“We’re talking eggs and we don’t mean brunch”:

The Gendered and Racialized Discourse of Fertility Care

By

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To folks on their complex journeys to conception, especially at the social margins.

To my parents, Justin and Mimi Kim, who shaped me, my dreams, and my passions.

To my joy: my daughter Noa, who was simultaneously birthed alongside this dissertation.

To Asher Benedict, without whom my wildest dreams would not be possible.

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INTRODUCTION

"Get pregnant, smarter: Wearable sensors, artificial intelligence, and deep machine learning may not sound that sexy, but it's precisely those technologies that allow our clinically-proven fertility tracker to detect—not just predict—the five days a cycle when you're most fertile. What you do with that information is the sexy part."

- *Ovu's email advertisement sent on Valentine's Day 2020 titled: What's nine months after Valentine's Day?*

"First comes love, then comes marriage, then comes baby in the baby carriage." This old-fashioned children's rhyme represents the way many in U.S. American society used to think of conception: one simply falls in love and children will follow. Conception was viewed as natural and unplanned; it either happened or it simply did not. Today, things look substantially different. The rise of scientific and technological advancements now allow us to track, plan, avoid, and actively *produce* babies. From phone applications, to in-home fertility tests, to intrauterine insemination, we find ourselves in a time and space where people of reproductive age have seemingly endless options to craft their "reproductive careers." As a consequence, experts and the lay public alike have come to accept the notion of preconception, the time before conception, as a new stage of reproduction that is important for both fertility health and positive birth outcomes. However, the rising importance of preconception raises new questions about increased medicalization—and surveillance—of women's bodies, as well as enduring concerns about the circulation of racialized logics within emerging fertility technologies.

My dissertation addresses the intellectual, material, and social problem of how we deal with a new landscape of the fertility health industry that is populated with these new, technological possibilities. In particular, I focus on how women and men interact with these fertility-based technologies, as well as with the companies that produce these devices and the professional experts they employ. Through attention to interactions with reproductive technologies that mostly live in consumer homes and online, I consider three questions 1) How are fertility health companies marketing in these digital spaces? 2) How do both company and consumer practices reify old conceptions of reproduction as a "woman's purpose" and obligation, instead of one shared by male partners? And finally, 3) what are the ways in which this gendered responsibility is racialized as a distinctly "white woman's duty," thereby reproducing disparities in reproductive medicine and fertility care? Through an exploration at the intersection of medicine, technology, and surveillance, my work considers how gendered, racialized logics of "a white woman's duty" are reproduced and legitimized through the emerging landscape of consumer-driven fertility technology.

STUDYING REPRODUCTION

The history of women's reproductive bodies reflects many symbolic transformations in society: from being seen as natural and healthy to pathological and abnormal, from informed by woman-centered knowledge to masculine, technology and scientific based knowledge, and from a diagnosable model of healthcare back to a community-based, women-led, natural model (Brubaker and Dillaway 2009). In focusing on preconception, my research locates itself at the center of this current transformation. Where childbirth has been the center of many debates shifting these definitions, what Miranda Waggoner (2017) calls the zero-trimester or

preconception, the time before conception, reveals the growing gaze of medicine on women's reproductive bodies. Today, the growth of technological innovations increases the possibility, availability, and accessibility of conception. These shifts also simultaneously change societal expectations of women. The shifts in societal definitions and responsibility that I study are through the growing areas of preconception and fertility care.

Preconception and fertility care exist within a complex history. The Women's Health Movement in the 1960s and 1970s sought to link women's health and alternative medicine by encouraging women to gain control over their own bodies and health by recognizing the body, mind, and spiritual connections in addressing health issues (Morgen 2002). Fighting against specific issues like the medicalization of childbirth, women in the Women's Health Movement were highlighting the need to take back power through their own knowledge of their bodies and experiences through the adoption of more gentle and safe methods such as complementary and alternative medicine (Salmon and Berliner 1980). Women were rallying around sharing and legitimizing their own experiences and knowledge of their bodies, seeking to act collectively to change the health care system for women and all people.

In the 1970s and 1980s, natural childbirth movements bolstered demands for consumerism and more patient choice in childbirth (Bourgeault et al 2008). Originally started in the United Kington in the 1930s and later transformed in the 1970s in the United States, the natural childbirth movement went through many shifts (Michaels 2014). In 1933, Grantly Dick-Read introduced an alternative to the conventional, anesthetized birth common among women of privilege in Great Britain (and the United States). This technique was called Natural Childbirth or the Read method. Concerned that not enough middle and upper class white women were having babies, Read suggested that Natural Childbirth would make for a happy delivery,

allowing for the "eugenic minimum" (Michaels 2014:22). Although Read's method was initially rejected by mainstream obstetricians, it—along with the unanesthetized childbirth method pioneered by Lamaze—struck a chord with Americans starting in the 1950s. Both methods were initially intended to make laboring women more docile, and easier for physicians to handle; but they were transformed when they came into contact with the women's health movement in the 1960s and 1970s. By the 1970s the movement was deeply concerned with childbirth, seeking demedicalization as a way to resist the patriarchal authority of male physicians (Michaels 2014). While the women's health movement aimed for women to take control of their own bodies and health, in practice, complementary and alternative medicine often operate to increasing medical surveillance and control over all aspects of women's lives. Not only are women now monitoring their own bodies, but also their feelings, beliefs, and thoughts. Today, from preconception to fertility to childbirth, we continue to see this tension between medicalization and the "natural" and holistic.

Pre-pregnancy care is an area of reproductive health that exists between a tension of empowering women with knowledge while simultaneously growing responsibility and surveillance. Preconception visits are now covered under insurance for women, allowing women to seek medical care from their obstetrician gynecologist before conception (Waggoner 2017). Today, preconception is adopted by not only medicalized sites, but also in sites actively seeking demedicalization and/or a convergence from conventional medicine, such as holistic, woman-centered sites. Many holistic, midwifery clinics offer preconception courses and visits taught by wellness coaches and midwives. Often seen as a safer and gentler route, holistic medicine offers what is seen as a more natural approach to preconception health (Keshet and Simchai 2014). The avenues through which women can, or should, seek care before conception have increased

beyond the medical and into the nontraditional, "natural" sphere as well (Barker 2014; Bobel 2002; Reich 2017).

This growing realm of knowledge and responsibility seemingly allows for more chances and control over conception. Women used to seek clinics for infertility after prolonged periods of trying. Today, we see new sites for women to seek care even before trying to conceive. These sites are primarily online, centered on a technological advancement, such as in-home fertility testing and fertility tracking bracelets. Targeting women, these communities try to demystify the science of fertility, making knowledge accessible to women by women. Though these communities are centered on fertility, their focus is often larger, spanning across a larger net of women's reproductive health. They cover topics from how to deal with polycystic ovary syndrome and endometriosis, to how one can find trustworthy medical information in an age of disinformation and "fake news."

Despite all of the social and technological changes in reproduction, it remains a "woman's issue." We see rich literature, scientific knowledge, political debates, and personal anecdotes center women as the main topic of reproduction and fertility health. It's rare to see scientific information, politics, and/or consumer goods in reproductive health center their mission around men and their bodies (Almeling 2020). Yet, men remain half of the equation in terms of reproduction. Reproduction and fertility are important sociological sites because they construct one of the core contexts in health where men and women are treated as equally important: conception and fertility require both a sperm and an egg. Therefore, it is a unique site to be able to examine unmarked social groups: more specifically in my case, men. My project seeks to examine how men *are* addressed in this area of health: how men are factored in at the structural level, how women talk about men, and how fertility and reproductive health are framed

towards men. Our conversations, at the micro, meso, and macrolevel, around fertility usually do not mention men (Almeling 2020). My dissertation, however, will try to fill that silence through investigating two fertility companies that specifically target male consumers.

While reproduction is understood as a "woman's issue," what kind of issue it is considered to be depends on race. In the US, women of color, immigrant, and enslaved Black women historically have been forced, coerced, and compelled into sterilization and experimentation that built the foundations for today's birth control and gynecological knowledge. For my dissertation, I draw from this important history and ask the following questions: How do ideologies of gender and race reproduce disparities in reproductive medicine and fertility care? More specifically, how is biomedicine a site that reifies the racial hierarchies that exist in society? I explore these questions through what I define as fertility health -- encapsulating hormonal disorders, preconception health, the focus on hormones, menstruation and ovulation, and the ability to conceive, bear children, become pregnant.

Further, when examining gender in reproduction, we see rich literature focusing primarily on women of color in relation to reproductive justice, and then we see the rest of the rich reproduction literature that examines mostly highly educated, white women. So often, this is because the mainstream arena of scholarly work within the sociology of reproduction is largely white. Much of the literature cites race as a limitation in the discussion section for another scholar to examine. Yet, in actuality, they ***are*** studying whiteness… which is race. They simply fail to offer a critical examination of white spaces and whiteness. Thus, my work adds to the literature by critically examining this unmarked social group of whiteness.

Through this sociological site, I provide a unique snapshot into systems of power by examining unmarked social groups: in particular men and whiteness, and how these markers

speak into health disparities. This empirical site gives us the tools as social scientists to apply, name, question, and dismantle systems of power that go typically unnamed and unquestioned under the guise of "normal." Through my research, I argue that the discursive and material strategies of fertility health companies is informed and defined by gender and race, thereby promoting a new racial phenomenon I call colorblind eugenics.

The dissertation draws on data from a multi-sited, digital ethnography conducted between 2017 and 2020. I use cutting-edge techniques of digital ethnography along with in-depth interviews to understand gender and racial asymmetries in health discourse. Sometimes the discourse operates through largely privileged frames, reaching populations that have the time, money, and means to not only find and access the information but also enact the practices taught in their lives. At other times, the discourse operates through condemnatory frames, shaming women into increasing their likelihood of conception. Still, companies and other institutions focus largely on women. Wanting to reach women from menarche, these organizations and providers want to increase empowerment of women through knowledge of their own bodies. However, this also increases the burden on women alone to be prudent and knowledgeable consumers as potential mothers.

Framed as being beneficial to health before, during, and after birth, preconception and fertility health are expected to lead to better health outcomes for women throughout life. While wanting to fight knowledge barriers for women, these organizations do not fight barriers to access, thus limiting their consumer base. Similarly, fertility companies focused on men acknowledge the lack of research around men's reproductive bodies.

THEORETICAL FRAMEWORK

Medicalization is a process that touches all of our lives, especially in the Western world. For some of us, the medicalized experience starts at birth or even conception. Medicalization is defined as a process by which conditions and problems become medical through diagnosis, prevention, intervention, treatment, and/or medical study (Conrad 2010; Conrad and Waggoner 2014). Medicalization is not a static process, rather, one that is contextual and diverse, evolving with different engines and mechanisms at play (Conrad 2007; Bell 2016b). Scholars have shown how the process of defining human problems in medical terms can act in the reverse: through demedicalization and back around through remedicalization (Carpenter 2010; Conrad 2007). Further, some scholars focus on biomedicalization, representing the evermore complex processes of medicalization that are extending through new social forms and practices, with an emphasis on corporatization and privatization (Clarke et al. 2003).

Feminist scholars have raised questions about the disproportionate impact of medicalization on women's lives (Riessman 2003; Armstrong 2003; Kempner 2014; Martin 2001; Roberts 1997; Waggoner 2017; Rapp 2004; Riska 2003). For example, Armstrong (2003) points to the social nature of diagnosis in her study of the case of Fetal Alcohol Syndrome (FAS), showing how FAS pivoted on the idea of women as moralized vessels for fetuses. Kempner (2014) similarly examines how migraines in particular, though excruciating and common, are frequently dismissed because of gendered beliefs and social values around pain. Increasingly as well, medicalization defines the infertility experience (Bell 2016a; Bell 2016b) while also shaping fertility treatments and parenthood (Mamo 2007). Now, not being able to become pregnant after a year of trying is a disease called infertility, with many medical interventions suggested such as assisted reproductive technology. Through medicalization,

women have been affected, sometimes positively and sometimes negatively (Riessman 2003; Barker 2009). Positive health outcomes are always desirable, but at what cost are women being surveilled and expected to trust healthcare providers over their own known experiences and truths?

Medicalization of Reproduction

Reproduction has been understood as closely linked to the medicalization of women's bodies (Conrad 2007; Riessman 2003). Society used to see birthing and reproductive processes as something not requiring medical intervention, which had the effect of keeping authority and knowledge within the hands of women (Wertz and Wertz 1990). Women birthed at home with the help of other women and midwives (Conrad and Schneider 2001; Wertz and Wertz 1990). The growth of medicalization over women's reproductive bodies shifted authority into the hands of medical authorities and officials, leading society to see these processes as pathological (Riessman 2003). Science was presumed to be masculine and unbiased, the opposite of what midwifery was understood to be historically (Howell and Harden 1995; Wertz and Wertz 1990). The importance of professional training, mastery, and scientific authority were on the rise with male doctors endorsing the idea that extensive interventions in birth were important, retreating from the prior-assumed adequacy of nature in childbirth (Wertz and Wertz 1990; Conrad and Schneider 2001). Thus, today women overwhelmingly see childbirth as needing medical intervention, placing hospitals to be the primary, normative birthing site (Kozhimannil et al. 2013; Davis-Floyd 1992). Yet pregnancy has become an important site of contestation in regards to the medical gaze, pulling women in and out of medicalized sites (Miller and Shriver 2012; Carter 2010; Martin 2003; Howell-White 1999).

The medicalization of women's bodies and processes have shifted the meaning of conception, fertility, and childbirth (Conrad 2007; Riessman 2003). We even see how reproduction has become medicalized before conception through what Waggoner (2017) calls "the zero trimester," leading women to monitor their health three months before intended conception. These targeted times of a woman's reproductive life, such as preconception and fertility, are now being watched more closely by society and healthcare contexts: not only when she's pregnant, but even before she's trying to conceive (Waggoner 2017). The increase of technoscientific innovations has increased not only the chances of fertility but also simultaneously the burden on the individual woman and what she is expected to control. While infertility, a disease, has interventions, my research will explore how fertility itself is a new overlapping reproductive stage that may be merging with preconception and infertility, urging women to be ever more aware and responsible.

However, our scientific knowledge around preconception is far from certain. The science around pre-conception and pre-natal care that drives the medicalization of preconception is far from certain or fully verified (Waggoner 2017). As a society, people are also largely unaware (scientifically) of how fetuses are affected by such care. Still, these agendas are strongly supported by the Center for Disease Control (CDC), consumers, and providers. Daniels (2016) shows similar patterns, where state-authored informed consent materials regarding embryological and fetal development are medically inaccurate. Much of the misinformation is regarding the earlier weeks of pregnancy and is clustered around particular bodily systems of the fetus, giving more personhood. Although there is medically inaccurate information given by the state, courts make distinctions between "medically inaccurate" and "medically and scientifically uncertain," pointing to a pattern where there is less scientific certainty in the first trimester,

where over 90 percent of abortions are performed (Daniels 2016). Therefore, during pre-conception and pregnancy, women are expected to be informed beings; however, the information given to women is often inaccurate or misleading (Daniels 2016; Waggoner 2017).

Fertility and preconception, as parts of life that were formally seen as natural and unplanned, now offer a unique site to explore the effects of scientific innovations increasing the realm of possible reproductive health outcomes (Mamo 2007). The natural childbirth movement expanded as a response to the medicalization of women's bodies, especially childbirth. Natural, midwifery clinics and fertility communities are an extension of this movement, driven by women's desire to gain autonomy over their own health and bodies. Yet, these very communities are also growing and becoming more possible based off of scientific advancements. Now we are in a moment where this medical gaze has gone beyond medical clinics, into the natural, feminist, and female-dominated spaces as well. Further, women are expected to seek these spaces even before conception (Waggoner 2017). Western biomedicine has a history of co-opting feminist institutions and women's health clinics (Clarke and Olesen 2013). Yet we know very little about how the dichotomy of natural versus medicalized is playing out in terms of preconception and fertility in healthcare contexts and individual experiences. Things that were once unplanned, such as conception, can now be planned through fertility watches, trackers, and careful diet. Thus, it is important to examine what this split between natural and science looks like, especially when these models of reproduction are framed in terms of a woman's autonomy and seeking to separate from medicalized childbirth/model.

