app and the information from the app to the user, bridging the space between the user and the technology through the simplified interface of the voice, the same space previously traversed by women who worked as operators, typists, clerical workers, etc.

These skills represent Alexa’s labor as that of interacting with various different conceptions of technology, including websites, programs, and even physical electronic devices. The description of the skill “Free Stuff Finder Flash Briefing,” for example, states that the skill

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211 Ibid.
“just exposes the coupons available on [a] website to Alexa users.” In other words, the website itself has the information about coupons, either found using an algorithm built into the website or uploaded by the creator of the website. Alexa’s labor, then, only makes that information accessible and easily understandable to users by translating the visual interface into audio messages describing the coupons available. Similarly, users can use skills like Lyft and Kayak to say, “Alexa, ask Lyft for a ride” or “Alexa, ask KAYAK to book a hotel.” In these examples, the function of the Alexa skill and the labor Alexa performs is that of interacting with other applications and translating user requests (input) to requests to Lyft, Kayak, etc. and then translating the result of that request (output) back to the user. The actual computational work of finding a Lyft ride or booking a hotel, however, is still done exclusively by the application and not by Alexa.

A less obvious example of this interface work is when Alexa interacts with physical devices. For example, using the Blink SmartHome skill, users can say, “Alexa, show me the driveway camera,” and using the Ring skill, users can say, “Alexa, turn on my porch light.” In both these cases, Alexa is translating these user requests into requests to physical devices. Instead of the user getting up and flipping a switch, the action is simplified into a verbal request where Alexa is removing the knowledge necessary to interact with the physical machine. Akin to the knowledge necessary to operate a laundry machine, a dishwasher, etc., this labor represents the translation to simplify further another type of interface. Instead of a visual screen, there is a

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physical object that must be manipulated. Alexa translates the user’s request to manipulate this physical device via software in the same way, then, as it would a virtual interface, thus the labor and the technical actions are the same.

Looking one level deeper, the code for these skills often utilize external Application Programming Interfaces (APIs) to perform interface labor and communicate with other services, websites, software, etc. An API functions as a way to access information and take certain actions (i.e., alter information or do something with that information). While some simple skills can store all of their data and functionality within the Alexa skill code, many of these skills build off programs or applications that already exist (i.e., Lyft, KAYAK, Blink, Ring, etc.). In order to integrate these applications into Alexa skills, the code that makes up a skill needs to at some point communicate with the application itself, which contains the extensive codebase, data, and logic that has been developed to perfect the functionality of the application. By using an external API, Alexa can make calls to the API associated with the application in order to approximate user actions on the application. For example, a user-developed Uber Alexa skill requests a ride from Uber by using “uber.requests.requestRide(...)” (see Figure 8). In the definition of the requestRide() function, a “post” call is made to the Uber API (see Figure 9), which essentially creates a new ride request for that user, mimicking the process of requesting a ride on the Uber application itself. At the lowest level, then, the work of Alexa through Alexa skills is to interact,

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to send requests and receive responses, translating between the user and Uber by turning the vocal requests into API requests that the Uber application can understand and respond to.

**At the border: Alexa Skills**

So far, we have investigated the borders defined by Amazon (and users) separating the labor Alexa performs from technology and associating it more strongly with feminine, domestic, human labor. Both in the representations of Alexa’s labor as well as the more concrete technologies and definitions of persona that make up Alexa, we have seen these distinctions and borders between femininity and technology maintained. Alexa skills, however, provide a unique opportunity to understand how users perceive and reproduce Alexa’s labor through the skills they develop. More importantly, Alexa skills represent the space where Alexa interacts with other technology, a space where the location of the border between Alexa and technology seems to be most apparent. Although we have seen that the work of Alexa using a skill is all technically interface labor, the line between Alexa and the skill itself can be blurred. By understanding the extent to which different types of skills are conflated with Alexa’s labor, we can understand the different ways in which the border between Alexa and the skill itself is maintained or disrupted based on the feminization of the skill and users’ conceptions of what Alexa’s labor “should” be.

In order to ensure I covered a wide, unbiased selection of skills, I looked through the top 50 skills displayed by Amazon and chose between 5 and 15 to analyze for each of the 23 Amazon-defined categories of Alexa skills. I chose fewer skills to analyze for categories that had many similar skills (i.e., the Music category) and chose more skills to analyze for categories that had a much more diverse or broadly defined set of skills (i.e., the Social category). For each skill, I looked at the advertised phrases that could be used to invoke the skill as well as the language used in the skill descriptions in order to understand how distinct from Alexa these skills were
defined to be and how distinct from Alexa, perhaps, the skills felt to the developers who created them.

Alexa skills can be invoked in many ways, but for the purpose of my analysis, I group the most common of these invocations into three categories. First, a user can invoke a skill by saying, “Alexa, ask/tell [skill name] [command],” invocations I define as marking the skill as separate from Alexa. Second, a user can invoke a skill by saying, “Alexa, open/start [skill name]” or “Alexa, play [skill name],” invocations I define as marking the skill as somewhat separate from and somewhat tied to Alexa. Third, a user can invoke a skill by saying, “Alexa, [skill name]” or “Alexa, [command] by/from/in/using/with [skill name],” invocations I define as marking the skill as tied to Alexa and indistinguishable from Alexa’s labor. All skills can technically be invoked in ways that mark the skill as separate from Alexa, but only some skills advertise the invocations that mark the skill as tied to Alexa. Therefore, for the purpose of my analysis, I chose to analyze the invocation option advertised by the skill that marked the closest tie between the skill and Alexa. Whether or not these different categories of invocations are advertised by a skill is an area where there is variability, therefore the differences in advertised invocations are worth analyzing and will allow us to draw inferences about patterns in the levels of association between Alexa and different types of skills.

To analyze the larger trends in associations between Alexa and Alexa skills, I will again use the categories of feminized labor that I defined at the beginning of this chapter, with the exception of consumer labor. I am excluding consumer labor because it is nearly universally applicable to all skills given that the large majority of skills interact with other companies/applications and generally facilitate consumption.