Gendered Discourse of Reproduction

Reproduction itself operates as heavily feminized (Alemling 2020; Alemling and Waggoner 2013; Alemling 2015; Martin 1991; Daniels 1997). Daniels (1997) shows how the segregation of men and women through the reproductive process leaves women to bear the burden and blame for any sort of harm to the fetus or child. Societal expectations of women and their bodies often lead to biased science, continuing this disproportionate burden for women alone (Daniels 1997; Waggoner 2017; Armstrong 2003). In fact, biased knowledge has continued to shape how we understand (or fail to understand) reproduction and men (Alemling 2020; Daniels 1997; Waggoner 2017). The lack of scientific knowledge around men's role in fetal health perpetuates a separation where women are seen and surveilled as sole carriers of responsibility (Waggoner 2017; Daniels 1997). Structural and cultural barriers keep men out of the equation of reproduction (Alemling 2020; Alemling and Waggoner 2013). Still, we do not understand how and whether this is actually being enacted on the individual and institutional level in relation to preconception and fertility. There is little work examining how men are conceptualized as participants in these stages at the physician, patient, and institutional levels. This is particularly important because these are the exact stages where men and their sperm are just as important to understand and include as women and their eggs.

Risk culture also acts as a macro-level process that drives constant surveillance and how we understand health as a society. Risk is culturally defined and plays an important role in defining rhetoric around danger, illness, deviance, and the individual (Lupton 1993). Deborah Lupton (1993) argues that risk definitions can be considered a hegemonic conceptual tool that maintains power structures of society today. For example, environmental contamination presents as one threat to reproduction; however, medical professionals concentrate on smoking, drinking,

and exercise to often view environmental containments as gendered, individualized responsibilities (Oaks 2000; Stevens 2016). Along these lines, scripts cautioning against fetal alcohol syndrome, second hand smoke, and childhood over-nutrition are all housed with punitive and value-laden language to discuss fetus/children's risk that is put on the mothers alone (Armstrong 2003). Individualized behaviors of mothers are constructed as dangerous when framed as damaging their children (Bell et al. 2009; Blum 2015).

Combined with the increasing focus on individuals and individuated responsibility over health and outcomes, society is now locking all individuals into pre-disease states, especially women's reproductive bodies (Aronowitz 2009; MacKendrick 2018). Combining cultural and moralized ideas of femininity and good mothering, women are held to a higher standard of maintaining health, revealing how women's most salient role, as defined by contemporary society, is that of a mother and that women are seen as independent, responsible, reproductive vessels (Armstrong 2003). Women's reproductive bodies are constantly under surveillance, whether through legislation or mother blame. In this dissertation, I look at the way that discourse around reproduction is gendered. Ample ethnographic research documents the surveillance on women and their reproductive bodies (Daniels 1997; Waggoner 2017; Almeling 2011; Stevens 2018). I use this empirical case to examine how men *are* addressed in this area of health: how men are factored in at the structural level, how individual women talk about men, and how institutions frame fertility and reproductive health when they are targeting men.

Racialized Discourse of Reproduction

The boundary separating "good" and "bad" reproductive embodiment is implicated with other structures of inequality, notably race and ethnicity (Glenn 2002; Roberts 1997). Reproduction

scholars have turned their attention to the ways in which a woman's cultural significance is tied to her value as a mother (sources from above). Yet, race and health scholars have shown how not all women are valued are the same, leading women of color, particularly Black mothers, to have worse health outcomes. Thus, it is important to examine how the "good" and "bad" are being framed through the racialized discourse of reproduction. Further, critical whiteness scholars have shown how white women frequently see themselves void of race (Frankenberg 1993; Twine and Gallagher 2008).

Reproduction is embedded in the physical body and thereby inherently raced. The history of reproduction and reproductive knowledge in the United States traces back to the exploitation of enslaved Black women, inhumane gynecological testing on women of color, and the forced sterilizations of immigrant and Black women (Roberts 1997). Work like that of Khiara Bridges (2011) starts by examining how care of pregnant and birthing women is shaped by race and class, reflecting onto prenatal education, labor, and delivery. Studies on long-acting reversible contraception (LARC) unavoidably point back to race with women of color being particularly mistrusting of LARCs due to our nation's history of sterilization (Stevens 2018; Gomez et al. 2018). LARCs are perceived as coercive to women of color, many of whom report having providers refuse or resist removal of devices upon request (Stevens 2015; Hoggart et al. 2013; Littlejohn 2013; Mann et al. 2018; Gomez et al. 2018)). Not only are women mistrusting but providers also draw on racialized discourse to describe patients' resistance to contraceptive methods (Stevens 2018). These stereotypes lead providers to see black women as causing cycles of poverty through their financial irresponsibility and uncontrolled fertility (Stevens 2018).

Infertility is more likely to affect black women than white women (Chandra et al. 2013). Yet, our research and interventions focus on those who can and want to access treatment

(Johnson and Johnson 2009; Bell 2014). Individuals receiving treatment for infertility reflect dominant ideas of who is infertile: white, heterosexual, and wealthy women (Bell 2016). In stark reality, half of all infertility cases can be attributed partly to men, with women of color having slightly higher rates of impaired fecundity than dominant ideas (Bell 2016). The literature links infertility to assisted reproduction in who seeks alternative methods to family formation. Scholars have examined the medical market for sex cells and other technologies to assist reproduction (Almeling 2011; Markens 2007). Historically, in-vitro fertilization (IVF) has historically been advertised with white babies that have blonde hair and blue eyes (Roberts 1997). It is unsurprising, then, that there is a widening gap between the way black and white families seek alternative methods of family formation and how technologies such as IVF reinforce and reflect existing racial hierarchies in the United States (Roberts 1997).

Popular representations of reproduction are racialized, affecting how women of different racial categories are treated differently through public policy and discourse (Waggoner 2017; Solinger 2013). The 2013 Show Your Love campaign is set of materials created by the CDC to encourage and help organizations' involvement with preconception health. Through an analysis of the materials of the Show Your Love campaign, Waggoner (2015) outlines the racialized tropes used. The white couple is presented as responsible planners. The young African American woman is displayed as single and working as a student. The Latina mother is shown as having diabetes while her partner Juan, though mentioned, is not present in the video.

Today, the medicalization of infertility perpetuates a stratified system of reproduction through structural inaccessibility reflecting racialized perceptions of fertility. Medicaid mandates contraceptive coverage for its recipients while private insurance through employer-based insurance policies do not. Medicaid does not offer coverage for infertility treatments while some

states such as Illinois mandates employer-based insurers to cover infertility treatment (Bell 2014). Akthough racialized, fear-driven tropes depict women of color as hyper-fertile and irresponsible, the actuality is that more women of color are infertile compared to their white counterparts. Thus, there are clear mismatches between the actual reproductive needs of women of color and societal messaging.

In fact, racial exclusion is the very foundation of the social, political, and cultural order upon which the United States rests (Feagin 2006). In this dissertation, I argue that despite some minority involvement, fertility health culture is informed and defined by whiteness, thereby promoting a new racial ideology I call colorblind eugenics. This explicitly targets fertility health and interventions towards white women, while claiming to remain non-racial. Bonilla-Silva describes colorblind ideology as "the superficial extension of the principles of liberalism to racial matters that results in 'raceless' explanations for all sort of race-related affairs" (2015:1364). I use this concept and apply it to the culture of fertility health created by companies. The history of fertility health, especially birth control, cannot be separated from eugenics. Eugenics fueled the birth control movement as a national mission while giving the authority of reputable science. The American Birth Control League espoused an explicitly eugenic policy of promoting birth control among Black women, women of color, and immigrants, labeled as socially unfit, and promoting more children among the rich and white. At the same time, positive eugenics promoted the reproduction of the genetically advantaged, defined as intelligent, healthy, and successful. This work will explore this new area of preconception and fertility critically, seeing whiteness *as* racial.

RESEARCH DESIGN AND METHODOLOGY

To answer my research questions, I conducted fieldwork in the United States, spending time observing and participating in digital online communities focused on fertility health companies that offer services including a fertility watch and an in-home fertility test. To highlight the framing of fertility health by such companies, I compared these sites, which have differing platforms and reach different populations. I examined how the interactions between providers, consumers, and organizations defined and framed fertility health, paying particular attention to the frames that are gendered and racialized. The Vanderbilt University Institutional Review Board approved this study under the category of quality improvement under the determination of non-research.

Further, from here on out, I use pseudonyms for organization and individual names to respect the privacy and intimate details of individual journeys. I also obscured details, such as specific cities and exact wordings of blog titles, in order to protect the identities of those collected. My IRB also restricted me from collecting data on details, such as names and birthdays. Therefore, I decided to keep full confidentiality for individuals and to offer the same courtesy to the companies. Although I did not fictionalize any information, I obscured specific details that were not essential to the analysis of my data.

Digital Ethnography

The following analyses of fertility health begin with three years of participant observation of four fertility health companies, their content, and online communities. My fieldwork turned into a digital ethnography, given the popularization of online communities, and due to the nature of these technological, fertility products. Digital ethnography applies an ethnographic approach to

digital methods and digital media: internet usage, online communities, mobile devices, social media platforms (Abidin and de Seta 2020). My research entailed an ethnography of digital products and services in digital spaces. I did many staple readings like Markham and Baym's edited collection *Internet Inquiry: Conversations about the Method (2009)* to more recent conversations such as Boellstorff et al.'s *Digital Ethnography: Principles and Practice* (2016), and foundational readings such as Hine's *Virtual Ethnography* (2000) in order to be able to dialogue with epistemological terms and to maintain methodological integrity. Thus, I situate myself as an ethnographer within the field of fertility health. I positioned myself as a researcher within a digital platform, seeking to understand the context of these digital tools, products, platforms, and everyday situations. Over the course of three years, I focused on immersive storytelling and participation of users.

This work is a digital ethnography due to the immersion of technology in the spaces I examined and observation of the real-word environment. I observed respondents in their natural environment, which was active, live, and changing. Digital ethnography "consider[s] how people live and conduct research in a digital, material, and sensory environment, and explore the consequences of the present digital media in shaping the techniques and processes through which they practice and how the digital, methodological, practical, and theoretical dimensions of ethnographic research are increasingly intertwined" (Pink et al. 2016:76). My conceptualization of my unit of analyses makes my work a digital ethnography rather than content analysis or archival work. I thought of my data, whether it be blogs, conversations, or webinars, as living, changing, and social rather than as social artifacts. Simultaneously the way I interacted with and collected data was similar to that of traditional ethnography, where I was immersed in the field as an observer and at times as a participant.

While much of the data is available online publicly, I collected data situated as an ethnographer: seeking to understand the fertility health world and its social relations. I immersed myself into the communities, exploring and examining fertility health culture, especially framed as the culture created by companies.

Site Descriptions

My dissertation examines digital technology in a digitally literate world. Today, we live in a world where smartphones are omnipresent, interfacing with technology is our norm, and our health is no different. My research dives into this burgeoning field of reproductive technologies that mostly live online and through online spaces. In a pilot study for an ethnography on birthing clinics, I found myself immersed in the world of fertility and preconception health. During this time, partially due to surveillance capitalism (Zuboff 2019), many of the targeted advertisements I received when online were in the realm of digital technologies in fertility health. In particular, one company kept popping up: Ovu. Ovu is an ovulation tracking fertility watch and a company that I included in my data analysis. As I started to collect data with Ovu as a site, I then started to see more targeted ads, one of which was for Fertility Today, the other company for women I included. Once joining the online communities for women, Ovu and Fertility Today, I kept seeing the names of men's fertility companies coming up: the two most mentioned were Path and Good Dude, both of which are also included in my study.

This lead to the finalization of the four sites included in my study: two for women (Ovu and Fertility Today) and two for men (Path and Good Dude). At the time that I started collecting data in 2017, while consumers needed to pay for the products, much information was free and publicly open. I needed to apply to gain access to Fertility Today's online Slack community

through an online form. The questions were simple, asking for my email, name, age, and other basic descriptive questions. The form appeared to be mainly a formality for data collection rather than a barrier or gatekeeping mechanism. The online community for Ovu, however, was strictly for consumers who purchased the watch and were trying to conceive. One needed a specific purchase code from their watch to gain access into this community. I gained access through the head of marketing, whom I interviewed for this dissertation. I got to know this individual through the connection of a sociologist who was interviewed by Ovu.

As I wanted to examine how companies frame fertility health today, these sites were found through an iterative process. I spent a few months searching for sites and felt that the same companies kept coming up. Therefore, the four companies I include are the four companies that kept popping up for me, either through targeted advertisements or through mentions by consumers. Akin to traditional ethnographic methodology, I observed the field I was in to orient myself to the information that consumers see and consume. Through this process, I included all information that consumers are exposed to as data. Thus my unit of analyses include the products themselves, online blogs, webinars hosted by the companies, the organizations, the employees of the organizations, and the consumers. The consumers of the companies are largely women, even for the companies targeting men. These men-focused companies offer far less interaction between consumers and also between the companies and consumers as well. All of the consumers are of reproductive age, mostly between 25-40 years old. Also, many of the consumers of women's products have hormonal disorders, such as polycystic ovary syndrome, or are turning to these products as a last hope before turning to assisted reproductive technologies, such as invitro fertilization. A big focus of these companies is fertility health, thus, many consumers are looking into their health while avoiding the term "infertile."

Here, I will overview what these companies look like, what data I analyzed, and how I analyzed it. I will start with the companies for women. Ovu is a company based on an ovulation tracking watch. The watch is baby blue, worn on the wrist when going to sleep, and syncs data to a laptop or phone app. The company is an international company with the headquarters for the United States in a large technology hub. For $299, women can purchase a "clinically proven fertility tracking bracelet. It comes with a sleeker strap, optimized sensor pod for better comfort, and a vibrating alarm. It uses sensor technology to reveal what's really happening with your cycle—whether you're trying to conceive, are pregnant, or simply want to better understand your body." Women also gain exclusive access into an online community. For an additional $100, women also get an e-book to fertility journeys and a one-year guarantee of pregnancy (or your money back). This site also has blogs on getting pregnant, pregnancy, and reproductive health. Ovu simultaneously has "Ovuworld," where the company publishes articles and blogs on reproductive and fertility health. Ovuworld is open and free for all individuals who have access to the website. The company hosted a couple of webinars during the covid-19 global pandemic. They also have an online community, which they call "Ovu ambassadors" through the platform of Facebook. This private group has 15,600 members, all of whom gained access by purchasing the Ovu watch itself.

The second site for women is Fertility Today. This company is centered around an in-home fertility test. They offer "the only comprehensive fertility test you can take in your jammies" to help you achieve your goals. They are centered on "physician expertise without the clinic price." By purchasing a fertility test for $159, women are given a one on one consultation with a fertility nurse and are able to join a weekly "Egginar" to get answers. This site also offers an online community for modern women called the "Matriarch" in the beginning of my data

collection. Now, they call it “Modern Community.” The Modern Community uses the platform Slack, which is a channel-based messaging platform. Individuals must purchase the fertility test to gain access to the Slack channel. Further, they must fill out a form to gain access. Through the Slack channel, many hashtags (e.g., #maybe-one-day) feature different themed conversations among users. Fertility Today features numerous online blogs with content around the topics fertility, birth control, hormone testing, reproductive health, modern women, and modern fertility. Near the end of my data collection, they also launched ovulation predictor kits and pregnancy tests, available through Amazon, Walmart, and the Fertility Today website, and a free phone app. Fertility Today is based in the United States, headquartered in the same technology hub as Ovu.

I examined two sites for men: Good Dude and Path. Good Dude offers a semen analysis test at home for $189. It is “the only lab-certified, mail-in semen analysis that exceeds all standards for FDA validated semen analysis methods.” They also offer semen analysis and cryopreservation for $189 and $140/year. They offer three vials stored to protect fertility and to be used when trying to conceive. At the end of my data collection, the company also launched a vasectomy test for $120 that tests the success of a vasectomy. This test was not included in my data collection because it was launched during my analysis of data collected. Their website has tabs for their test, “our science,” and “for doctors,” and when scrolling to the bottom of the website, there is a link for “blogs.” When clicking “blogs,” a page titled “Fertility News” comes up with options for three categories: Trying to Conceive, For Partners, and Health and Wellbeing. Notably, this company does not offer webinars or any sort of interaction between users and employees. Further, neither of the women’s websites offered blogs “for partners.”

Path is a company for men that offers a male fertility test. Path is a pseudonym used. However, since data collection began, another company actually started with the name Path for fertility. These two are not to be confused. Path offers two tests for $89.99, four tests and a 90 day improvement plan for $149.99, and 6 tests with a 150 day improvement plan for $199.99. The improvement plans look like downloadable PDFs: a 27 page man's guide to reproductive health. Path offers a quiz on their website to test the "six signs you're ready to test your sperm." Their website has the following tabs: Technology, Optimize Your Fertility, Products, Blog, Support, and Buy Path Now. The articles on their blog have many subcategories and are archived by date from 2013-2020. Like Good Dude, Path did not offer any interactive feature such as blogs or online communities.

Data Collection

New generations of ethnographers are often familiar with digital media. Yet, this familiarity with digital media does not always mean a flawless interaction or smooth entree. I started my entrée with Fertility Today as a paying customer. I gained entry into the online community through my purchase, but identified myself as Ph.D. student researching fertility health as well. From this online community of womxn (the term they use), I learned about Path and Good Dude, as these womxn were paying consumers of not only their own products, but also of their male partners. For Ovu, I never paid for a product. Through an introduction from a sociologist who interviewed with Ovu, I was connected to their head of marketing and online communities. Through an interview with her, she granted me access and entry into their online community so I could do more research.

Halfway through my data collection, I myself started trying towards conception and became pregnant in 2019 and gave birth in 2020. Through my own process, I decided to become more of an outsider when collecting data. I had been in the field since 2017, but starting in 2019 I collected data solely as a researcher and not as a participant. Personally, it felt unethical to interact with individuals, especially ones struggling to get pregnant.

As mentioned above, each company provided different information and services. As a researcher, I was interested in these products and how they were being marketed to the consumer. Thus, I interviewed four individuals: one from each company, primarily connected to leadership roles and marketing. However, I was much more interested in the information that consumers received. As these companies are situated in a consumer-based market, I wanted to see the images that consumers see, understand how they internalized this information, the worlds that these products lived in, and how consumers held each other accountable to standards of health and consumerism.

Thus, I analyzed the blogs featured on all four websites, attended all the webinars hosted by Fertility Today and Ovu, especially during the global covid-19 pandemic, and collected field notes within the online communities. I also analyzed Ovu's Instagram page in particular, because they did a large portion of their marketing and outreach through this social platform. Ovu paid individuals on Instagram to market their goods by sending them the watch for free and offering commission off of each product purchased using their unique code. During the global covid-19 pandemic, I reached a point of saturation in data collection.

The rise of the pandemic came in the middle of my data collection. I had the intention of trying to attend in-person events and spend time with the company's employees. However, my personal timeline in conjunction with the spread of coronavirus led me to conduct a strictly

digital ethnography. In fact, I was one of the lucky researchers whose sites became more abundant and rich during this trying time. Companies increased the amount of interaction online through webinars, live question and answer sessions, and individuals simply became more comfortable interfacing online for their health. Telemedicine, the distribution of health-related services and information via electronic information and telecommunication technologies, increased greatly with most doctor-patient visits being hosted through a telehealth appointment online. Amidst a global health crisis, I was able to collect data.

In a moment of deep gratitude and humility, I address the uncomfortable situation of being a researcher who was in a position to gain something from this crisis. With over half a million deaths in the Unites States alone, and disproportionate amounts of death among Black, Brown, and Indigenous communities, most people had nothing to gain, and everything to lose during this pandemic. In my sites, women were wrought with anxiety, as their expensive and taxing journeys to conception came to a halt through orders of the American Society for Reproductive Medicine. The future was unknown, and it appeared dark and heavy. Many of my participants lost their jobs and relinquished their dreams of starting a family. Further, many researchers and Ph.D. students, especially ethnographers, had to put year-long stops to their data collection. I was lucky enough to pivot in a way that enriched my project, but this was not the case for most.

I also want to take a moment address what was going on in the United States during my data collection: the global pandemic, widely circulated videos of police shootings, and social movements. In May 2020, George Floyd was murdered by the police in Minneapolis, Minnesota, sparking the mobilization of many social movements, especially Black Lives Matter. The social movement was nonignorable, with companies all over the country putting out their own personal

statements on Black Lives Matter and protests erupting all over the country. The year 2020 was also the year of a particularly fraught presidential campaign in the United States, with Donald Trump being defeated by Joseph Biden. Donald Trump was the president during the outbreak of the global covid-19 pandemic, calling the infection the "Kung-Flu," spreading hatred and fear of Asian communities, blaming China for the virus and spread. Thus, Stop Asian Hate, a social movement, emerged as well. These happenings in the United States affected all my data, my collection, my participants, the communities I observed, the communities I belong to, and the communities I am aligned with. I am deeply indebted to the social movements that came before me, that made a way for me, as an Asian-American first generation immigrant, and for movements that are to come, dismantling systems of oppression and white supremacy.

DISSERTATION OVERVIEW

This dissertation examines how fertility health and reproduction are shaped both discursively and materially, and by doing so, contributes to the re-conceptualization of reproduction itself as an unrealistic and intensive responsibility foisted on women primarily while also buying into colorblind eugenics. Specifically, this study examines the following three research questions:

(1) How is fertility health being understood and marketed by companies? Are "natural" spaces and formally "technoscientific" spaces being maintained as separate within these stages of reproduction?

(2) How does race frame the discourses through which reproduction is being understood and what consequences do the different frames have for populations targeted, for example, enabling or limiting access to women of color? Is there a point where the discourse becomes racialized or racist?

(3) How are men factored into the equation within reproduction? How does gendered discourse offered by particular frames tilt the narratives, information offered, and responsibility assigned in specifically realistic and unrealistic ways?

In chapter 2, I explain how I use West and Zimmerman's concept of "doing gender" to explore how masculinities and femininities are negotiated through the strategies of fertility health companies. My focus on doing gender generates three insights into gender and fertility health culture. First, I show how fertility health companies and consumers are doing gender in non-traditional ways, exploring how masculinities and femininities are negotiated in fertility health culture. Second, I explore how doing gender has different implications for men and women within fertility health circles. Fertility health companies and consumers are contesting particular gendered relations within a context of unbalanced creation of knowledge around reproductive and fertility health. Yet, I reveal how despite this contestation broader gender inequalities persist and are reified. Lastly, I contend that even within efforts to redo gender in ways that may seem equitable, these shifts continue to implicate women as the main actors in reproduction.

In chapter 3, I present the concept "colorblind eugenics" to explore the intersection of colorblind ideology and white habitus within fertility health culture. Previous research has pointed to the gendered and racialized assumptions and practices embedded within reproduction

and reproductive health; fewer researchers have considered and centered critical whiteness. Scholars who do interrogate how both race and gender structure reproductive health tend to focus on predominately women of color through reproductive justice or miss centering race as a central variable. Building on these insights, I reveal the reproduction of the privilege of whiteness displayed through the strategies of fertility health companies through contemporary technologies geared towards conception and fertility health as products (and producers) of whiteness and white spaces.

Chapter 4 examines technological innovations in fertility health, drawing on Foucauldian approaches to health in the modern world. Feminist scholars have powerfully documented the emergence of a "postfeminist" sensibility that emphasizes women's agency while framing consumer choice as a source of empowerment. Engaging this theoretical work, I argue in this section that these technological innovations in fertility health work to remediate a tension around neoliberal consumer culture: the tension between empowerment through consumer choice and embodying discipline through control. My analysis explores how women manage this contradiction in their everyday health choices. Further, my work looks at the interesting ways the social construction of intimacy, normal, and scientific are deployed within these realms and through these products.

In the conclusion, I tie together the overlapping themes of gender, race, and the social construction of knowledge that run through the previous chapters. Additionally, I discuss the implications and broader significance of this research and propose future directions.

CHAPTER 2

DOING, REDOING, AND REPRODUCING GENDER IN THE FERTILITY HEALTH INDUSTRY

Fertility health— encapsulating hormonal disorders, preconception health, the focus on hormones, menstruation and ovulation, and the ability to conceive, bear children, and become pregnant— is a key aspect of social life and a central object of public policy. Reproduction and fertility health sustain *all* human life, yet healthcare and social scientific analyses in these areas focus primarily on women (Almeling 2020). In this chapter, I explore how fertility health companies "do" gender and health as they negotiate cultural norms regarding fertility, health, and gender within online spaces. In order to do so, I ask the following questions: How are men factored into the equation within fertility health? How does gendered discourse offered by particular frames tilt the narratives, information offered, and responsibility in specifically realistic and unrealistic ways?

This chapter challenges static universal representations of fertility health and gender, which neglect men: asking how men are factored at the structural level of health, how women talk about men, and how fertility and reproductive health are framed towards men. While fertility health culture is by no means gender-neutral, companies and individuals are enacting gender in ways that warrant closer inspection. This chapter puts forward new empirical findings about gender and fertility health while employing the concept of "doing gender" to explore how masculinities and femininities are negotiated in fertility health, especially framed through discursive and material practices by companies. My focus on doing gender generates three insights into gender and fertility health culture. First, I show how fertility health companies and consumers are doing gender in non-traditional ways, exploring how femininities and

masculinities are created and negotiated in fertility health culture. Second, I explore how doing gender has different implications for women and men within fertility health. Fertility health companies and consumers are complicating and resisting particular gendered relations within a context of unbalanced creation of knowledge around reproductive and fertility health. Lastly, I argue that even within efforts to redo gender in ways that may seem equitable, these shifts in understanding gender within fertility health continue to implicate women as the sole actors in reproduction.

DOING GENDER / DIGITAL FERTILITY HEALTH INDUSTRY/MARKET

My approach to gender is informed by theories which approach gender as a practice that is continually enacted in social relations, rather than a stable, embedded property that resides in individuals (Connell 2005; West and Zimmerman 1987). In "Doing Gender," West and Zimmerman use a sociological approach to gender as a "routine accomplishment embedded in everyday interaction" (1987; 125). Pushing back against social learning theory, West and Zimmerman examine the interactional work involved in "doing gender" and emphasize that gender is not something you are; rather, something that you do in interaction with other people and yourself in specific situations and contexts. Many years later, West and Zimmerman revisit the idea of "doing gender" and argue that "gender is not *undone* so much as *redone"* (2009:118). Namely, the dynamism of gender relations are continually situated within a larger understanding of social structures and institutions. This helps to theorize and think about the flexibility of gender from situation to situation. Gender is an interactionist accomplishment. It exists because individuals are doing it. Interactionist studies of gender often root themselves in critical

interrogation of inequality, for "to do gender is often to do power" (Brickell 2005: 38). Thus, this chapter adds to this literature by examining inequality within fertility health.

I focus on digital fertility health, a burgeoning market that developed as a result of an increasingly technologically literate society. In this chapter I analyze four fertility health companies: Ovu, Fertility Today, Path, and Good Dude. Two companies, Ovu and Fertility Today, focus on women. The other two companies, Path and Good Dude, focus on men. Ovu is centered around the product of a fertility tracking watch and an online community for its consumers. Fertility Today as a company produces ovulation strips, pregnancy tests, an ovulation tracking app for phones, an in-home hormone test, and an online community for its users. In contrast, Path and Good Dude, the companies for men, feature online blogs and in-home sperm analyses, lacking any sort of formal online community. Following, I examine how these companies, their products, employees, and consumers reinforced and/or reimagine gendered ideals and norms within fertility health.

This growing realm of knowledge and responsibility seemingly allows for more chances and control over conception. Women used to seek clinics for infertility after prolonged periods of trying to concieve. Today, we see new sites for women to seek fertility-related care even before trying to conceive. These sites I examine are primarily online, centered on a technological advancement, such as in-home fertility testing and fertility tracking bracelets. Targeting women, these communities try to demystify the science of fertility, making knowledge accessible to women by women. Though these communities are centered on fertility, their focus is often larger, spanning across a larger net of women's reproductive health. They cover topics from how to deal with polycystic ovary syndrome and endometriosis to how one can find trustworthy medical information in an age of fake news.

DOING & REDOING GENDER

Companies and employees are aware of the narrative that reproduction and fertility are understood as "women's issues," with men almost completely absent from reproductive health research, thus, they attempted to counter this narrative by redoing gender in meaningful ways. Almost every employee I interviewed raised the issue of this imbalance unprompted. In women's spaces, however, marketing drew on scientific language, stripped of any traditionally feminine norms. Rather, there was a heavy emphasis on evidence-based science and medical jargon. In men's spaces, this attempt was made by trying to ensure the content to be relevant through a normative lens of hegemonic masculinity while also centering the idea of fatherhood, intimacy, and romance.

Women's spaces

"Knowing your cycle doesn't have to be a complicated science, but Ovu can help you be your very own data scientist."

Women's sites, employees, marketing and consumers drew on scientific language, emphasizing evidence-based science and medical jargon. Like all companies included in this study, Ovu, the women's fertility health company based off an ovulation tracking watch, featured many informative blogs on their website. These blogs centered evidence-based science, using citations, and having each article be labeled as "fact-checked," a teal oval that matches the color of the watch's band with a check mark, displayed at the top of each article next to the publishing date. An overview of the titles of blogs reveals this heavy emphasis on evidence-based science, claiming it as unbiased in an unfair and biased medical world where women lack proper

treatment and diagnosis. Some of the titles are: “Ovu Publishes Peer-Reviewed Clinical Paper,” “How The Ovu Algorithm Predicts Fertile Windows,” “ How to Analyze Your Ovu Chart Like a Data Scientist,” “Hormones 101: Finally Understand Reproductive Hormones,” and “The Science Behind PMS During Your Cycle.” Both Ovu and Fertility Today, the women’s sites I examined, equip women with science-based evidence and medical language so they can be aware, educated consumers in a medical world that has often ignored women’s agency. While Ovu says that “knowing your cycle doesn’t have to be a complicated science,” the company still ironically insists in the same sentence that “Ovu can help you be your very own data scientist.” Acknowledging a hierarchy of knowledge, these women’s companies seek to support women by using traditionally-masculine scripts to legitimize themselves and their customers. Drawing on science and evidence, these women’s companies redo gender in meaningful ways, using masculine ideals to bolster their product and knowledge.

Ultimately, women’s sites were setting women up to be their own advocates and experts of science and their bodies. Fertility Today and Ovu both make a point that women need to be more educated about their own bodies and be their own experts. Ovu points out that...

> Here at Ovu, we give new employees a quiz to test their knowledge of a woman’s cycle. It’s basic stuff that everyone should know, but almost no one gets a perfect score. Why? Part of the problem is that they don’t do a good job teaching this stuff in most sex-ed programs.

While pointing out large structural problem and failure in healthcare, such as poor sex-ed programs, these companies still insist that women take the responsibility to overcome these

lapses in the instruction of medicine by being their own advocate. Sex-ed programs are to blame, yet women are the one who need to do the work. Instead of forgiving women for larger structural problems, as men's sites did, women's sites hold women accountable for making up for these social problems in their own lives through the framework of science and evidence. While there are larger societal issues leading to gaps in medical knowledge and access for women, these companies urged women to do gender in new ways and use the power behind masculinity to their gain. As a substitute to reframing power or questioning the use of gender norms, these companies push into the legitimacy of masculinity within the medical system.

Instead of pushing back against institutional problems, women's sites equipped and expected women to be informed and educated consumers of medical knowledge. In an article titled, "Vitex Isn't a Cure-All. Read What Science Says it's Actually Good For," author Andrea Massbaum describes vitex, a fruit, and what it does. As discussed earlier, the individual authors on these fertility health websites continually draw on hegemonically masculine norms of what is perceived as unbiased, unemotional, and thus dominant and legitimate knowledge. Here, Andrea signals these ideas through using the word "science" as an authority in her title. Though vitex is fruit commonly used in Asia and Europe, Andrea explains its function as such:

> Binding dopamine receptors, which works to reduce secretion of prolactin by the pituitary gland, in turn inhibiting estrogen and progesterone. Binding opioid receptors, which decreases the secretion of gonadotropin-releasing hormone. Vitex contains many estrogen-like compounds that have an impact on the menstrual cycle.

While these sites claim their mission is to demystify the science behind women's bodies and equip them to be advocates, the information provided was actually far from common language and required much learning, research, and synthesis that normally only specialists and professionals would expected do. The language generally used is far from colloquial and much closer to medical jargon and scientific language, quite intentionally. While discussing something commonplace like a fruit, this author still manages to use multiple medical terms in order to cite science as the legitimizing source behind the power of the fruit.

Men's spaces

"Your heart, your balls and your partner will thank you"

Sites for men push back against hegemonic gender ideals by centering fatherhood and pregnancy as a shared experience. As these sites are built around products that are being sold, marketing was a key element in encouraging new ways of doing gender in digital and tech spaces. In response to an inattention to men's reproductive bodies and fertility health, these men's companies, Path and Good Dude, drew on hegemonic norms, traditional beliefs, myths, and cultural understandings around men to draw attention. At the same time, companies did gender in new ways in order to address gender inequality and how it affects men's bodies and experiences. This tension between normative views of men and their reproductive bodies versus new, meaningful ways these companies do gender was consistently being tested.