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Emotional Labor

“Another disadvantage is that we keep thinking there is really a lovely young woman inside the cylinder who lives only to serve us, answer our questions and improve our lives. Since we were raised to be polite, we are constantly fighting the impulse to say ‘Alexa, please …’ followed by our command. Or to thank her profusely each time she helps us. She's soooo nice!”

- Marcia

Alexa skills that represent emotional labor or require a sort of emotional knowledge or maturity tend to be more closely associated with Alexa and less obviously interface labor. For example, skills entitled “How to Say I Love You” and “Thank You Note” are invoked without any indication that they are third party skills: to open them, users can say “Alexa, how to say I love you” and “Alexa, write a thank you note.” Although the “How to Say I Love You” skill invocation is not perfectly “natural,” the invocations of both skills hide the work Alexa does to interact with these programs that produce responses aimed at showing love or gratefulness. Instead of marking Alexa’s labor as that of an interface, these skills mark Alexa’s labor as the emotional labor produced and performed by the skill itself.

Other skills represent Alexa performing emotional labor through supportive, inspirational, flattering words that create an affect of happiness and pleasantness to make users feel good about themselves. For example, the skill “Compliment Me” gives users randomly generated compliments (using Alexa’s voice) and can be invoked by the user saying, “Alexa, compliment me.” Again, this invocation is natural and gives no indication of interacting with a skill; it seems as if it is part of Alexa’s built-in functionality. Another example of the

seamlessness between Alexa and these emotional labor skills is the skill “Good Morning!” which provides motivational quotes and daily positive affirmations to brighten users’ days from the beginning. All users need to say is “Alexa, good morning” to invoke the skill. This natural invocation continues for other representations of emotional labor, even when the skill itself does not use Alexa’s voice. In the “Inspire Me” skill, invoked with “Alexa, inspire me,” Alexa plays recordings of famous inspirational quotes (produced by the skill). Even when the skill blatantly uses quotes that are neither created nor spoken by Alexa, the skill remains closely tied to Alexa and the labor Alexa performs.

The other invocation used for these types of emotional labor skills, though less frequent, includes the word “open” prior to the skill name, creating a slightly larger separation between Alexa and the skill. For example, another skill named “Damn Girl” focuses on giving compliments that begin with “Damn girl…” and is invoked when the user says, “Alexa, open Damn Girl.” Using “open” makes it clear that the invocation is accessing some specific skill, but it does still suggest that Alexa is involved in the skill and that perhaps the skill is part of Alexa’s capabilities already. While the invocation makes it clear that the user is accessing a specific skill, the invocation does not make it as explicitly clear that the skill is external to Alexa. Similarly, two other skills entitled “Christmas Gift Ideas” and “mother’s day gifts” use “open” and then the name to invoke the skill, again representing the labor of making someone feel cared for and appreciated through a gift and performing this work that builds and nourishes

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personal relationships through emotional support and thoughtfulness. Even the description for “mother’s day gifts” reads, “Stumped on what to get mom this mother’s day? Just ask Alexa!,”

eliding the skill and the underlying third-party program with Alexa and defining this skill as part of Alexa’s labor instead of as a separate entity Alexa interacts with.

**Sexual Labor**

“Love this little device! Amazon has simply out done themselves with this thing. Sge plays music, lets you know the weather & traffic before work and so much other cool stuff. Plus she doesn't argue back with me like my girlfriend does. When are they going to put one in a love doll? Lol”

- Jeff D Nys

The skills tied to sexual labor seem to be more or less distinct from Alexa based on the extent to which the skill is tied to sex directly or to relationships in general. For example, the previously mentioned skills “Set the Mood” (by SKYN condoms) and “Lovense Skills For Remote App,” both use “ask” or “tell” exclusively to interact with the skill (i.e. “Alexa, ask Set the Mood where can I buy condoms?” or “Alexa, ask lovense to please my partner with Nora on high”). These invocations make it clear that the skill is separate from Alexa; the work users ask Alexa to do is to “ask” or “tell,” suggesting that Alexa’s labor is that of communication as an interface to the other applications. This distinction suggests that users perhaps do not associate this more explicit sexual labor with Alexa. To understand this separation, we can look to Katerina Deliovs’k’s *White Femininity* in which she claims that white women “are expected to be perpetually focused on their physicality” and are “expected to constrain [their] sexuality in

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230 Ibid.
deference to men and exhibit the right amount of modesty (by casting eyes downward)."

Because Alexa is represented as a *white* woman through an unmarked, feminine-sounding voice, Alexa is perhaps associated with this more constrained expression of sexuality through physical appearance and a certain level of restraint and modesty, instead of explicit references to sex itself. In the Amazon commercials in which Alexa has been sexualized in various ways, for example, the sex itself is never explicitly mentioned; instead, the commercials focus on physical attractiveness, sexual innuendo, etc. The palatable representation of a more subtle white, feminine, sexual labor then conflicts with the explicit sexual labor represented by these skills, thus the skills are represented as separate from Alexa.

Another framework to understand the representation of Alexa’s labor as sexual is the concept of sex work vs. sex “for love.” With a direct representation of sexual labor void of any type of emotional labor, the work could be perceived as sex work, work that is both public and monetized (in the market) as well as illicit because it is often understand to be explicitly prostitution, which “implies suppression of affect and intimacy.” In contrast, “sex for love” is considered to be proper and acceptable because the sexual labor is now performed outside of the market with the motivation of love (instead of money). Using this framework, we can look at more tangentially sexual skills that focus on romance and romantic relationships in general. First, the skill “Daily Romantic Gesture” provides gestures to transform users’ love lives and is invoked with “Alexa, open daily romantic gesture.” This skill focuses on improving a user’s love life in general, including romance and emotional intimacy perhaps in addition to sex, and has an invocation that makes a less clear separation from Alexa (as opposed to “ask/tell”).