While addressing gender dynamics to point to missing research on men's reproductive bodies, many featured blogs on both Path and Good Dude's website highlighted hegemonically normative scripts of masculinity. With titles such as, "Get swole, bro" and "Pulling the goalie" is passive. Get aggressive, stack your offense, and win with Path," it was clear that marketing was

playing up masculinity in men. Another example was the article titled “Does size matter?” with the opening line saying, “Ah, yes, the age-old question. But don’t worry—we’re not talking about female preferences here. We’re talking about fertility (obviously)!” Signaling common tropes, sayings, and ideas about men in general, the companies’ front-facing and messaging signal hegemonic masculinity.

The founder of Good Dude, Mark Driscoll, emphatically said that men often do not question their own sperm motility and health when it comes to conception and fertility health, often at the expense of their female partners. However, in order to touch on and legitimize such a sensitive topic, Path played into these ideas that men are manly when explicitly questioning their role in fertility and conception health. For example, while holding men accountable for their half of conception, an article titled, “6 manly steps to help you get pregnant” stated:

> Some manly tune up may be needed to get your sperm into their best baby-making shape. Infertility is unfortunately pretty common in men, and most couples don’t test and address the male side until far along in their fertility journey.

Here, even the title of the blog signals a nuanced way of doing gender. While pregnancy is traditionally an embodied experience of women, men-focused fertility health companies frame pregnancy as a first-hand experience for men. Yet, the word “manly” gently frames this new way of doing gender in a traditional gendered norm.

While the titles of their blogs giving information played into hegemonically masculine norms, the substance of the blogs was much more nuanced in the way they did gender. Many of

the blogs focused on the gratification of starting a family and becoming a father. Sometimes the companies bluntly asked, “Do you want to be a dad?” while other times the companies built the idea of fatherhood was into other arguments for health: “Also, it goes without mentioning in detail that becoming a parent implies a responsibility for being a good steward for your body, because the children you raise will be depending on you." In fact, there were times where Path framed becoming a father as the ultimate goal of reproductive health and getting healthy. This idea parallels most closely with research we see around women’s reproductive health, framing women as mothers first. To illustrate, one blog tells its consumers:

> Like it or not, age is a barrier when it comes to starting a family, and the first step to making sure that you can become a dad is understanding what the risks and rewards are to have a child at any age. Becoming a father is one of the most amazing experiences a man can have. Getting yourself educated, involved, and tested early in the process can greatly improve your chances of success.

Yet, this type of articulation continued to legitimize traditional masculinity by embedding it into the social framework offered by the hegemonic nuclear family. Utilizing the family as a key social institution, Path urges to men:

> Unfortunately, the sacrifices that men make to chisel their bodies can lead to unwanted effects on their sperm production and reproductive health. So here’s a few things that Mr. Olympians who also want to be Father Olympians should

know. Especially if you want to have some Lil' Olympians around some day.

While framing pregnancy within the realm of men and men's reproductive health, these sites also urged for men to care for their preconception health, three months prior to trying. Most similarly aligned to language in women's reproductive health, Path pushed men to care for not only their physical bodies as potential fathers, but also their mental and spiritual health. In an article titled, "10 workplace hazards that cause fertility problems," Path tells men that "your mental health, physical health, and, yes, your reproductive health, are affected by every moment in your life and every choice that you make." Further, men are told that "we have all been there at one point or another. Consider seeking professional counseling, or trying meditation, exercise, or deep breathing. Your body, your mind, and your loved ones will thank you." Adding to the goal of getting pregnant, Path adds more things that men need to do as potential fathers:

> At Path, we focus on arming men with personalized insights and guidance to maximize their sperm production to try to get pregnant. Men's nutrition, activity levels, toxin exposures, sleep quality, etc. can all be adjusted to maximize sperm production and chances of getting pregnant. Don't be alarmed. Global weather trends are out of your control. If you're a guy trying to be a dad, let's focus on you and your options under your control to maximize your chances of conception.

Here, this site is framing conception as something that is in a man's responsibility. On top of that, men are cautioned against environmental toxins, which is commonly seen in women's

reproductive health (MacKendrick 2018). Mirroring preconception health for women, these sites encourage men to prescribe to ideals of preconception health, where pregnancy is extended to the three months prior to trying (Waggoner 2017). For example, Path advises men that having knowledge of the importance of the three months it takes to mature a sperm "is big, and all the more reason why it's important to get started on the right path before conception. This includes: keeping your weight in check, exercising regularly, getting your zzzz's, reducing your stress, and eating well." More intricately, men are pushed to:

> Make sure your diet includes the key nutrients your sperm need to grow and thrive (things like Omega-3s, Folate, Coenzyme Q10, Selenium, Zinc and Vitamins E and C). Throw some fertility-friendly foods into your everyday meals, and consider taking a daily male fertility supplement that includes vitamins, minerals, and antioxidants that have been shown to support sperm production.

While research is beginning to document the growing movement of preconception health for women, there has been no work done examining what this looks like for men. These companies, like Path and Good Dude, show a new trend towards responsibilizing men and their health even before conceiving, highlighting the value of their bodies as potential fathers. While eggs and women have been under this scrutinized lens, I find that men are now also being urged to be aware and intentional with their preconception health.

Ultimately, any movement towards shifting responsibility evenly to men was blanketed in this new way of doing gender. Fertility health companies characterized fatherhood as a part of being masculine. Traditional ideas of neoliberal mothering were put onto men enacting a new

masculinity: "All in all—you're manly. We won't forget it, and neither will those who love you. The true test of a man's character is what he is willing to do for his family. The big delts are secondary."

CONCEPTION

Conception is understood and embodied through a gendered lens. Any movement towards shifting responsibility evenly to men by fertility health companies was blanketed in a veiled way of doing gender that reaffirms and reembodies traditional gender ideals, leaving the weight of the responsibility on the woman. While men's fertility health companies centered romance and intimacy, women's fertility health companies centered science. Although conception equally takes an egg and sperm, I find that fertility and preconception health companies do gender in ways that creates different embodied processes for men and women. This leads to mismatches in consumers' actual understandings of conception, the weight of responsibility around the process, and how men are talked about versus how women actually talk about men.

Women

"John Mayer, three candles, guest bedroom. It's the only way."

Across different platforms, the women in this study sought peer support to get through ovulation cycles. Instead of talking about sex as romantic, women talked strictly about conception as a scientific, reproductive process. Embedded in online communities, these women turned to each other for support through the process of conception itself. These women were steeped in networks that used getting pregnant acronyms and war allegory to support and communicate with each other. This language was used when casually dialoguing with each other, through

webinars hosted with experts in the field, and in marketing as well. These acronyms allude to how sex is conceptualized as a disembodied, depersonalized experience. Ovu's glossary of terms defines commonly used acronyms when talking about conception:

> BD: Baby dance. This means having sex for conceptive purposes, or any other form of insemination such as IUI or IVF. [The Ovu community invented their own term for this. See entry for "GSD" below.]
>
> GSD: Get Shit Done, or do what you need to do to make a baby (sex, IUI, IVF…)
>
> SMEP: Sperm Meets Egg Plan
>
> TTC: Trying to Conceive

As Ovu, the company, described sex in these disembodied terms, consumers followed suit by using similar language in their own descriptions of sex. When talking about sex, Julia Dean, a white ESL teacher from Alabama, advised others to "look into SMEP [sperm meets egg plan]. Every other day from cd10 [cycle day 10] until +OPK [a positive ovulation predictor kit]. Then 3 days in a row, skip a day, and one more time." Sex was constantly framed as merely a process necessary to getting pregnant. Commiserating with each other, women struggled to get through ovulation and sex each month. Judy Wilken, a white massage therapist/esthetician from Iowa, said:

> We start [*having sex*] way too early and get burnt out sometimes. So now I'm trying to follow my fertility doctors recommendations. He says BD [baby dance] once on day 10 or 11 and then abstain until a positive ovulation test. When you see your peak, BD

> that day, and then again about 36 hours later. (We just do the next day.) Then we usually break for a day and BD once more if my temp hasn't risen yet. We're at the point where two days in a row is the most we can do.

Describing sex as a "dreaded chore," many women turned to humor to support each other. Diana Andrews, a brunette social media strategist from South Carolina, recounted:

> Ovu just pushed back my predicted ovulation again. We made a commitment to try as hard as possible this month, but I can't do it. We love each other, but after seven years together I don't think either of us 9 days in a row loves each other.

She opens up a long, heated conversation by asking, "Has anyone else ever reached BD burnout because all your apps/tools kept extending the fertile window? How did you power through? I don't want to stop now after trying so hard, but I'm out of John Mayer songs." Jennifer Watkin, a brunette from London, chimes in and says, "We cannot do three days in a row, honestly we'd struggle with two, too much pressure and makes me dread what should be fun." Others expressed similar sentiments of struggling to have sex through the fertile window. Faith Philips, a blonde teacher from Iowa, adds, "I'm on my second day after positive OPK, so I have three more BDs to get through. I know that sounds awful, but we've been trying for 10 months. I'll enjoy sex again when we can do it when we want when I'm pregnant lol Pre-seed lubricant has helped me because I was getting dry too and it really helped with dryness."

Because sex was framed as a disembodied process to a chore at best, women urged each other on to attain their goal of pregnancy. This was often done through sharing mutual struggles,

as discussed previously, and the usage of war allegory. Posting gifs of soldiers with solemn faces and the words displayed "I can do it," women alluded to needing grit to make it through another night of sex. Carly Kerber, a white small business owner from Alabama, started a conversation by saying, "We've only been married almost 3, but lord we both say that having sex everyday just is something we can't do everyday! It's one thing for like 2-4 days in row but never would we have *survived* 9 days!" In response, Maria Gonzalez-Garza, a Latina waitress from Virginia, says, "Sperm can live up to 5 days and realistically 3 days so you should be fine even if you ovulate today or tomorrow. There are plenty in queue. *Godspeed*." Several women respond by reminding Carly that it's "just one more battle. Carly responds back to Maria by posting an image of a male soldier with a tattered, camouflage uniform and dirtied face that says "I can do it!" Affirming what everyone else said, Hannah Jones, a white woman from Melksham, UK tells Carly: "Maybe take a couple of days break. You've covered yourself really well so far!

Men

"Keep the romance alive."

Companies marketing to men center romance and intimacy as key elements to conception. In an article called, "Good Sex is Important for Fertility," Path explained that "if you're trying to conceive, this is no time to take your foot off the romance pedal. Why? Well, thanks to Mother Nature, good sex helps your chances of conception." In fact, there were numerous blog articles on this very topic ranging from "A Few Tips for Spicing Up the Bedroom When Trying to Conceive" to "Sex Tips When Trying to Conceive." While titles of the blogs play into heteronormative scripts of masculinity centered on pleasure and desire, the content focused largely on romance, turning to feminine norms of intimacy.

> Sex is nature's way of helping balance our hormones. Sex releases the hormone oxytocin in both men and women. Oxytocin is responsible for the lovey, cuddly feeling that we experience after having sex. It is responsible for strengthening the bond between partners on a biological level. It also directly reduces the stress hormone cortisol. This natural reset can help balance your hormones and improve fertility for both partners.

Here, we see a new way of doing gender in men's spaces, by centering "lovely, cuddly feeling[s]" and connecting these feelings to biology.

These companies do masculinity in a new way, by drawing on scripts of romance. Path states in one of its blogs, "Guys, this post contains sex tips for you... a few pointers on how you can ratchet up the romance." In this particular article, the author outlines five main topics: more foreplay, new positions, talk openly about sex, initiate sex more often, and be more spontaneous initiating sex. One way they validate these tips is through scientific survey data from women. Using these data, the article states that "a strong, emotional connection is incredibly important to women." However, as shown previously, women in digital fertility health companies are not attaching emotions, passion, or romance to conception at all. Rather, the market for men alone continues to give advice on how to "keep the romance alive." Although this article was based off of data, the point that "most women say they want more sex, not less" directly contrasts with what women are actually saying amongst themselves. Further, this fueled an ongoing mismatch between men's and women's spaces in information, how men are framed by fertility health companies, and how women actually talk about men.

Although men are urged to focus on romance and intimacy, women's spaces echoed reverse messages when talking specifically about men and sex. While men are being told to keep things romantic and "comfort her and make sure you both finish," women talk about men contrarily. In a virtual Q&A hosted by Fertility Today, the women's in-home fertility test company, a participant anonymously wrote in a question, posed to the fertility nurse Morgan, R.N., B.S.N.:

> My husband believes in casual trying and is fully resistant to ovulation tracking, intentional sex, learning about fertility... [*Heather, the moderator, paraphrases*] ... *they've been trying for 9 months, it's kind of taking an emotional toll*... We have sex about 4-5 times a month, sometimes in the window- is it a requirement to try more often?

This question highlights the tension between men seeking spontaneous pleasure from sex, something they're being explicitly encouraged to do this through blogs, while women are stressing over the reality of an egg's life span. In fact, a theme of sex leading to an emotional toll was a very common theme among webinars, content, and in the spaces created for women. Nurse Morgan answers the question by saying, " I totally understand and I think sometimes our partners don't have a clear understanding what trying really means and they think that ... oh, we'll just have sex and it'll work!" Lining up with advice from Path, Nurse Morgan encourages the participants to have open conversations with their partners. However, while Path centers romance in this conversation and how to satisfy both individuals, Nurse Morgan emboldens women to talk to men about what the process of conception actually looks like and how planned intercourse is necessary due to an egg's limited life cycle, diffusing the science approach. In fact,

at the end of her advice, Nurse Morgan laughs awkwardly and says, “Women don’t tell men you’re actively trying. Make it something special.”

So, while men and women are both encouraged to have open conversations about sex, men are still talking about the romantic connection of the process while women are talking about the biological factors around conception itself. What both sites have in common is that men and women are urged to seek spontaneity for the male partner’s sake, often at the expense of women’s embodied experiences of sex. These conversations become additional labor for women, who are not only supposed to educate their partners about the biology behind conception, but also make it fun and spontaneous.

Although sites targeting men speak to the ostensibly sexual nature of men, women paint a reverse picture about their male partners. Path, one of the companies for men, nurtured the libido of men, centering satisfaction and romance to make the process of conception relevant. Following from those messages, what one would expect is that men are then always ready and excited to have sex. However, when turning to Ovu’s online community, women were talking about men in a different manner. Lauren Kotelnicki posted, “Looks like we’ll bd once we get home if I can convince the hubby to ‘get it in’ lol.” Following, Diana Andrews, mentioned earlier, joked with the ladies saying, “We take turns trying to be the cheerleader, but last night was HARD to get through/take seriously. He’s like: *I don’t think I even have anything left to give*.” Jessica Becs, a brunette consultant from the UK, added in a light-hearted manner: “post-coitally I patted his shoulder and said ‘Thanks my little sperm bank!’” These messages echoed throughout the online community consistently. Amanda Walker, a blonde stay at home mom from New Hampshire, recounted, “I try three days in a row but I get really dry.... And my fiancee is like *again*?” In response, Rebecca Anderson, a blonde teacher from Indiana said, “Yep! We've

been together 10 years and we've just done 3 days of SMEP. Last night was day 3 and my husband was like '*Seriously? Again?*' And I've been chugging the cough medicine *[said to loosen cervical mucus]* and drinking plenty of water!" Karen Wood, a blonde waitress from Illinois, added:

> Yes girl! I'm 27 and my husband is 26. We've been "trying since February" we were going like 6 days and we JUST couldn't do it. AT ALL. . I just started trying to test with OPK strips and this month tried the SMEP. I'm like you I hope it was enough... we started cycle day 8 then 10. I got a positive OPK Monday the 11th. (I only got 1 positive). We then BD 11,12,13. Last night my husband was like *are you serious* lol. We will skip tonight and try tomorrow.

While sites for men talked about romance and sex often, women perceived men to be quite the opposite- unmotivated halves to the other side of conception. The advice for men, then, often led to a mismatch of information, only adding to the burden of women alone to initiate conversations, educate partners, plan timing, and put up with the entire process.