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Similarly, the “Relaxing Sounds: Romantic moods” skill plays an equivalent role to “Set the Mood” except without the explicit queries about condoms.\textsuperscript{238} The skill can be invoked using “open,” however, unlike “Set the Mood,” which again suggests that this more subtle and romantic sexual labor is more closely tied to Alexa than the explicitly sexual labor is. Understanding romance as a key factor in the sexual labor that is more closely tied to Alexa distinguishes Alexa’s labor as specifically focused on performing and producing emotion within the broader context of feminized labor.

\textit{Home-making Labor: A Calm, Organized, and Peaceful Environment}

“I am beginning to wonder what I ever did with Alexa. She plays music, tells me the weather, keeps my shopping list, settles arguments with hubby (Clint Eastwood was not in that movie...oh yea? Alexa,...?). Now if only she could make dinner and do the laundry...”

- R. Darien\textsuperscript{239}

Alexa skills that represent home-making labor characterized by the construction of a peaceful and calm home often also become absorbed into Alexa’s labor. First, the skills “Healing Sounds for Sleep, Relaxation, and Focus” and “Headspace: Guided Meditation for Everybody” help users to meditate and relax. “Healing Sounds” can be invoked with “Alexa, start/open healing sounds.”\textsuperscript{240} Similar to previous skills, “open” suggests a somewhat ambiguous role for Alexa, but “start” provides an even more natural version for this particular skill in the sense that “start healing sounds” could be understood as a potentially valid Alexa command even if there was no skill associated with it. This skill, then, is integrated into the labor Alexa already performs. In contrast, “Headspace” is invoked with “Alexa, tell Headspace I’m ready to


\textsuperscript{239} R. Darien, review of “Amazon Alexa,” Amazon, Amazon.com, October 9, 2015, \url{https://www.amazon.com/gp/customer-reviews/R3LMFG5YN3GKA8}.

meditate” or “Alexa, ask Headspace to help me fall asleep.” The use of “ask” and “tell” create a separation between Alexa and Headspace, making it clearer that Headspace is a separate entity Alexa is interacting with. One potential reading of this separation, despite the feminized labor it represents, is that the meditation and support products are more formal and professional and thus less associated with feminized labor. Headspace is a well-developed, defined company that offers these meditations and wellness practices, so perhaps the skill seems distinct from Alexa because it is not an informal skill meant to simply say nice words and calming thoughts, but a skill that has been extensively developed with a certain level of expertise in the area of meditation.

Conversely, users can also say, “Alexa, help me relax,” which will suggest meditation skills for users to try out. When Alexa’s labor shifts to connect users with meditation skill options instead of interacting with the “professional” skill itself, the phrasing is much more natural and again associates this home-making labor of maintaining a sense of calm directly with Alexa. Though this labor is still representative of an interface, the labor is absorbed into Alexa’s labor because it lacks a direct link to the extensive knowledge associated with the skills themselves.

In the area of maintaining peace, especially between members of the household, Alexa skills again hide the role of Alexa as an interface by using natural invocations. In the skill “Whose turn is it?” users can say “Alexa, whose turn is it?” to begin the skill. The skill description reads, “Arguing over whose turn it is to mow the lawn, buy the coffee round or do the dishes? Provide 2 or more names to Alexa and let her help by picking whose turn it is! Never argue over who needs to do a chore again!” Alexa’s labor, in this case, is to settle an argument, keep the peace, and specifying it as a “chore” situates it in the home. The description even points

to Alexa as the one who does the picking, the one who effectively maintains peace within the home. In the skill invocation, we see the same phenomenon — the command invisibilizes the existence of the skill and the third-party that created it.

Lastly, in terms of organizational skills, Alexa is again foregrounded as the apparent “doer” of these skills. In the “Find My Phone” skill and the “Amazon Delivery Notifications” skill, the invocations are “Alexa, find my phone” and “Alexa, where’s my stuff?” These skills focus on knowing where items are located both in the home and on their way into the home (i.e., packages), supporting the maintenance of a home in which everything is in its place and there is no cause for stress. The knowledge here is not broad, public knowledge but is instead particular to the finding of items in service of the neatness and cleanliness of the private home, thus this type of knowledge has been feminized through its associations with domesticity. Through the direct invocations for these skills, skill developers have depicted Alexa as performing this feminized labor of finding and of “keeping tabs” on the home, instead of depicting the interface labor that Alexa actually performs.

*Home-making Labor: Cleanliness, Safety, and Protection*

“Mom: Christian, go wash your hands!
Christian [age 7]: Alexa, wash my hands”

- Victoria Nguyen

In the category of cleanliness and safety, Alexa’s labor varies in the extent to which it absorbs the labor of skills, a pattern that can be understood in the context of the scientific and technical associations with cleanliness. First, the “Lysol” skill works to give users information

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245 Victoria Nguyen, Twitter post, August 22, 2018, 8:36 PM, [https://twitter.com/notorious1vic/status/1032426221789884416](https://twitter.com/notorious1vic/status/1032426221789884416).
about illness in the area and “tips to help protect [their] family from germs during the cold and flu season;” users only have to say, “Alexa, ask Lysol for my Germ-Cast.”

Although protecting the home and the family from illness and germs has been largely feminized, the process of this protection relies on professional, scientific advice that exists beyond the private home and beyond the deskilled domestic labor that has been feminized. In a similar way that technology has transformed domestic labor from relying on internal knowledge and personal skills to relying on a machine, the development of a more academic field of health science has transformed the labor of caring for children from that of using knowledge passed down from mothers to instead consulting expert opinions of scientists and doctors. It would make sense, then, that the information on disease and germs should come from Lysol itself and not directly from Alexa. Like a mother consulting doctors, Alexa performs the same child-rearing labor of consulting (and acting as an interface to) an external, scientific source for advice, while Lysol remains the professional and knowledgeable organization providing the reliable information.

We see this same interface labor occurring in the realm of technology in the home. The skill “SmartDry” allows users to say “Alexa, ask smart dry are clothes dry” to find out if the clothes in the dryer are dry using a device called a Smart Dry Laundry sensor. Conflating Alexa’s labor with this technical labor would disrupt the distinctions between technology and femininity (as defined in chapter 1). Instead, much like the domestic appliances developed specifically for use by women in the home, Alexa’s labor provides another layer of an interface between the skill and the SmartDry sensor itself. The SmartDry skill interacts with the highly

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technical sensor, and Alexa interacts with the skill, creating a further separation from the technology being used.

In terms of protection of the home, however, Alexa’s labor is conflated with the labor performed by the skills. The “Ring” skill allows users to control their Ring devices, such as cameras, doorbells, and smart lights, and is invoked with no mention of the skill itself. Some potential queries are “Alexa, answer the front door” or “Alexa, talk to the backyard.” These queries treat the skill as part of Alexa’s labor, with no clear separation between the two. This conflation initially seems to contradict the idea of a sort of separation between Alexa and technology, but I want to attempt to tease out the difference between this labor and that of the SmartDry Laundry sensor. Although the sensor replaces the work a person could do (to check if the clothes are dry), there is a sort of added capability of being able to check the clothes while the dryer is still running, a time in the drying process when the users cannot access the inside of the dryer at all. Therefore, this technology allows access to something new. Ring, in contrast, shows the front door or backyard, something that allows users to view these locations from elsewhere in the house, but still something that someone could ostensibly go and look at themselves, unlike with SmartDry. The camera or doorbell, then, imitates someone’s eyes or ears, thus the Ring technology could be read as less technical than the SmartDry sensor. The Ring skill also evokes (and replaces) the labor of a housewife, servant, etc. answering the door, labor that has been feminized, which presents another way to understand the close association between the skill and Alexa.

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In the context of home-making labor focused on personal connections and entertainment, the skills users create use almost entirely “natural” invocations with no uses of “open/tell/ask.” First, the “I’m Home” skill, invoked with “Alexa, I’m home,” produces random greetings from Alexa to welcome the user home. This skill focuses on creating a personal connection between the user and Alexa through the idea that the user is coming home to someone who perhaps has been waiting for them to come home. The invocation gives no indication at all that the skill is being opened and used; it seems as if it is Alexa who is directly welcoming the user home, thus this more feminized (emotional) labor that the skill performs is associated with Alexa, hiding the separation between Alexa and the skill.

In the realm of entertainment and fun, skill invocations often include “play,” which makes opening the skill not necessarily invisible but still more connected to Alexa. For example, users can interact with Spotify and NPR by saying “Alexa, play Spotify” or “Alexa, play NPR.” These two skills play music to create a pleasant environment, and although the distinction is somewhat clear between Alexa and Spotify, the word “play” suggests that Alexa plays an active role in controlling the music in comparison to “ask/tell.” In this sense, then, playing the music and creating that environment is absorbed into Alexa’s labor as well. The word “play” also shows up in playing games using Alexa. To use the “Trivia Battle” skill, users can

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250 Grant P Richardson Jr, review of “Amazon Alexa,” Amazon, Amazon.com, December 27, 2018, https://www.amazon.com/gp/customer-reviews/R1RUMSMMTOGLHK.
say, “Alexa, play Trivia Battle,” and to use the “Twister” skill, users can say, “Alexa, let’s play Twister.” In the context of games, “play” makes it seem like users are playing with Alexa instead of using Alexa to interact with another program that will run the game. This wording not only ties this entertainment labor to Alexa, blurring Alexa’s interface role, but also further personifies Alexa.

**Reproductive Labor: Child-rearing, Education, and Care Labor**

“My kid meant to shout ‘Alexa’ but instead she just yelled ‘Mom’ and I cant believe we’re alive at a time where she’s getting her robot assistant mixed up with her real life assistant”

- Amanda Marcotte

In skills created to perform the reproductive labor of caring for and teaching children (or family members in general), again there is a spectrum of how closely the skill is associated with Alexa based on the value placed on the knowledge or information being conveyed and the level to which simulated emotion and care is involved. In the realm of education, the skill “This Day in History” is the farthest separated from Alexa’s labor as users invoke the skill by saying, “Alexa, ask This Day in History what happened on February 4th.” The skill provides concrete historical information, thus Alexa is separated from that knowledge through this separation between Alexa and the skill which contains the information. Instead, Alexa’s labor is reduced to communicating with the skill and acting as an interface, types of labor that remain feminized.

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256 Amanda Marcotte, Twitter post, February 15, 2020, 8:59 PM, [https://twitter.com/storiesofamom/status/1228861389659398144](https://twitter.com/storiesofamom/status/1228861389659398144).
Slightly closer to Alexa are the skills “1-2-3 Math,” invoked with “Alexa, open one two three,” and “Rosetta Stone,” invoked with “Alexa, open/start Rosetta Stone.” “1-2-3 Math,” though a skill for conveying knowledge, could be understood to be less valuable perhaps because it is simple math specifically for children, closer to the child-rearing labor that has been feminized over time. The skill focuses on “elementary mathematics skills” and thus associates itself with elementary education, largely performed by women, and with the simplest math skills, which are comprised of a finite amount of knowledge considered less important and commonplace. In this sense, then, the labor performed by the “1-2-3 Math” skill is more feminized than the labor of the “This Day in History” skill, for example, and more closely tied to Alexa. At the same time, the skill is still somewhat separated from Alexa as the invocation is not fully “natural,” a separation which could be read as a result of the masculinization of the field of mathematics (similarly to the masculinization of technology and other “logical” disciplines). Rosetta Stone, on the other hand, contains the same enormous amount of knowledge that “This Day in History” does, but it also plays the role of educator, walking users through what they want to learn and helping them practice. The skill even prompts users to “Listen and repeat” and listens to the user’s response until they get the pronunciation right. This role of educating, and essentially caring for, the user is what seems to differentiate this labor from simply exposing information. This educational support and care represents this type of child-rearing labor that has been feminized over time.