BURDEN

While these shifts may be doing gender in new ways that seem less traditional, tackling gaps in access and knowledge and responsibilization lead to mismatches in information and messaging, ultimately leaving the weight on women. Much research has shown that reproduction is considered a woman's responsibility, so much so that our common understanding of conception is flawed (Martin 2001). Fertility health, as marketed by these companies, in these domains also

reveals a similar picture. First off, men's products do not come with communities, webinars, or any sort of interaction amongst consumers, while all women's products do. Further, when I interviewed the co-founder of Good Dude, he disclosed that many of the purchasers of the kit itself are women. Similarly, women often post in communities about not only their own health, but also their husbands' health. Through their communities, women commiserate and support each other through unequally heavy burdens in fertility and preconception health at the provider and medical level. These sentiments are also reflected through webinars and blogs, at both the sites for men and women, that focus unevenly on interventions for women while forgiving the lack of knowledge around men's preconception and fertility health.

Women

Within their communities, women reveal common threads of uneven responsibilities of preconception and fertility health. This uneven distribution of assumed responsibility starts at the provider level, through reproductive endocrinologists and diagnoses, to the internalization at the individual level. Alyssa Howerton, a brunette project manager from Pennsylvania, starts a conversation by asking if there are any other "heavier women in the group":

> My husband has been so supportive & he can see that I'm really trying my best to figure out what's going on with my body. I'm trying to be more active, eat healthy, I drink pink stork fertility tea, & take a prenatal every day. He saw how much I was doing so he even decided to call his doctor to get a SA in two weeks just make sure his swimmers are ready when my body gets back on board.

While Alyssa describes all that she is doing, she later reveals that not only is she obese, but her husband also falls under the obese category. Even though they are both in the same boat in terms of fertility health and body weight, Alyssa takes all the responsibility in making dietary changes to lose weight for conception while rewarding her husband for being supportive for simply making an appointment. Emily Mason, a blonde teacher from Essex UK, mirrors this burden: "Me and my husband went for some tests and they found I had a large ovarian cyst so in November I had that and my left ovary removed. Now I'm paranoid that *my* weight is the issue. Me and my husband are both classed as obese by the BMI!" When discussing fertility health and preconception, the egg and sperm are equally important, with weight affecting the health of both gametes. However, the uneven focus on women's weight alone, shows the unfair burden on women. Not only are women internalizing issues around fertility health as their own, but they show that this messaging is coming from healthcare providers. Jane Taylor, a brunette tattoo artist from Spalding, UK, identifies herself as "larger than life and been TTC for 7 years." She shares that her family reproductive endocrinologist and primary care providers are "ignoring [her] symptomatic haemophilia and hubby's low sperm and only focusing on [her] weight with no other help whatsoever."

Another way messaging promoted women as primary reproductive actors was through genetic testing. Prior to pregnancy, many providers suggest genetic testing to see if women are potential carriers for any genetic disorders. Brittany Brewer, a blonde stay at home mom from Texas, recounts her experience with Natera (Natera® offers highly accurate solutions for noninvasive prenatal testing (NIPT), genetic-carrier screening, (PGD/PGS), and miscarriage testing):

> I was just reading about the Natera screening that I did a week ago. I probably should've read about in more detail because I'm not so sure I want to know this stuff- hello anxiety. I would've declined. Anyone do the Natera preconception genetic screening? Is it common to come back as a carrier for something? This is not the testing they do while pregnant, but the testing they do prior to pregnancy.

In response, Elizabeth Baker, a blonde nurse from Utah, said that she went through a similar experience and asked if Brittany's partner had gotten tested as well. Brittany reveals that their "RE recommended starting with [her] and then going to him if needed." Elizabeth affirms this decision and says "that's probably smart, because if you come back negative for everything then there's no point in testing him so reduced cost. Our insurance didn't cover it and it is quite expensive testing." This reveals that even though the order of which partner getting tested doesn't quite matter, providers and individuals also see women as the first stop. While men could easily be the ones to get tested first, women are still bearing the bodily burden of not only pregnancy and childbirth, but also genetic screening and preconception visits. Even though this may seem harmless or simply normative in society, there are very real consequences as revealed by Elizabeth. She lamented, "I hate all of this. I go down to deep dark places when I have all of this information. I know some say it's best to know, but I don't know. I probably should've declined. I hate all of the stress it brings."

Men

Although digital technologies for fertility exist for both men and women, responsibility for individuals is embodied differently and unevenly through these products and their platforms.

This was displayed through webinars, individual conversations, and blogs. Further, men's products did not come with a community at all. Information given to women through these spaces frame women as risky. Information for men, however, is very forgiving and light-hearted. Preconception health theoretically should be equally important for men and women. Sperm and eggs take three months to mature. Sperm and eggs are equal halves to the process of conception. However, this is not the message that is promoted through these sites.

The platforms that these digital technologies employ quickly reveal institutional level failures and imbalances. Women discuss their issues and anxiety around medicalized diagnoses such as Hashimoto's disease, polycystic ovary syndrome, advanced maternal age, hostile uterus, low ovarian reserve, and hypothyroidism. Meanwhile, Path's blogs tell men, "sorry to break it to you fellas, but our reproductive parts don't exactly age like a bottle of fine wine either." These platforms can only reflect what exists in the medical world, in terms of diagnoses and recommendations. The stark difference between women's blogs and men's paints a picture of the medical knowledge that does (and doesn't) exist. While women write into webinars to ask "how they can make their body 'most sperm friendly'," Path's blog tells men:

> We're not here to ruin your party. Marijuana use, of course, has a lot of benefits, too. But we want to highlight the research that has been done to help you make the right decisions for you and your family (or in this case maybe your family-to-be). For many guys, fatherhood marks a transition into adulthood. If you're trying to start your family now, it may be the time to cut back or give up on the weed habit as part of your commitment to your health and fertility. It's probably not going to hurt.

In fact, women are main consumers of information, health, and products for men's fertility and preconception health. When I interviewed Mark, the co-founder of Good Dude, he revealed that the customers of their in-home sperm test was in fact a "combination" of both men and women. However, on the flip side, in interviews, employees of both Ovu and Fertility Today were clear that not only was the space created for women alone but the participants, consumers, and clients were solely women as well. The information that men do consume through the blogs of Path and Good Dude's blogs report gendered metaphors and information like:

> The average man makes 1,500 new sperm cells every second. Every second! Honestly, we guys don't get enough credit for this. That's incredible manufacturing productivity and we should give ourselves and our species a well-deserved pat on the back.

Even though the life cycle of a sperm and egg are now common knowledge, preconception medicine still leaves men behind. In a webinar hosted by Fertility Today, an anonymous woman wrote in that prenatal vitamins cause her heart palpitations. In response, Doctor Judy Klein, an OBGYN, says that "prenatals could be harder to tolerate, harder on the stomach, sometimes they're too big to swallow... so taking it and getting used to it before getting pregnant is super helpful in case you have morning sickness or have adverse effects." While the men's blogs do not mention prenatal vitamins, women talk about their husband's health and consumption of vitamins. For example, Kelsey Parker, a brunette from Ohio, asks for help from other women because she says her "husband already takes a multivitamin and has purchased

maca root but doesn't like how jittery that makes him feel," and doesn't know how to get him to keep taking it.

Further, there was a mis-match in actual information between sites for men, at Good Dude and Path, and women, at Fertility Today and Ovu, regarding conception. Following the themes around conception discussed earlier, Path's website and blogs talked a lot about being "sexy" while Fertility Today talked about science. For example, Path stated:

> Getting your sexy on unleashes important hormones and physiological processes important for conception. For him, good sex allows the body to dig deeper for healthy, higher quality sperm. And for her, achieving orgasm can help draw the sperm up into her body to give those swimmers a little "boost" on their journey to the egg.

Again, we see that pleasure is centered around conception. When we turn to Fertility Today, we see not only a contrast in language but also a mismatch of information. Fertility Today published an article titled, "Do Sex Positions or Orgasms Affect Your Chances of Getting Pregnant? Here's What the Science Says" written by Sheila Jafari, biological anthropology PhD candidate. In this article, Sheila wrote:

> In this post, we'll focus on two frequently cited myths about things that can impact conception: Myth 1: Sex positions, and lying down after sex, affect your chances of conception. Myth 2: Having an orgasm during sex makes conception more likely. We'll explain the reason the myths exist, the relevant scientific studies,

and the extent to which there might be any truth to them.

The final takeaway of the article is that "based on the evidence that's out there right now, science doesn't support a relationship between your chances of conceiving and how often you have orgasms during sex."

Therefore, we see how these new ways of doing gender still have unbalanced implications. While these movements towards nuancing gender scripts are important, they still fall short of having meaningful change towards an equitable and balanced reproductive equation. The ways that fertility health companies do gender challenges heteronormative scripts, urging for symmetry within reproduction. However, the men's and women's companies are mismatched in advice, knowledge, and responsibility, still leaving more burden on women. With men's sites centering romance and intimacy and women's sites centering science, women are still left to work through the medical and scientific evidence behind their health while also focusing on helping their male partners feel like sex is spontaneous and romantic.

CHAPTER 3

COLORBLIND EUGENICS

Race and gender are a part of reproduction and fertility health. Enslaved Black women, poor women of color, and immigrants have been forced, coerced, and compelled into sterilization and experimentation that have produced the foundations of today's birth control and gynecological knowledge. In this chapter, I draw from this important history and ask the following questions: How do ideologies of gender and race reproduce disparities in reproductive medicine and fertility care? More specifically, how is biomedicine a site that reproduces the racial hierarchies that exist in society? Is there a point where the discourse becomes racialized or racist? How does race frame the discourses on which reproduction is being understood and what consequences do the different frames have for populations reached, enabling or limiting access to women of color?

In this paper, I present the concept "colorblind eugenics" to explore the intersection of colorblind ideology and white habitus within fertility health culture. Previous research has pointed to the racialized assumptions and practices embedded within reproduction and reproductive health; fewer researchers have centered critical whiteness. Scholars who do interrogate how both race and gender structure reproductive health tend to focus on predominately women of color through the lens of reproductive justice or else do not center race as a central variable. Building on these insights, I reveal the reproduction of the privilege of whiteness in fertility health culture through these contemporary technologies geared towards conception and fertility health as products (and producers) of whiteness and white spaces.

RACE, WHITENESS, & FERTILITY HEALTH

In this chapter, I situate my analysis in conversation with whiteness and critical whiteness studies. Whiteness can be explained as "the defining principle of social organization by which white values, ideas, aesthetics, preferences, and privileges are made to appear as the normalized, taken-for-granted basis of interacting and engaging social reality" (Hancock 2013). In this section, I explore some of the elements of fertility health culture and marketing that uphold and reinforce whiteness. Scholarship that investigates the link between whiteness and reproduction is lacking. This piece will add to this much-needed line of research.

I also draw on the term white habitus, defined as "residential and social hypersegregation of whites from blacks" as a socialization process (Bonilla-Silva et al. 2006:247), to help give a framework for understanding how white spaces operate. Bonilla-Silva et al. argue that white habitus creates a sense of racial solidarity and leads to the idea that white is a collective identity, leading whites believing that whiteness is normal and the correct way of being and doing things. This collective mentality of white habitus is racialized and cycles racialized attitudes and prejudices against minority groups (Painter 2010; Warren and Twine 1997). I find that white habitus greatly conditions fertility health culture. During my analysis and observations of four fertility health companies, three elements emerged that are used as mechanisms within the fertility health industry to establish and uphold white habitus: maintaining white spaces, the white-washing and otherizing of non-Western medicine, and marketing. The mechanisms which uphold this mainly female-dominated, white-racialized culture are largely implicit. My larger goal in this dissertation is to further the understanding of how white cultures and spaces are actively constructed and maintained.

BACKGROUND

In this chapter, I examine four fertility health companies and their products: Ovu, Fertility Today, Good Dude, and Path. Two of the companies, Ovu and Fertility Today, cater towards women and the other two, Path and Good Dude, were geared towards men. Ovu and Fertility Today both feature online communities, where women are encouraged to support each other and ask questions about their fertility. While Path and Good Dude did not have such communities, the founder of Good Dude said such a feature is the next thing they are focusing on. All of the companies had sections of their website dedicated to blogs, where each blog had a feature title and photograph displayed. In the following section, I outline the colorblind eugenics displayed through the companies' websites and blogs. I then give background to situate this work in time. These data were collected during the George Floyd murder, the covid-19 global pandemic, and during the resurfacing of large racial justice social movements such as Black Lives Matter and the growth of Stop Asian Hate.

Displaying Race on Online Blogs

Displaying race, especially as a facet of marketing, is a direct choice. Whether race here encompasses Black, Indigenous, People of Color or only white people, these decisions are both equally about race. Here, I discuss how race is displayed on the online blogs of the four fertility health companies: Ovu, Fertility Today, Path, and Good Dude. Ovu and Fertility Today are companies for women while Path and Good Dude cater to men. Ovu is a company for women based off of an ovulation tracking watch. Ovu is not only a technological product, but also comes with an online community, and a space to find more information on fertility health, coined as

OvuWorld. Ovu describes OvuWorld as a “home for obsessively researched real-talk about fertility and the menstrual cycle.” Further, they state that they are different because they “write about the highly nuanced, specific, and sometimes embarrassing topics that keep you up at night. Every claim we make is backed up by a primary source (usually a clinical study) Our content is written and fact-checked by award-winning science writers and women's health experts.”

OvuWorld has four categories of articles: Getting Pregnant, Pregnancy, Reproductive Health, and Ovu Bracelet. Under the theme of Getting Pregnant, Ovu has published 23 articles. Of those articles, 11 have photographs featuring white men, women, and babies. The theme Pregnancy has 18 published articles. From those, 11 have photographs showing white people and 2 have East-Asian women. In Reproductive Health, there are 11 articles with 6 featuring photographs of white people and 1 showing a Black person. Lastly, the topic of Ovu Bracelet has 11 blogs published with 3 showing non-descript white skin, such as a hand or a bare stomach, and 1 showing black skin with the title “#I had a miscarriage.”

Similarly, Path features blogs for fertility health information. Every single picture displays white men, white women, and white skin even when the face or other distinguishable features aren't visible. There are only 2 blogs out of 230 thus far in which any blackness is displayed: when talking about not taking testosterone and covering a Black athlete who got in trouble for taking fertility drugs. The one picture on the website with a Black person is on the blog “You (Probably) Shouldn’t Be Taking Testosterone,” showing a black, muscular back, with a bent elbow and visible veins, holding a heavy-weight dumbbell.

In direct contrast, Fertility Today and Good Dude, the newer and smaller counterparts to Ovu and Path, have very different websites. Starting in mid-2020, the opening page of Good Dude’s website shows a Black man with an olive button up, sleeves casually rolled up. He is

sitting on a blue-tiled bathtub, smiling with his mouth closed. He has medium curls, a trimmed beard, and is holding a pamphlet that says “Things Are Looking Up.” Scrolling down a little, the website says “Talk with our fertility expert, for free” in large letters, with a picture of a Black woman, with natural cloud-like curls, wearing a white coat, a stethoscope draped on her shoulders. Fertility Today’s website, starting mid-2020, follows a similar pattern. Their main page shows a melanated hand holding the at-home fertility test with the large heading “Want kids one day?” Where and how these companies choose to display race is an overt choice. Whether showing only white skin and white people, or portraying blackness in a negative way, or positive images of people of color, choices are about race. Even, or especially when, companies are being colorblind, racism and racist tropes are still powerful and meaningful.

Black Lives Matter

On May 25, 2020, during the data collection for this chapter, George Floyd was brutally murdered by the police in Minneapolis, MN. The nation watched in horror as a security footage and witness videos showed the death of a Black man gasping for air and calling for his mother as a white police officer knelt on his neck for almost nine minutes. Following this injustice, many protests erupted throughout the country. Black Lives Matter protests continued to spark throughout the country in a way that spurred the *New York Times* to call it the “largest movement in US history” (Buchanan et al. 2020). The following summer of 2020 launched many hard to ignore conversations at the institutional, governmental, structural, and individual level around race, racism, and racial injustice. Many corporate, national, and even international companies issued official statements around valuing Black lives and supporting Black Lives Matter. For

example, Ben and Jerry's, an ice cream company, issued a 704 word statement with four separate actionable steps called "We must dismantle white supremacy, Silence Is NOT An Option."

Following suit, Fertility Today, the women's company based off of an in-home fertility test, sent an email on June 3, 2020 with the subject "Black lives matter." The body was addressed "to our community" and written by Elsa Karlsson, the CEO and co-founder of Fertility Today. Fertility Today has an online community called the Modern Community, which is a largely white space, with no Black staff, moderators, and rarely any Black members. Still, the opening paragraph of the email stated:

> To say that these last few days have been challenging wouldn't scratch the surface of what we know so many of you and your loved ones are experiencing. The world is hurting and we are holding each of you — and the entire Black community — in our hearts this week. Black lives matter.