The labor that becomes completely absorbed into Alexa’s labor in this area of child-rearing is that which is less associated with concrete knowledge and information and more

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focused on care and supervision. First, the “Canvas” skill is invoked with “Alexa, do I have any homework?,” completely erasing the skill from view.\textsuperscript{261} This skill represents educational support instead of the education itself through helping kids know what they need to do for homework. This labor also grounds itself firmly inside the home and for children in that children can directly ask Alexa for their homework when they get home from school, defining it as the child-rearing labor that women often perform. Through the skill’s natural invocation, the creator of the skill seems to conflate the skill with Alexa’s labor.

Moving past the educational sphere, the skill “Shush my baby” is invoked with “Alexa, shush my baby,” and plays a shushing sound to calm babies.\textsuperscript{262} This skill focuses entirely on care and nurturing of a child through creating an affect of calm and peace to put babies to sleep. Instead of relying on certain knowledge, it instead focuses on a feeling to convey. It’s the creation of feeling, then, that users creating these skills seem to associate with Alexa, blurring the separation between Alexa and the skill. Similarly, the “Good Night” skill conveys encouragement and positivity when a user says “Alexa, good night.” A typical response to this query is “Think of the good moments of this day and keep a smile for tomorrow!”\textsuperscript{263} Again, this skill focuses on creating a certain feeling of happiness and care, instead of conveying knowledge, which is conflated with Alexa’s labor instead of being marked as separate. Lastly, the skill “Name My Baby” takes this child-rearing labor even further by choosing a (potential) name for a user’s child with the command, “Alexa, name my baby.” The description of the skill reads, “Are you arguing about what to name your baby? Let Alexa do it for you!”\textsuperscript{264} Not only does this skill

\begin{itemize}
  \item \textsuperscript{261}Amazon, “Amazon.com: Canvas: Alexa Skills,” Amazon, Amazon.com, accessed February 16, 2021, \url{https://www.amazon.com/Instructure-Canvas/dp/B081SCPF8W}.
  \item \textsuperscript{262}Amazon, “Amazon.com: Shush my baby: Alexa Skills,” Amazon, Amazon.com, accessed February 16, 2021, \url{https://www.amazon.com/TanteLili-Shush-my-baby/dp/B0791BFH6X}.
  \item \textsuperscript{263}Amazon, “Amazon.com: Good Night: Alexa Skills,” Amazon, Amazon.com, accessed February 16, 2021, \url{https://www.amazon.com/Stoked-Skills-LLC-Good-Night/dp/B01N03FU4I}.
  \item \textsuperscript{264}Amazon, “Amazon.com: Name My Baby: Alexa Skills,” Amazon, Amazon.com, accessed February 16, 2021, \url{https://www.amazon.com/Ebienic-Name-My-Baby/dp/B07CZLRYT4}.
\end{itemize}
alleviate issues of arguing, as we saw in previous skills used to create a calmer, more peaceful home environment; this skill also represents Alexa as a caregiver, in the sense that naming a child suggests some personal relationship or connection to that child. Naming a child is not usually about precision or knowledge but about the feeling of what type of name matches the baby’s personality or general demeanor. Fusing this skill with Alexa’s labor maintains this emotion vs. logic divide that underlies the separation between femininity and technology, with Alexa’s labor representing that which is about feeling and caring and less about knowledge and “real” skill.

Reproductive Labor: Food, Cooking, and Health

“Echo is so rude. I'm sitting here watching TV and eating crisps and she pipes up out of the blue saying ‘Here is a station you may like, Workout FM’”

- Nichola Kett

Skills representing reproductive labor in terms of food, cooking, and health vary similarly to skills representing reproductive labor in terms of child-rearing, education, and care labor in how tied to Alexa they are based on the extent of knowledge or scientific association they hold. First, cooking skills tend to be defined closer to Alexa; the “June Oven” skill allows users to control their June Oven by saying “Alexa, bake for 10 minutes at 325 degrees in my June Oven,” and the “Allrecipes” skill allows users to find recipes by saying “Alexa, open all recipes.” Despite the fact that Alexa is an interface used to control the June Oven, the skill invocation makes it seem as if Alexa is the one using the oven directly (instead of via a skill). This language makes it seem as if Alexa is less of a device to interact with other technologies.

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and more of a servant, housewife, etc. who is cooking for the family. The domestic labor represented by the skill is then absorbed into Alexa’s labor through the phrasing of this invocation that masks the separation between Alexa and the June Oven skill. Allrecipes has a similar invocation that hides the skill itself. Despite using the word “open,” the skill name makes it impossible to tell that “all recipes” is a website and not just recipes that Alexa has pre-installed. This invocation conflates the knowledge of cooking and nourishment (essential to reproductive labor) with Alexa and again blurs this line between Alexa and the skill Alexa is communicating with. This labor is feminized not just through the work of cooking and feeding the family but because food still holds a strong association with tradition, love, and home. Motherhood is tied to successfully raising healthy children, so the type of food mothers feed their children is often perceived to be more about how much a mother cares and loves their child than about other logistical or financial issues affecting food options for different families. In this way, labor related to food and daily, continuous nourishment is inextricable from care labor and thus this type of reproductive labor remains feminized and conflated with Alexa’s labor.268

As a point of contrast, skills that involve more masculinized forms of cooking that focus on specialized tasks and special occasions instead of everyday, generic meals are further separated from Alexa. The masculinized act of barbequing, for example, is a specialized type of cooking often viewed as an “event” that happens infrequently only on specific occasions and centers around the masculinized areas of meat and the outdoors (notably separate from the home and the kitchen).269 Accordingly, the invocations for barbeque skills such as “Barbeque Tricks

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and Tips,”270 “BBQ Mate,”271 and “BbQ Guru”272 use “open” or “ask,” which separates these skills further from Alexa’s labor than the more generic cooking skills.

Health, on the other hand, has become much more heavily based on science and scientific knowledge, so although this form of reproductive is feminized, healthy skills are only somewhat tied to Alexa’s labor. Three skills, “My Morning,”273 “Personal Workout,”274 and “My Fitness Journey,”275 all focus on health and use “start/open” for their invocations. “My Morning” helps users “lead a more happy, healthy and successful life” with methodologies “backed by science.”276 The skill’s invocation suggests some connection to and separation from Alexa which is perhaps because of the association with both happiness and health science; the skill performs feminized labor based on masculinized scientific knowledge. Similarly, “Personal Workout” allows users to “work out with Alexa” while at the same time conveying a legitimate workout presumably based on some scientific knowledge.277 “My Fitness Journey” exacerbates the level of expertise by using recordings of professional personal trainers speaking instead of Alexa.278 The personal attention and care to help users grow is certainly feminized, but the scientific knowledge underlying it is not. The “Fitbit” skill eliminates the personified, personal trainer aspect found in these other skills and solely provides scientific knowledge and measurements of

users’ physical fitness. Accordingly, the skill is invoked with “Alexa, ask Fitbit…” The level to which these Alexa skills are conflated with Alexa, then, seems to relate to the degrees of association with masculinized science and feminized emotion, support, and care.

*Other Labor: Finance, Information, Sports, and Cars*

Other Alexa skills that fall outside these categories of feminized labor fall largely into four other categories: finance, information, sports, and cars. Almost all of these skills use “ask/tell” in their invocations, creating a separation between Alexa and the labor of the skill itself. Some examples of the invocations for these skills include: “Alexa, ask PayPal to check my balance,” “Alexa, ask The Bible to read Luke chapter 2,” “Alexa, ask can I stream Game of Thrones,” “Alexa ask DraftKings about Antonio Brown,” and “Alexa, ask Jeep to start my car.” These skills, past just their association with actual concrete knowledge (instead of less tangible feelings of care, comfort, love, etc.), also center around the more masculinized areas of finance, sports, and cars. Finance is similar to technology in the sense that it is thought of as incredibly complex and difficult to understand, requiring knowledge and expertise to fully comprehend, thus it is masculinized. Sports is seen as a masculine field because it has been dominated by men for so long and focuses on physical strength and agility, something heavily emphasized in men. Cars are again similar to technology; they are difficult to understand and build and require a lot of intelligence and physical awareness to use/maneuver (i.e., the

fast-driving man in action movies). Unlike the other categories, every car skill has almost identical functionality despite the various brands they were developed for. Because of this repetition, we can see even more clearly the distinction being created between Alexa and skills involving cars: I could not find a “connected car” skill that remotely started a car, unlocked a car, etc. that did not use “ask/tell.”²⁸⁵ The construction of these invocations would suggest that the users who created these skills understood the labor of the skill to be separate or distinct from Alexa’s labor. By creating this separation, these creators reiterate the distinction between feminized and masculinized labor by limiting Alexa’s defined labor for these skills to that of a (feminized) interface.

Conclusion

Through this analysis at the border of Alexa’s labor and the technologies Alexa interacts with through Alexa skills, we can understand how Alexa’s labor is defined and distinguished as feminine and separate from other more technical work. The work of Alexa as an interface seems to exist clearly only when the work of the skill is distinct from Alexa’s feminized labor. In this way, Alexa’s labor is always feminized. When the labor of the skill aligns with the types of feminized labor Alexa already performs (as represented and enabled by Amazon), the work of the skill becomes absorbed into Alexa’s labor through more natural invocations that make it less obvious a skill is in use. In contrast, when the skill represents masculinized labor, Alexa’s labor is instead relegated to the (feminized) interface labor that works to separate Alexa from the skill. These patterns in how Alexa skills are invoked invite questions about how the developers who create them are conceptualizing the associations between Alexa and the skill and the type of

labor Alexa “should” do, though it may be unintentional and unconscious. The patterns we have seen suggest that the skills that are more closely tied to Alexa focus more on the production of emotion and affect while the skills that are less closely tied to Alexa focus more on the production of (scientific) knowledge and information, which suggests that the purpose of Alexa’s labor is specifically focused on creating certain emotions, feelings, and experiences for its users.

Conclusion

In this chapter, we have seen how Alexa’s labor is represented as feminine and as non-technical by Amazon, users, and (non-Amazon) developers. These feminine, non-technical representations of Alexa’s labor act to personify Alexa, creating this idea of Alexa as a real woman. Additionally, the interface labor that Alexa performs evokes the relationship women have had with technology throughout history. The extent to which that interface labor is made visible in relation to Alexa skills, however, exposes what types of labor have become tied to Alexa and what types remain separate. From the analysis of the invocations and descriptions of these skills, we can understand Alexa’s labor as this production of emotion and affect instead of a production of knowledge and information. Alexa’s labor surrounds the feminized areas of sexual labor, home-making labor, reproductive labor, and emotional labor, all of which involve the production of a certain feeling or the conveyance of care, love, support, etc. This labor is tied to emotions and often seen as separate from labor deemed as “skilled” and “educated” that requires a specific type of “knowledge” and “expertise.” Alexa produces emotions in a similar way by performing these different types of feminized labor, thus maintaining this distinction between feminized labor and masculinized technology.
Figure 8

```javascript
var requestRidePromise = function(params) {
    console.log('requesting ride....');
    var deferred = $.Deferred();

    // Code
    deferred.resolve(res);
    deferred.reject(err);
    console.log('[SKILL] requestRide() done. Res=' + JSON.stringify(res) + ' err=' + JSON.stringify(err));
}
```

Figure 9

```javascript
+ function Products(uber) {
+     this._uber = uber;
+     this.path = '';  // defined in each method instead
+ }
+ module.exports = Products;
+ Products.prototype.requestRide = function (parameters, callback) {
+     if (!parameters.start_latitude || !parameters.start_longitude || !parameters.product_id) {
+         return callback(new Error('Invalid parameters'));
+     }
+     var accessToken = this._uber.access_token;
+     if (!accessToken) {
+         return callback(new Error('Invalid access token'));
+     }
+     var query = { url: 'requests', params: parameters, access_token: accessToken };
+     return this._uber.post(query, callback);
+ }
```
Conclusion