Ovu, Path, and Good Dude did not release any statements or any content online regarding Black Lives Matter. While the email that Fertility Today stated that "anti-racism work is ongoing and hard, and something our team is committed to for the long term," the larger issue here is that whiteness continues to see itself void of racial issues. Whether it be the silence of certain companies during a time where even ice cream companies are issuing statements or paradoxical works that might sound like simply the right thing to say, whiteness is not perceived as a racial category. Fighting racism means addressing *all* racial issues, especially the veiled ones wrapped up in whiteness.

WHITE SPACES

White spaces are essential for the political, social, and cultural order of the United States (Anderson 2015; Moore 2008; Feagin 2006). With white spaces being a part of everyday social reality, it is crucial to understand how these spaces are reproduced, sustained, and created and the role they play in colorblind eugenics (Bonilla-Silva 2006; Feagin 2006). White spaces are omnipresent, socially and culturally maintained as the norm across many interactional and institutional realities, whether on the ballet stage, craft beer industry, or certain areas of health (Sood 2018; Hughey 2009). I argue that such spaces in fertility health are reproduced through systems of meaning making, mirroring that of positive eugenics. Often in white spaces, the idea of race and racism are fundamentally dismissed and made invisible for and by those who exist in white spaces; therefore, it is important to highlight the socially fundamental mundanity of whiteness and white spaces.

In this section, I analyze white spaces within created within fertility health culture. In particular, I examine Ovu's in-person event "5 Days of Ovu" hosted in May 2019 and Ovu and Fertility Today's online communities in order to further understanding of how white cultures and spaces are actively constructed and maintained both in person and online. Most importantly, online spaces are important places to overcome colorblind ideology, especially where it collides with technology and technological products. Therefore, the analysis of both online spaces and in-person events of these companies creates a rich ground for examining white spaces.

5 Days of Ovu

In May 2019, Ovu launched an experimental event in a Southern city, called "Five fertile days with Ovu." The event was advertised through large billboards throughout the city, online posts,

email advertisements, and postings in EventBrite. EventBrite is an American event management and ticketing website that allows users to browse, create, and promote local events. The original invitation on EventBrite explained the event as, “five days of learning, community and fun.” Women were invited to “join for free events, beginning April 30th, includ[ing] a yoga class, lingerie fittings, tea tastings, beauty-product testing, panel discussions, giveaways and more, all focused on women's health.” Further, they explained that they launched the community event series, "Five Fertile Days with Ovu," to continue their mission of empowering women with knowledge about their reproductive health. No other events like this have been hosted since. Rachel Cohen, the Head of Content at Ovu, described the event as “a brand awareness experiment.” Leading up to the event, Ovu locally advertised on billboards above highways, park benches, and busses.

Here, it is important to examine and break down the importance of a brand awareness experiment specifically in this particular Southern city. Although Ovu is an international company with headquarters in a diverse, technological hub, it’s one in-person experiment took place in a growing Southern city. The tech hub that houses Ovu, a major city, has a culture known for its diversity in terms of art, music, cuisine, and population. It is also one of the largest hubs for digital technology and information. In contrast, this Southern city is a major center for healthcare, religious publishing, private prisons, music and the arts, and banking. Entities with headquarters in the city include Healthwise (Healthwise, LLC is a privately held company that provides insurance for smartphones, tablets, consumer electronics, appliances, satellite receivers and jewelry), FaithFull Christian Resources (the publishing and distribution division of the Southern Baptist Convention and provider of church business services), and Safe Zone (a private prison company). While being a city with rich history in the Civil Rights movement, including

sit-ins, and many Historically Black Colleges, this Southern city might be more well-known, as shown through popular media, as the new Las Vegas and home to bachelorette parties. A simple Google search of bachelorette parties will bring up this city and numerous guides on what to do. The top three searches show numerous pictures of large groups of white women wearing cowboy boots, making candles, posing front of party bikes such as the Pedal Tavern, and wrapped around poles for "private pole dancing burlesque or southern swagger" dance classes (Stag and Hen 2020).

Black Out Tuesday was a collective action to protest racism and police brutality. The action, originally organized within the music industry in response to the killings of George Floyd, Ahmaud Arbery, and Breonna Taylor, took place on June 2, 2020. On Black Out Tuesday, a bouncer on the main entertainment strip of this city well-known for bachelorette parties, posted publicly online that he was explicitly told to surveil for Black people and try at all costs to not let in any Black folk. When interviewed, Rachel Cohen, the head of the events told me "it's funny that you're in the city where we happen to do that experiment." However, I argue that it wasn't funny coincidence, rather a very intentional city selection.

Against this backdrop, Ovu decided to do a brand awareness experiment in this one, particular city. All five events took place in highly gentrified areas of the city. Stated in the local newspaper, talks about how each neighborhood hosting an Ovu event signal new buzzwords within real estate circles representing rebranding of neighborhoods once known for high crime and low value, or more clearly, gentrification (Reicher 2017).

I use Five Fertile Days with Ovu to show how whiteness exerts itself as normal throughout fertility health culture. Critically examining "normal" helps to breakdown how white cultures and spaces are constructed and maintained and how colorblind eugenics is perpetuated.

The first event was called “Restorative Flow for Reproductive Health.” Although the event was hosted by Ovu in partnership with Body Wellness whose tagline is “Pro-Donut, Non-Diet, Anti-Racist Community Wellness Welcome!,” yoga in the United States is well-known for Western cultural appropriation and white-washing (Sood 2018). While the mission of Body Wellness is to offer a wellness company with more diversity, the event itself drew 21 women, with only 1 Black woman attending. The rest were white. Similarly, the second event, “Fertili-Tea” was at The Café at Bristle Farms for tea and conversation about fertility-focused nutrition with a white registered dietician, Jessica Stoner. Like the previous event, Fertili-Tea was hosted in a very white, gentrified space, attracting white people. Ovu itself posted on its official Instagram on May 2, 2019, a post recapping the event, featuring 9 photographs. Of those 9 pictures, 7 featured people who attended the event, who were all white women. The third event, “Bring Back the Fun” was at Sweet Intimates, a 1,465 square foot shop is located in another renamed, up and coming part of town. The cheapest item on the website is a thong for $22, with the range reaching up to $218. Most items were in the range of $48-78 for one item. Fifteen white women attended the event.

“Wellness from Within” was the fourth event, hosted at Citrus Laine, self-described as “a natural beauty and wellness store.” The event featured large charcuterie boards with grapes, wine, cheese, and pretzels. Ovu posted 8 pictures of the event, all showing white women in attendance. One of the photographs is a group photograph of those in audience. In the picture, there are 19 white women. The final event “Find Your Fertile Window” was an interactive discussion with a panel featuring 5 claimed “experts” by Ovu, all white women. A couple days later, Ovu posted about the final event with 6 pictures of white women.

Even within a city that is only 60% white, these events hosted by Ovu were attended by mostly white women. The particular culture, advertising, and event details represent the kind of social milieu that maximizes in-group interaction. Sociologists agree that social and spatial isolation of groups leads to stronger and greater development of group cohesion and identity formation. However, "racial problems" continue to be seen as related to minorities, with little research being done on taking apart the maintenance of white identities and white culture. Bonilla-Silva (2017) points to the a lack of reflexivity when whites are asked to interpret their segregation and isolation from blacks, normalizing such aspects of their lives as "normal" or "just the way things are." One central consequence of this white habitus displayed is a sense of white culture solidarity and negative views of nonwhites, which I'll circle back upon later in this chapter.

Dominant identities usually remain unarticulated precisely because they are taken as the "norm." However, when critically analyzing ideas of normal, we are able to bring into focus the dominant cultural ideas and logics of whiteness. When I asked about how the company forms marketing for the product and community of Ovu, the head of content and marketing said "Ovuworld is a bigger population, because it's educational... it's not necessarily only for women who are trying to get pregnant with Ovuworld, it's really anyone who, like... anyone! Probably from late teens to early 40s." More specifically, when asked about demographics, she said, "it should be, like, probably, I think it tends to be women who live in more urban centers who are in the like, you know, like socio economic groups where they can afford a $300 fertility tracking device." This level of colorblind marketing continues to create a white space that refuses to examine the racialized production of meaning in these scenes. Seeing and naming these events and communities as a *white space* helps to bring into focus the governing cultural ideas and

logics and how racialized meanings are produced. As fertility health events are being hosted and created in white spaces, only white women are receiving the message that they can proactively control their fertility health and set themselves up for conception and birth, mirroring language and sentiments of positive eugenics.

Online Spaces.

Building off of Bonilla-Silva's (2017) frame of color-blind racial ideology, I examine online spaces to understand how racetalk is *or isn't* enacted in online spaces. Like discussed previously, women's companies included online spaces created for women to support each other, ask questions, and interact. Some key aspects make for important comparison and analysis in these two online spaces: Ovu and Fertility Today. While Ovu has remained the same in terms of structure and leadership since 2017, Fertility Today made multiple structural changes at the institutional level. In particular, Fertility Today had a change of leadership, bringing in Mei Adams, who identifies as Asian-American, as the new head of communities in October 2019. Fertility Today also made intentional changes in language to increase inclusivity. However, these changes are important because they show how (or how *not*) changes trickle down into spaces and actual representation, participation, and inclusion at the consumer level. Along with interviews, I argue in this section that the discursive and material strategies of fertility health companies perpetuates a white logic that overrides any sort of institutional change at the company level, leaving online spaces to remain largely white. I also argue that online spaces are important places to overcome colorblind ideology, yet, they continue to see white logic as the norm, thus perpetuating default discrimination, especially where it collides with technology and technological products.

Both Ovu and Fertility Today use their communities as key aspects of their companies, providing an excellent point of comparison. Online spaces are important places to overcome and name colorblind ideology, especially when it collides with technological products. In these following sections, I will describe and compare online communities of Ovu and Fertility Today. Fertility Today was the only company that explicitly talked about race, giving a rich analytical foil to examine how whiteness exerts itself as normal throughout fertility health culture and online spaces.

To join Ovu's community, one must be a paying customer and gain access to a private, screened Facebook group. The Ovu community is called "Ovu Ambassadors" and was created on August 2, 2016. In December 2020, there were 15,448 members. Each member must have bought the bracelet to gain access and must answer questions on a form before gaining access. There are 3 administrators and 9 moderators: of the 3 administrators are Lara Müllr, the co-founder and CEO of Ovu, Rachel Cohen, the head of communities, and Libby Ketterman. Libby has the most consistent interaction, flagging shaming comments, posting weekly chart threads, and maintaining presence from the company, Ovu. Every week, a moderator posts a "Weekly BFP (big fat positive) and HPT (home pregnancy test) thread." The description says: Ultimate good news to share? Got a squinter? This is the place for you! The range of comments spans from 23 to 374 per post for these kind of post, with an average of 148 comments. The comments include pictures of pregnancy tests, snap shots of health data from the Ovu watch and other fertility tracking apps, and women asking each other questions and helping interpret information. There is an average of 30 new posts a day, ranging from asking questions, looking for suggestions, posting pictures of ovulation strips and cervical mucus, and sharing experiences. On average, normal posts outside of the weekly posts by moderators get about 10 comments, with

women responding to each other and talking back and forth. Questions get around 7 answers. On July 21, one of my first days in the Ovu Ambassadors, I described the members:

> One thing that I really notice today is that the majority of the women who post in this group all have profile pictures that are either their wedding photographs or family portrait pictures. A lot of them also have pictures with dogs. And they're all mostly white.

The format of the group is largely free form with barely any interaction with moderators or administrators. Women post freely and openly.

In comparison, Fertility Today's platform is on Slack and called "Modern Community." Unlike Ovu's community, which stayed largely the same from 2017-2020, Fertility Today's community saw major changes. Here, I will detail the same aspects of the community as discussed above with Ovu alongside the changes in time. Originally, the online community was called "the Matriarchy" which was a "a community created by women, for women" and one had to apply to get access to the Slack channel. One would gain access after purchasing the at-home fertility test. However, in late 2019, the company made a switch to call the community "Modern Community," for "people with ovaries." Now, one can simply fill out a TypeForm (a service company that specializes in online form building and online surveys) online with basic details to gain access to the Slack channel. The first entries on their Slack were created in June 2018. On December 2020, there were 16,068 members. Employees of the company constantly post in the Slack as moderators and participants. While members can create any channel through the use of hashtags (such as recent ones like #covid_19), Modern Community has the following official

channels: intros, fertility, womxn-today, ft-hormone-test, work, and office-hours. In mid-2020, Fertility Today launched a free ovulation and cycle tracker app, ovulation tests, and pregnancy tests. Shortly after, they made their products available at Walmart. As compared to Ovu Ambassadors, Modern Community had less organic conversations between users. Instead, many individuals posted questions or anxieties and moderators directly answered. There was also much less activity, which was less streamlined, divided amongst many different channels. Conversation is less organic on this channel. Most posts are pertaining to user error and anxiety with hormone testing. Posts are much more guided by moderators, such as asking specific questions where individuals simply answer, and taking polls.

Although Fertility Today saw institutional and structural changes, neither company directly addressed diversifying their communities by race and spaces remained largely white. Fertility Today made direct steps to be more inclusive by gender, such as changing from the Matriarchy to Modern Community and moving away from saying women to generally saying people with ovaries. Several months after this switch, changes can be seen within the community. Channel names switched from #modernwomen to #modernwomxn and these efforts quickly became fruitful. When looking through the intro channel, the amount of (openly) non-binary and queer individuals increased from zero in 2016 to at least one per 20 posts. Thus, making direct changes not only in agenda, but also in language helped to change the makeup of one of these communities. Unfortunately, neither community was willing to directly address wanting to disrupt the whiteness of these online communities.

While Ovu was unwilling to address race or didn't see it, Fertility Today hired Mei Adams, new leadership for their head of communities in October 2019 who identifies as an Asian-American. When asked why she stepped into this role in this company, she explained that,

“fertility is just like personally, it's a very important topic to me in general... and being Asian, I think that's also like another added thing that there's a lot of stigma not only in American culture, but I think in Japanese culture and from what I understand a lot of Asian cultures and so that's kind of like where I got my start with fertility topics.” While addressing the importance of her own culture in interpreting information and navigating topics, she went on to explain how race is not a specific demographic the company talks about addressing in terms of online communities. Just weeks after George Floyd’s murder, Mei addressed how Fertility Today was thinking of race and their online community:

> We're very cognizant of the fact that we want representation across the board. I think it was very clear this week, last week, right, like with everything going on that is of utmost importance to so many people and to be very equitable is important. And I think that we've done a pretty good job in the past and we've, we've always talked about racial disparities in healthcare. And we will continue to do that and push that part of the research forward. So I don't think that necessarily targeting specific demographics in terms of like race is something that we will do but you know, there's probably some, what's the word I'm looking for, like segmentation of the broader 21 to 45 Audience, I just don't know what they are.

Fertility Today addressed race and structural inequality in their email after George Floy’s murder. They made changes to shift their community to be more inclusive by gender. They also hired an Asian woman for their online community. However, there was no evidence to show any attempts to increase the inclusivity and openness of Modern Community by race as they had for

gender. While Ovu remained completely colorblind to any sort of issue, this passive resistance and inability to name racial barriers by Fertility Today also falls along lines of colorblind ideology. While being fully aware of the direct effort it takes to bring structural change that trickles down into actual membership, the community and its employees continue to not challenge the normativity of whiteness within their online communities.

WHITE-WASHING OF NON-WESTERN MEDICINE

"Nutricost Dong Quai 565mg, 240 Capsules (Angelica Sinensis) - Veggie Caps, Non-GMO, Gluten Free"

In this section, I interrogate the way that non-Western medicine is discussed, framed, and used within these online communities. I argue that an important process of creating and maintaining a white space is the process of whitewashing. I use this metaphor to describe the method of racializing fertility health culture as white. Whitewashing a wall serves to wash away undesired markings, preparing it for a fresh layer of paint. Similarly, the purpose of whitewashing fertility health culture is to wash away undesired racial politics (Reitman 2006).

Whitewashing paints fertility health culture white by superimposing white culture and normalizing that in place. Acupuncture and Eastern herbal medicine are often talked about in fertility health spaces. While acupuncture and herbal medicine are healing practices of traditional East-Asian medicine and a conventional practice in many parts of Asia, acupuncture is considered a form of alternative medicine in the United States. Thus, although many naturopathic and holistic doctors recommend practices such as acupuncture, conventional

medicine, including practitioners such as reproductive endocrinologists, often pushes back against the legitimacy of alternative medicine.