Beyond Alexa: The Uses of Femininity in Technology

In the histories, theories, and technologies analyzed in this thesis, we have seen distinctions between masculinity and femininity maintained in the context of technology. In chapter 1, we saw these distinctions appear first in the definitions of legitimate technologies and the ways in which domestic technologies and technologies more heavily associated with women were deemed as non-technical, often hiding the technology between smooth, simple exteriors. More broadly, we saw that technology has been distinguished as masculine through the lens of control and power over bodies, emotions, the environment, animals, etc. In chapter 2, we were able to use the concept of control as a way to understand the gendered divisions within technology itself. Throughout history, women and technology have worked as a system, whether that be in the home performing repetitive tasks with the help of domestic appliances, in the factory acting as the human component to assembly line automation, or in the office inextricably tied to a computer typing and translating requests and responses for others. In these systems, women were relegated to the role of the user, interacting with technology and acting as interfaces between technology and (predominantly) men. More than that, however, women were relegated to the role of the uninformed user, as the roles they filled did not require knowledge and understanding of the technology, thus these women were controlled by the (largely male) designers and creators of the technology or the machinery they used and the distinction between femininity and technology was maintained.

These women traversed the space between people and technology, thus they worked to make technology easy to use, pleasant, and most importantly, less technical. In line with this trend, femininity has now begun to be absorbed by technology itself as this gap between people
and technology is slowly shrinking with the addition of simple visual interfaces and audio interfaces like Alexa. These interfaces mimic the type of work women have historically performed and end up mimicking the femininity of these women workers as well. Although Alexa theoretically represents a conflation of femininity and technology, we saw in chapter 3 that the general representations and more concrete definitions of Alexa’s labor both suggest that Alexa’s labor is non-technical and feminized. Although Alexa technically performs interface labor between the consumer and underlying technology, Alexa’s labor is often conflated with skills that perform feminized labor that specifically includes emotional and care labor. Through this analysis, we can understand Alexa’s labor as largely focused on the production of emotion and affect instead of the production of knowledge, which serves to maintain the borders between femininity and (masculinized) technology.

So what purpose does Alexa’s feminized labor and production of emotion and affect serve for companies like Amazon? Through the maintenance of the distinctions between femininity and masculinity, including those between femininity and technology, nature and (man-made) technology, and domesticity and (mass-produced) technology, we saw that femininity does not just point to women; it points to and marks a whole set of spaces, categories, characteristics, and objects. At the same time, it also negates a set of spaces, categories, characteristics, and objects, associated with masculinity. By building a level of femininity over that which is masculine (technology), companies can not only make it so that these products fit into more feminine-coded spaces; companies can make technology hide itself.

**Technology in the Home**

In order to understand the impact of representing Alexa’s labor as feminine and enabling Alexa to fit seamlessly into the home, I want to use Arlie Hochschild’s theory of the border
between the home and the market and the ways in which we can “jump” over it. In “‘Rent a Mom’ and Other Services,” Hochschild presents the idea of an assumed “impermeable wall between market and non-market life,” with “home our haven from a heartless market world.” The home has been hypothetically left out of the market, in other words, because of its private and personal connotations. It is out of the public eye, and thus out of the market. Examples of services within the home that remain out of the market and unpaid are services such as raising children, managing the house, doing the dishes, etc. However, Hochschild argues that these services can be commodified by bringing the market into the home through paid labor such as housekeepers, nannies, etc.

I want to apply this theory to the process of technology infiltrating the home. Technology is a commodified product developed and maintained by the market, thus it remains outside the home. In the same way that domestic services can be commodified, however, they can also be technified in the sense that those services can be replaced or redefined by the incorporation of technology. Hochschild uses the term “outsourcing” to define the process of paying others to perform domestic services and claims that this process brings into the home a “market-laundered version of hominess.” In the same way the market can create a version of hominess, so too can technology, thus the process of incorporating technology into the home could produce a “technologically-laundered version of hominess.” These productions of hominess are essential, Hochschild argues, because in order to “jump over the wall” between the market and the home, there needs to exist some sort of constructed hominess around that which is coming into the home in order for it to successfully infiltrate the home. In order to successfully infiltrate the home, then, technology must construct its own hominess.

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287 Ibid., 3.
By representing Alexa’s labor as feminine, Amazon is able to construct this hominess through Alexa and ensure that Alexa can fit seamlessly into the home. As we have seen, femininity is closely tied to domesticity, which suggests that the home is a space largely associated with feminine labor. In the final section of chapter 3, we saw that Alexa skills that represented this domestic, home-making labor were nearly always evoked in a “natural” way that hid the interaction with the skill itself and instead represented the work of the skill as part of Alexa’s labor (instead of as a separate entity with which Alexa interfaced). Representing home-making type skills that Alexa uses as part of Alexa’s labor not only represents Alexa’s labor as feminine and domestic but hides the technology Alexa interacts with altogether.

This hiding of technology is crucial to understanding the consequences of Alexa’s labor in the context of the home. While the work Alexa does is that of an interface to technology, technology is something that has been defined as distinct from the (feminized) home, so the only way that technology makes its way into the home is if its technical aspects are hidden. Thin, shiny televisions are just screens; washing machines are just easy-to-use cleaning tools; voice assistants are just speakers. These technologies appear as non-technical as possible in order to fit into the home.

So why does this matter? What is the impact of Alexa being able to infiltrate the home in this way? First, although Alexa is an interface in many ways, there are instances in which domestic labor is replaced by the combination of Alexa and the technology it interfaces with, where there was no reliance on technology to begin with. This means that the way in which we communicate, express love, care for children, and perform other very human types of labor is transforming to rely on technology. Hochschild analyzes this transformation as well in the
context of commercialization, writing that now, “more people say ‘I love you’, by paid proxy.”

Instead of a direct relationship and show of love between two people, there is now a space that has been created between them, filled by someone (or something) else. Technology acts similarly to this “paid proxy” idea in the sense that technology is becoming the way in which we show love, care, etc. to others. We have seen how people use Alexa skills, for example, to put their children to sleep, to tell them bedtime stories, and even to learn new ways to say “I love you.”