The distinctly Asian nature of acupuncture and herbal medicine is culturally seen as pernicious. Especially with the rise of sinophobia spread during the global covid-19 pandemic, it is no surprise that individuals would want to walk away from unmistakably Chinese or Asian practices. Tied to the historical nature of racial politics, Asians in the United States have always been labeled as foreign, even when born in the United States. Thus, it follows naturally that Asian products and practices would also be seen as foreign and unacceptable. Samantha Paulin, a blonde wedding DJ from Minnesota talks about her fears around Chinese herbs:

> My friend is currently going through ivf at a private clinic and was warned again and again to stay away from Chinese herbs. Was on all the paper work she received and her doctor said again and again to stay away from them. Not sure why but I'd be hesitant to take them after hearing that x

Samantha, like many women in these groups, expresses concern over Chinese herbs at the individual and institutional level. Mirroring sentiments from doctors, these women fear the foreign nature of Chinese, and thereby un-American products. In response, Jessica Holmquist, a blonde real estate agent from New Jersey states that she "fully heartedly agree[s]! Can't trust where these foreign products are coming from. Are they even tested or regulated? Not for me and my body!" Samantha and Jennifer represent the general consensus in these online communities that non-Western medicine is "foreign" and thereby unacceptable.

In order to legitimize Eastern medicine, women drew on scripts of mysticism. With threads on acupuncture continually showing up on a weekly basis, women use mythological language to legitimize their advocacy of non-Western medicine. For example, Liz Pavol, a blonde yoga teacher from South Carolina started a post by asking:

> ACUPUNCTURE. Thoughts on helping to conceive? My fertility specialist said no, but I'm a yoga teacher and believe in the powers of eastern medicine. It's just pricey to go weekly which is what's recommended. Chinese herbs also $70/month. Have been on them since April but thinking of stopping them.

Liz appears to be in her mid-thirties with a nose ring, wearing a jean jacket in her profile picture. She is white and describes herself as "Founder, teacher at Urban Yoga Charleston. Music obsessor. Experiences over things." While showing that she is open and a "believer," language often used in the context of faith and religion, she still seeks the advice of others in trying to legitimize Chinese herbs and her belief in the "powers of eastern medicine." Women often step in to speak on their personal experiences, often using language such as "power" and "believer," as if they are speaking about religion or myth, attesting to the personal power behind such practices. Many posts in these online white spaces solicit testimonies of other women to legitimize Eastern medicine. Thus, the endorsement by other white women continued to bolster support for foreign practices, making it more acceptable (or white).

In order to actually participate in non-Western medicine, women superimpose white culture to normalize that in place, racializing fertility health culture as white. Women in Ovu's online community discussed acupuncture and Chinese herbal medicine whilst stripping away any

racial politics and legitimizing practices through a white lens. They spoke mostly cautiously, in terms of going against the advice of their endocrinologists and doctors, and when actually discussing their decisions, aside from the word "Chinese," nothing was Asian about it. In particular, women legitimized Eastern medicine through whitewashing the practice and referring each other to white practitioners. They also deny racial politics through choices about racialized language. In response to someone cautioning against acupuncture, Kristi Harris, a blonde realtor from Idaho, suggests a "Chinese herbal medicine expert" who is white. In full, she says:

> Look into Your Infertility Specialist she works with people all around the world and helps women find an acupuncturist near them that's fertility certified and is a Chinese herbal medicine expert. She's legit a miracle worker! So much cheaper than IVF and all natural!

The Infertility Specialist's logo is a blue lotus flower with the name "Jennifer Willard" underneath. Jennifer, in the next picture on the website, is white, blonde, and appears to be in her late 40s. She's pictured standing in front of a brick red closet, with a big brass circle in the middle featuring silhouettes of East Asian women and non-descript Asian characters. Her hands are folded under her chin, displaying a diamond ring on her left-hand ring finger, fringed front bangs, and a wide-mouth smile, displaying her teeth. The head banner of the website shows a picture of five white families, some with babies, some pregnant, holding signs that say "acupuncture fertility works." To this, Samantha replied saying she "relieved to see it's legit." The whiteness of the practitioner, patients, and practice relieves the anxiety around the foreign

nature of Eastern medicine. Thus, removing the Asian aspects and actors of Eastern medicine, thereby whitewashing it.

Although Chinese herbal medicine and acupuncture come off as scary, unregulated, and uncertain, superimposing a dominant white culture and literally replacing actors and bodies with white bodies legitimizes the practice for these women. There's a level of trust and understanding that although Eastern medicine is unknown, Jennifer Willard can be trusted. Similarly, in response to Samantha Paulin's fear of Chinese herbs, Sara Alpizar recommended buying herbs through Amazon and a company called Nutricast. She shared with the group: "Honestly, buying through Amazon makes it less scary. You can check the ingredients and rely on American companies. I suggest Nutricost Dong Quai 565mg, 240 Capsules (Angelica Sinensis) - Veggie Caps, Non-GMO, Gluten Free."

MARKETING

One element that is used by fertility health companies to construct and maintain fertility health culture and its products as a white middle-class female cultural form is marketing. This is an important mechanism in spreading colorblind eugenics. These products are situated in a consumer-based market, thus the presence of marketing strategies are clear and bountiful. Marketing strategies are used by fertility health companies to inform potential customers about the product and companies' identities. In this section are some examples of fertility health's marketing and how whiteness operates as the norm, perpetuating default discrimination and colorblind eugenics, especially through these digital products and communities.

Email Advertisements

"We started Ovu for women like you" *pictured is a blonde, white woman with blue eyes

Imagery is a strong aspect of fertility health marketing that operates within a frame of whiteness. Many of the images used by fertility health companies to promote their products are void of people of color, even when they are cartoons. Skin is mostly white and hair is mostly light. In order to understand their marketing better, I tracked 55 email advertisements from Ovu between April 2019 to September 2020. Of those emails, 20 pictures overtly displayed white skin and white people, 2 included brown skin, and 1 had possible East-Asian subjects. Among these ads, 4 were cartoons; however, they all displayed only white skin.

Imagery did not act as a lone mechanism of whiteness here. Rather, literal images of whiteness were used to represent larger themes of community, marking community through Ovu as a white space. One email advertisement's subject line was "Ovu is a village." The picture, which is twice as large as the body of text itself, shows a white woman with brown, wavy hair. She appears to be in her late twenties to early thirties, wearing a lacy, thin-strapped purple tank top and a mélange grey sweater, draped loosely, displaying her left, bare shoulder. She is holding an iPhone in her left hand, clearly displaying the Ovu watch on her left wrist. She also has a ring on her ring finger with a single solitaire diamond- presumably a wedding ring. She is wearing striped pants that match her top with a scalloped white, lace on the edge. She is leisurely seated on a white sofa with white pillows and white window frames, her leg bend and propped up on the sofa. The background is bright, lit by natural light. The main body of the text empathetically states:

> We're there for you. Too often, women in our culture have to navigate reproductive health and fertility completely on their own. We created Ovu to be your partner. To provide personalized information about your body, to show you trustworthy and research-backed health information, and to connect you with an instant community of women experiencing the same things you are. We've got you.

Following the image, which is the biggest part of the email, it appears that the ***you*** that Ovu is there for is middle-class white women. Whether intentional or not, these images signal an insider-outsider status. This may be on the far end of implicit whiteness, however, the following section examines more explicit email advertisements.

This email, received on December 2019, with the subject line "Don't just take it from us" shows the same woman. She is laying in a white bed, with white pillows, and a white duvet pulled up right under her chin. She has a wide-grin, displaying her teeth. Her diamond ring and diamond band are pictured on her left, ring finger. She has the Ovu clearly displayed on her left wrist. The bottom left of the photograph has a purple circle saying "eligible product, FSA/HSA" with a teal circle inside showing a check-mark. The text of the email says, "They'll tell you, it works. Ovu users are women like Katie, pregnant on cycle two; Kate, who conceived on cycle three; and Noelle, who got pregnant on her first cycle. Take control of your fertility. Join the more than 30,000 women who got pregnant using Ovu." Audit studies show how distinctive names signal race. Different names treated as black or white may be received in different ways with very real consequences, such as less job call backs. Here, Ovu says that their users are like Katie, who is white. Further, they're like Kate and Noelle, both names signaling whiteness.

In April 2020, Ovu sent an email with the subject "We're with you on pause." The body is an image picturing a snake plant in a terracotta pot, a lit candle, and 2 pairs of hands. One of each pair is holding a mug with black coffee inside. The other of each pair are holding each other, displaying one hand with red nail polish and a diamond ring with a halo setting on the ring finger of the left hand. Both sets of hands are white. In October 2019, Ovu sent an email titled "We started Ovu for women like you." The body of the email first shows a picture of their founder: she is white, light blue eyes, blonde hair parted on the side. She is wearing a white, collared, button-up shirt. She has a close-mouthed grin on her face.

The implicit messaging from all these email advertisements is clear: Ovu is for white, married, middle-class women. We're here for you *if you're white, married, and well-off*. By being colorblind and not addressing race, Ovu and Ovu's advertising is promoting colorblind eugenics. They signal and draw on whiteness while perpetuating default discriminations. Women do not navigate the same health field by race. By being colorblind, Ovu can avoid "race" by making whiteness the default. However, whiteness is also a race issue and ignoring this reality continues to distort vision and only tells white women to try harder to have children. Ruha Benjamin (2019) explains how emerging technologies mirror back racist patterns of thought and thinking associated with racial phenotypes and categories. Simply put, race neutrality is a deadly force and technology inherits the biases of its creators. Similarly, marketing draws on these similar discriminatory assumptions and biases, continuing to reproduce the default settings of race, class, and gender and promote colorblind eugenics.

Ovu Partner, Ovu Bracelet: Instagram Influencers

"Use code JDAVIS for $20 off your Ovu bracelet!"

Ovu also relies on social media influencers to market their product. Instagram influencers are individuals who have a dedicated social following, especially on the social platform Instagram. Successful influencers are viewed as experts by Instagram users within their niche, whether it be wellness, the market for petite shopping, health, or baby goods, and have up to a million followers. Influencer marketing is a type of social media marketing that works through endorsements and product mentions from influencers. This type of marketing works because of the number of followers and high amount of trust that influencers have built with their following. Advertisements are set apart with hashtags, revealing that products were given to influencers by companies, and the influencers are being paid to market their goods. Thus, when following the base of influencers paid by Ovu, it is not a mere coincidence that only 0.025% of their paid influencers are non-white. It is an active choice by the company to grow their intentional customer base.

I followed the hashtag #ovubracelet on Instagram to identify Ovu's official social media influencers. The hashtag #ovubracelet has 3,760 posts on Instagram. Many of these posts are from Ovu's main account, however, many of the top posts include paid advertisements from Ovu partners. The top 400 photographs posted by self-identified Ovu partners include 3 East-Asian influencers, 7 Black influencers, and 390 white influencers. All of the partners are women. Of the notable Ovu partners are past contestants and winners of the American reality television dating game show the Bacherlorette and the Bachelor, past Americans from the 90 Day Fiancé, an American reality television series that follows couples who have applied for a K-1 visa, and a

Kardashian. These posts all include hashtags such as #ad, #ovupartner, #ovubracelet and include custom, unique discount codes for each partner, such as "use code JDAVIS for $20 off your Ovu bracelet!" Every time a consumer uses a partner code, the partner receives a commission. These hashtags signal that the post is a paid advertisement. It is generally frowned upon to not be forthright with advertisements on Instagram.

The top four most popular posts by Ovu ambassadors on Instagram were all made by white women. Here, I will outline the influencers who posted the first four most liked posts using the hashtag #ovubracelet. According to Instagram, top posts appear on trending hashtags to show you some of the most popular posts that are tagged with that specific hashtag. Underneath the top posts, posts are arranged chronologically. Thus, getting a top post is an accomplishment. The first top post is by Rachel Hoffman: the American participant of 90 Day Fiancé. 90 Day Fiancé is a well-known reality show for displaying the xenophobic nature of Americans surrounding the K-1 visa and foreigners marrying Americans as a free way to gain a green card. Rachel, who is white and Jewish, has a total of 1.1 million followers. The post itself has 56,013 likes, 1,544 comments, and was posted on November 4, 2019.

The rest of the posts were by white, blonde influencers. The second post is by Jessica Davis, self-described as "believer | wifey | new mom | owner of Brentwood Manor (a wedding and event venue in Texas) just an everyday girl sharing her life. let's be friends." Jessica has 550k followers. Jessica has long, platinum blonde, wavy hair and blue eyes. The post itself has 12,049 likes and 623 comments and 3 photographs. The third post is by Laura Brown, self-described as "Everyday life + affordable outfits. Renovating our dream home with my husband, Miller. Everything linked here." Laura has 1.1 million followers. The post itself has 105,535 likes and 4,146 comments. Laura has shoulder-length, wavy, dirty-blonde hair and green eyes.

Her Instagram features pictures of her modeling clothing casually and pictures with her husband. Her husband is white, has dark brown hair, and a goatee. The fourth post is a second post by Jessica Davis. It is unclear what made the top four posts be the most popular. However, what we see clearly is that they are all posted by white women. Thus, the consistent image promoted throughout fertility health culture online is that of colorblind eugenics: though actors are not explicitly addressing race, by avoiding the topic, or not bringing it up, they are still perpetuating the idea that white women are the main group of individuals being targeted to enhance their fertility health and chances at conception.

Women discuss fertility health in white spaces, whether online, through Instagram, or in gentrified-area cafes and boutiques. Fertility health may span certain social groups, but one thing remains clear, it happens in white spaces and it operates through the frame of whiteness, furthering colorblind eugenics. Furthermore, the majority of consumers in this culture are white, female, and middle class or above. The use of space and imagery by the fertility health industry is a structural element in the maintenance and construction of this culture as white, female, middle-class culture. My findings show the fertility health industry is created and maintained through a process of whitewashing, maintenance of white spaces, and marketing, in which everyday practices and decisions seek to deny racial politics and reinforce colorblind eugenics. Companies and individuals construct white culture and normalize this culture in place.

CHAPTER 4

"Don't Take Negative for an Answer": REPRODUCTIVE TECHNOLOGIES, THE FERTILITY HEALTH INDUSTRY, AND THE PRODUCTION OF KNOWLEDGE

NEOLIBERALISM & HEALTHCARE CONSUMPTION

My analysis of technological innovations within the fertility health industry draws on Foucauldian approaches to health in the modern world. Feminist scholars have powerfully documented the emergence of a "postfeminist" sensibility that emphasizes women's agency while framing consumer choice as a source of empowerment. Engaging this theoretical work, I argue in this section that these technological innovations in the fertility health industry work to remediate a tension around neoliberal consumer culture: the tension between empowerment through consumer choice and embodying discipline through control. How does one simultaneously embrace consumption *and* not only demonstrate self-control but also surveil one's community? My analysis explores how women manage this contradiction in their everyday health choices.

Foucauldian insights connect macro-level power operations to the management of individual bodies in late modernity. Foucault extends the understanding of power by moving beyond repressing bodies to frame power as itself embodied: [power] "having an immediate hold on [the body]; they invest it, train it, torture it, force it to carry out tasks, to perform ceremonies and to emit signs" (1977: 25). From here, many feminist scholars have extended this idea of power onto the context of neoliberalism through governmentality: how conduct is shaped by not only by formal politics but also *or especially* by the mundane ways that individuals govern themselves and others through everyday life and choices. Most namely, scholars have researched how technologies of responsibilization transfer collective responsibility onto self-regulating

individuals. That is to say, while consumption may be couched, culturally, in terms of empowerment, practices of consumption may also serve the function of individual regulation, conformity, and discipline. In effect, discipline is a veiled form of false empowerment. In this chapter, I outline how this manifestation of power unfolds through fertility-based technological innovations, fertility health companies, and online communities.

DICHOTOMIES OF NATURAL & SCIENTIFIC

The cultural contradiction of consumerism as both self-empowerment and self-regulation is maintained in large part through the dichotomizing of natural and scientific in the neoliberal health landscape. Such a dichotomy adds to the responsibilization of women, in particular, as self-regulating individuals. What is "normal" or "natural" and who gets to define it? More specifically, what is normative mothering and how is that shaping experiences for women even before becoming a mother? In what follows, I show how fertility health companies construct their own version of normal, using both ideas of scientific and natural, which pushes women to a version of neoliberal consumerism where women find empowerment and agency in ostensibly better, overlapping consumer choices. Further, I find that this version of normal is explicitly created within the realm of fertility health culture, adding on responsibility for women alone, leaving the men's fertility health arena free of the value-laden, pressurized messaging of compensating for a broken health-care system through their own choices as a consumer.