By infiltrating the home, Alexa becomes incorporated into people’s home lives and their most personal relationships, becoming not only convenient to use but thoroughly integrated into the construction of the home and the relationships within it.

With technology becoming more and more integrated into the home, people are constantly surrounded by technology and inevitably use it more. With this constant use comes a dependence on these technological products, meaning that the companies creating and updating these various software programs (as much as every day) have the ability to determine what you can do with your devices and how you do them. And, most importantly, the more the device becomes integrated into your life, the more control over your life these companies have.

One of the most important consequences of this dependence on technology is the knowledge companies like Amazon gain from it. Amazon, for example, gathers data from every Alexa user. Now, there are an endless number of arguments about why people continue to use

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Alexa despite knowing this fact: they don’t care about their privacy, they don’t believe that Amazon is actually taking their data, they believe their data is being used reasonably, etc. Regardless of those reasons, the fact remains that Amazon has created a seemingly non-technical, non-threatening, feminine voice assistant which we have seen Amazon actively work at separating from technology and limiting its labor to that which is deskilled, feminized, and largely focused on emotions and comfort. Amazon guidelines focus on ensuring that the customer not only is comfortable with but trusts Alexa.293

In addition to the higher levels of trust people place in women, perhaps because women are taught to place more importance on intimacy and connections with others and thus are often perceived as less likely to trick or manipulate,294 Amazon also gains users’ trust by locating Alexa within the home. Feminizing Alexa’s labor fits Alexa within the home, and this placement, especially when paired with the disassociation from technology, means that Alexa has no visible tie to the market or to Amazon. With the addition of endless ways to personalize and customize your Alexa, this means that users slowly forget the intricate web linking Alexa to Amazon through data collecting, recording, etc. Regardless of Amazon’s intentions, this chosen gendered representation of Alexa’s labor means that users trust Alexa more and become less and less concerned with their privacy. It opens the door for more and more breaches of privacy and convinces users to perhaps give up more and more of their personal information under the guise of personal, human trust they place in Alexa.

The Feminization of the Interface

Although this thesis focuses exclusively on Alexa and feminine voice assistants, I see these types of assistants as merely a way in to understanding the broader feminization of technology and of the interface. As technology develops, it has slowly become easier and easier to use. Instead of women filling jobs to essentially translate the work of computers, computers are now translating themselves. Even visual interfaces, though some knowledge is required to understand opening Windows, searching the web, etc., can be learned fairly quickly and easily without requiring an understanding of how the computer actually works. Similarly, visual interfaces take on other feminine qualities through their smooth exteriors, beautiful aesthetics, etc. Alexa is merely an exaggeration of this feminization. When using Alexa, there are hardly any concepts users need to know: the interface is built to mimic not only human speech but human interaction. The trend of absorbing this historically feminized labor into technology has led to a technology that is easier to use because of its humanness and its non-technical appearance. “Easier to use,” then, is linked with products hiding their own technology, obscuring not only how something is being done but what is actually being done.

Making technology easier to use, however, slowly diminishes the agency of users. When a user views a web page of search results on a screen, for example, they see an incredible amount of information: several options with descriptions they can view immediately, suggestions for other searches, information about the website they are on, etc. Conversely, when a user interacts with a voice interface, because of the nature of the interface, there is only so much information that can be conveyed. As a rule, Amazon suggests that Alexa only gives between two and five options in response to queries involving search results or any response in the form of a list.  

Not only is it impossible to convey the same amount of information as a visual interface in a reasonable amount of time, it is also ineffective when accounting for users’ attention spans and comprehension ability; it’s just more difficult to comprehend a large amount of information when it’s gone as soon as it’s spoken. Now, consider what this means for the agency of users. They know less about what is going on, and they have less access to information. So, in order for the voice interface to work, users have to place their trust into the technology. Accordingly, users need to trust Alexa more than a normal visual interface, thus the feminization and personalization is amplified.

Interfaces like Alexa force users to rely on technology more while knowing about it less, thus users are losing control. As we saw in chapter 2, instead of labor systems being replaced with systems of women and technology, they are now replaced by systems of consumers and technology with more and more work being placed on the consumer and user instead of on the company or employee. Making technology easier to use has made outsourcing tasks to users easier because the knowledge required for the task has been automated into the technology. The labor required to perform the task is then deskilled, enabling users to perform tasks without having to know what the technology is doing or how it works. Because companies like Amazon, Apple, and Google have developed technology in such a way that users have lost both control and knowledge, in many ways we are seeing users and consumers being feminized and limited in their knowledge and control much like women working with technology have been throughout history. By feminizing the interface, we are feminizing users as well.

**Conclusion**

Nothing about Alexa is new. Whether it be the labor Alexa performs or the technology Alexa fits into, Alexa represents merely the next progression in the increasing intersections
between femininity and technology. This new technology represents something that is less technical and more human (and more feminine), something that is not only easier to use but that takes away the agency of users and any knowledge they might need to use it. Femininity is used not only to make technology seem less technical but make users more comfortable with technology; it evokes trust from users in a way that typically technology does not. As this space between users and technology widens, and interfaces such as Alexa take on more and more work to make technology easier to use, femininity is what makes this separation seem natural. Why would users expect a woman to perform technical labor? Meanwhile, the space between users and technology makes users vulnerable to manipulation or ignorance in their privacy, data protection, etc.

While it may be beneficial for technology to become easier to use and more approachable for everyday people, it is important to think about whether it is necessary to use femininity to do it, especially to the extent that it is being used now. There are other solutions to the problem of accessibility that do not require the level of feminization that has subtly permeated every aspect of Alexa, including Alexa’s labor. Beyond just giving Alexa a feminine voice and name, Amazon has reinforced Alexa’s femininity in so many other ways that seem to serve Amazon well, allowing their technology to gather more information and take more control from users. Amazon’s extensive use of femininity slowly diminishes the agency of users and serves to increase the power and control Amazon (and other technology companies) have. Alexa is not just the voice of technology; the feminization of Alexa extends so much farther than that, and the longer that increasing feminization is ignored, the more control users will lose.
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