The idea of "normal" in the space of fertility health culture connects back to the concept of "natural." Chris Bobel explores "natural mothering," which she argues is a politics of accommodation as women put "family first and mom last" (2002:163). In this context, Bobel finds that women use consumerism to reclaim home and family, placing motherhood at the

center of what it means to be female. This form of mothering also connects with natural mothering. Norah MacKendrick (2018) argues that while mothers go so far as to situate their children's chemical burdens within their own bodies, they value the agency they find in being proactive consumers by making better consumer product choices. What I find is that these same pressures and internalization by mothers are being made *even before* becoming an expectant mother.

NEOLIBERAL HEALTH FAILURES LEADING TO SELF-MONITORING

"Going down the rabbit hole"

This section contributes to our understanding of neoliberal health governance and its gendered implications by highlighting two particular mechanisms: fragmentation of health specialists and self/community-surveillance. In the first part of this section, I analyze choice between medical specialists and unpack the idea of medical information and self-advocacy as empowerment. Next, I analyze how women navigate self-advocacy as empowerment at the community level.

Fragmentation of Fertility Health Specialists

"It doesn't hurt to try."

Fertility health knowledge is created in silos that leaves the responsibility for fertility health solely on the shoulders of the patient as a consumer expected to juggle streams of knowledge that might be divergent. The specialized training behind each of these specialty professions, such as reproductive endocrinologists, reproductive psychiatrists, and obstetrician-gynecologists to name

a few, within the fertility health industry, of which I find women are well aware, do not always align in terms of knowledge and advice.. And yet it is the lay women themselves who are the ones having to go from profession to profession to piece together this fragmented knowledge, to advocate for themselves, and also be the expert of their own body and their partner's (mostly male) bodies. The women must become not only the experts of their own eggs and hormones, but they know also come to know everything about sperm and male hormones as well.

It seems an impossible task—one that is very stressful mentally, physically, and financially. While individuals are left to quite literally search for answers themselves and interpret information as a self-trained health expert, they are also paying, usually out of pocket, for all of these services, whether it is an acupuncture appointment or another fertility application for their phone. Ovu's watch is $299, Fertility Today's Hormone Test is $159, their pregnancy tests are $14, and the Fertility Today app is free. Good Dude's fertility test for men is $189 and Path's test start at $89.99 – $199.99. Women often talk about having to pay for multiple hormone tests, doctor's appointments, and their partner's tests as well. When women pose queries on company websites about what their partners can do, the companies do not provide concrete answers or steps. Rather, they place the responsibility on the women; in this case, the women who are asking questions assume the intellectual, financial, and emotional labor to find out. The issue here is not only managing their own physical, mental, spiritual, emotional, and financial health but also being able to control their body, their embryos, and their relationships. The structural issue of wide gaps of knowledge in this arena is named through all of these companies, yet the weight of the response and change is on the individual, often advising them or leading them to consume even more information and products.

For example, during numerous webinars I attended, Fertility Today urged women to create a "fertility care team": a group of specialists and doctors for one individual or couple. Employees of these companies essentially commodified intimacy (Bernstein 2007), advising individuals to look around to create the perfect team due to the fact that "you need to have a connection with your specialist because this journey is so personalized and so intimate." Yet, what women were told to look for in their specialists was not this intimacy per se, but, rather, specialized knowledge. In one webinar, in May 2019, Nurse Jeannie illustrated this idea by saying, "Honestly, OBs don't typically know a ton about getting pregnant. It's not really part of their training. Some are a bit more progressive than others, but I didn't bother with my OB when I was ready for further testing/intervention." Thus, she added more specialists to her team for her their expert knowledge, which she interchangeably described as intimacy. However, these two concepts seem mutually exclusive in this sense. Intimacy is not expert knowledge nor the other way around.

Building a team of supportive individuals within a neoliberal healthcare system is idealistic at best. In the current healthcare system, individuals are not only paying for each visit with each fertility specialist, but they are also taking the time to call, schedule appointments, move their day around, and expend the time and the labor to run from appointment to appointment. During a webinar, Nurse Jeannie goes on to say that "You will likely need your OB (obviously) and when you are ready to TTC [try to conceive] with donor sperm you will need to see a Reproductive Endocrinologist (RE). Other than that you could consider acupuncture and if you have any other medical concerns a Maternal Fetal Medicine (MFM) specialist." The sheer number of specialists in one stream of advice is overwhelming. Yet, Jeannie uses intimacy as a reason for needing each individual specialist. These fertility health companies assure consumers

that they are not just paying for expert knowledge, but they are also gaining individualized support and care. Thus, in Ovu's online community, the phrase "it doesn't hurt to try" is repeated consistently. Individuals use this phrase when nudging each other to try a new specialist. Companies use this phrase when building positivity, morale, and lifting spirits. At least once a day on women's digital platforms, a different individual will advise another woman by expressing this sentiment.

Yet, Anne, a 32 year old blonde hairdresser from Alabama paints how it *does* hurt to try:

> I don't have the money, strength, or joy to do this anymore. Each doctor tells me something different. I am so anxious and broke. I can't keep managing like this... I'm not managing. I'm simply not. But my husband won't get off his ass and somehow now I'M the one calling HIS or should I say MY urologist? Help!

Going from specialist to specialist, even her husband's, built to a breaking point for Anne. Most ironically, during a webinar called "Ask a Nurse Anything," Nurse Jeannie evades directly answering questions while continually referring individuals out to other specialists. During this one webinar alone, Nurse Jeannie refers separate individuals to these following specialists: Acupuncture, naturopaths, massage, urology, reproductive endocrinologist, obstetrics and gynecology, genetic specialist, fertility treatment specialist, prenatal health coach, maternal fetal medicine specialist, regular endocrinologist. The only clear answer that women receive within these communities, webinars, and websites is to find empowerment through choice. However, like Anne explained above, while "choice" is expressed as a source of personal advocacy, it is in

reality quite costly mentally, physically, and financially—in some cases, it is simply unattainable.

Hopping from one specialist to another is echoed within the women's communities; and, the specialists they consult are not limited to human actors. Rachel, a blonde 34 year-old insurance salesperson from Utah, points out how even the Ovu bracelet is now considered an expert. She asks Nurse Jeannie during the webinar, "The Ovu is telling me something different from what my OBGYN is telling me. Who is actually correct?" Instead of answering the question, Nurse Jeannie responds by referring Rachel to purchase Day 21 progesterone tests—pointing her to another non-human "expert." The women are consistently told to purchase more products, go to more specialists, and keep advocating for themselves. Still, the reality of what they are facing lies in structural issues, leaving women within the gaps of knowledge and specialists. While this experience is characterized as an intimate way to build a supportive team, it is actually mirroring the problematic nature of our healthcare system. The fertility health arena expects the individual to be the expert of their own health, deploying intimacy metaphors and language; however, individuals actually tend to experience a lack of connection with providers. Women are being told to embrace a presumably empowering act of consumption while simultaneously demonstrating self-control and discipline through their constricted "choices" of healthcare providers.

Surveillance: Women's Communities, Knowledge, and Power

The control side of the fertility health equation emphasizes the hard work, discipline, and education required to construct a subject capable of making good health choices. The neoliberal ideal of self-control includes an idea of "deservingness" and rewards those who exercise choice

and become responsible for their choices (Reich 2014). As one of the women in Ovu's online community said, "Do not stress. Knowledge is power. I know, easier said than done." Below, I document the aspects of how women embody discipline through self-control of fertility health at both the individual and community level.

From naturopathic advice to scientific research, expert knowledge is a central feature of fertility health discourse. Yet, in a fragmented healthcare system, women are expected to be the main actors navigating this knowledge and research—positioning, as they then are, as the experts in seeking the right kind of knowledge. Women, fertility health company employees, and even health care providers regularly talked about "Dr. Google." From hosting webinars called "Goodbye Dr. Google" to referring to personal usage of the search engine, Dr. Google represented a tension of mistrust, fragmentation, and a diffusion of power. While power was now ostensibly in the hands of individuals—to advocate for themselves and to know their bodies best, leaving individuals to make up for a fragmented system through their own research and decisions—such an arrangement continued to compound pressure onto these women. Dr. Stemper, a reproductive psychiatrist, addressed this tension of embodying discipline through control and the anxiety that accumulates with more knowledge in a webinar hosted in March 2020 for women considering getting pregnant during the COVID-19 outbreak:

> These are very personal decisions and I think that there isn't going to be any perfect advice from anyone and obviously women and pregnant women are subject to a lot of unsolicited advice. So I would say that your heart is your heart and only you know your heart. For me, no one can predict or tell you what may or may not happen. In terms of what's going to happen with the healthcare system there are

> just too many unknowns to say anything. Just know that staff and clinics are going to be stretched and stressed and I guess if you're considering getting pregnant, factor that into your decision making.

While something like a global pandemic is clearly out of the hands of individuals, Dr. Stemper still advised those attending the webinar to just "focus on literally one step at a time. Literally one week at a time." While acknowledging the fact that healthcare professionals may be unable to help with certain medical issues, Dr. Stemper still leaves the individual ultimately responsible. Throughout the webinar, the reproductive psychiatrist continues to name the overwhelming feeling that everything is out of an individual's control and that making decisions is a difficult feat. Yet, experts also tend to frame choice as empowering—not dispiriting—in these contexts.

During webinars, many women described an interest in accumulating expert fertility health knowledge. In a webinar about egg-freezing, Dr. Khan, a reproductive endocrinologist, shares her own personal story: "I think what I had a really hard time going through my own journey was using Dr. Google... well what are my peers doing and what should my numbers be, right?" Dr. Khan was referring to this pressure where women are struggling to trust: trust their specialists, Dr. Google, anecdotal evidence, even themselves. This loop continued where questions about (mis)information created anxiety and pressure to check every possible source, accumulate knowledge, and to then see whether they are making the "right" decisions. Even a highly trained specialist such as Dr. Khan was not exempt from this constant need to verify medical information, by turning to networks of women and Dr. Google.

Incorporating expert knowledge and making controlled decisions is framed as a health objective, but one that creates anxiety and extends surveilling decisions among individuals and

within communities. Women esteemed the healthcare providers as experts, while constantly acknowledging structural failures—the difficulty, for example, of establishing a solid support "team"—and the fact that not all healthcare providers are truly experts. In Ovu's online community, Carly Dougherty asked an open-ended question of what others are doing in their journey to conception and fertility health. Most answers were light-hearted and encouraging, adding to a wealth of options around what an individual can do. Some answers ranged from essential oils to eating pineapple core and taking baby Mucinex. Mackenzie Lupton, a former Teach for America teacher and Harvard education policy graduate from North Carolina, responded to this post in a cautionary tone:

> Make sure you pass all supplements by your provider before adding to your routine. There's lots on the market - lots that work, lots that aren't regulated, and lots that aren't necessary for everyone. A trusted provider should be able to tell you what is medically necessary for YOU, and if they don't, get yourself a new provider!

This advice was intended as empowering by placing agency into the hands of the woman as a true expert over her own journey. At the same time, it has a hint of paternalism in trying to protect women from making a poor choice. This confusion about whom to trust and how much almost always ended in the same message: trust yourself as a discerning judge. Interestingly, this message lie in direct contradiction with the advice of building a vast team of experts to trust.

Contrastingly, while men's fertility health websites also acknowledged structural failures around men's reproductive health (Almeling 2020), they did not emphasize hard work, self-

discipline, and personal edification like the women's did. In fact, one of the reasons Owen co-founded Good Dude, a men's fertility health company offering in-home sperm analysis tests, was because he "just saw a pretty big gap in the research" and that "in that process of looking through the data that's been published in the research in men's fertility, it's seemed pretty, pretty poor compared to most other clinical research realms." Because of the lack of reproductive and fertility health research on men's bodies, Path, a fertility health company with an at-home sperm analysis test, partners often with the community "Don't Cook Your Balls" (DCYB) to offer advice to their customers. DCYB's tagline is a "light-hearted guide to men's sexual & reproductive health" and was "launched to help men learn and feel comfortable with their reproductive health. Men's health, and more specifically, the relationship men have with their health, is often overlooked."

While acknowledging institutional failures in research and medicine, these men's companies still turn to a light-hearted and gentle way of bolstering individual knowledge, showing that this method of informing is possible. Similar to women's health companies, Path acknowledges that "while there are many important steps you can take to improve your fertility, it is important to remember that there are many biological factors that are out of your control." In this article, there's a picture on the side of a man and woman kissing as the sun is setting by the beach. It reads, "Continue to nurture your loving relationship throughout the summer…we promise it will be worth it!" Comparing this demeanor to that displayed in women's websites that *also* acknowledged factors out of individual's control, it is clear that men receive a much more intentionally gentle and kind message. Men are not being nudged to become experts of an area that has a dearth of knowledge, nor are they being pressured to embody and accept the

responsibility of making up for the broken system through their own choices. Rather, they are encouraged to enjoy life.

Making up for failing products

"You are your best advocate!"

The control side of the fertility health equation also extends to technological glitches and user error, expecting consumers to essentially become tech and medical experts. These technological products physically represent failures of medical interventions. While technological innovations break down some of the barriers to accessing healthcare providers and specialists in the fertility health industry, these products are often difficult to use, expensive, and, at times, faulty. Perhaps as a direct result of the fragmented healthcare system, the companies of these products push the onus onto the individual to be an informed consumer and to advocate for themselves. Yet in this situation, advocating for oneself seemed to mean engaging in consumerism—purchasing more digital products and phone apps to supplement failing fertility-health products.

A common theme in webinars, online communities, and information sessions hosted by these fertility health companies was the very explicit messaging that "you are your best advocate." This message is stated positively and encouragingly, seeking to empower individuals to take control of their own health. The logics of choice and control are discursively written through blogs, embodied through individuals, and perpetuated through healthcare providers framed with a lens of empowerment. Yet, this arrangement also leads to more anxiety, especially with regard to user error around these products. I provide a lens here for investigating individual

embodiment of neoliberalism while avoiding a totalizing account of governmentality through the example of user error around these technological products.

Although the women's fertility health companies started online communities with the hopes of building support around their own health journeys, these online spaces often ended up being a place to troubleshoot and discuss anxiety around the products themselves. In fact, even within themed webinars, such as a weekly "egginar" hosted by Fertility Today, individuals often turned to technical questions around the products themselves. Fertility Today provides an in-home hormone test. When purchasing a test, individuals receive emails with an instruction guide, a link to a tutorial video, and a kit in the mail. In the kit are three lancets, a band aid, two cards to fill with blood, and a return envelope. The directions guide individuals to wash and dry hands, poke fingers with the lancet, and "collect the goodness on both cards," being the point of evaluation that most women struggle with. Here are the detailed instructions:

1. Stretch your arm down towards the table (gravity is your friend!) and, **without touching** your finger to the card, allow a large drop of blood to fall freely onto the box on the **first card**. Place 4-10 large drops in the box to the left, or as many as it takes to fill the card **past the first line**. It may take several minutes to get enough blood. It helps to massage your lower arm with your opposite hand.
2. (written in red lettering and bold font) **If blood doesn't collect past the first line, our lab will not be able to analyze your sample.**
3. Once blood has gone past the line on the first card, you can start to fill up the **second card**.

4. If you aren't able to fill up both cards with one prick, repeat above steps and give a new finger a prick with an extra lancet.

The instructions only touch the surface of the complications, stress, and user error that occurs. Erika MacDonald says she "fainted after filling both cards" and Rachel Demonte replied that she "ended up puking after the second attempt." Individuals' concerns were varied. Kimberly Wong was unsure of which day to take the test during her menstrual cycle. Cassandra Beyers didn't know if her birth control would affect the results of the testing. Gina Gaurino was concerned that the ink on the card smudged her name. Allison Carter posted pictures of her testing, exclaiming:

> I am soooooooo frustrated with this test :sob: :rage: I feel like I wasted money! My blood will JUST NOT FLOW!! I have gone through 2 Lancets and got one drop of blood that is probably dry by now. I've done all the suggestions! I really feel like my money went down the drain.

An administrator replied to this thread, comforting Allison by saying "Our lab will do their best to process them and if they have any issue we'll send you a new kit free of charge!" Yet, this kind of response served as another point of frustration for users. Frustrations circled around not only the price point, but especially around user error. Even if Fertility Today offered to send multiple free tests, which they often did, individuals struggled to keep taking a test that was difficult and that relied on the user alone to master the skills necessary to effectively finish the

test. In fact, even when individuals successfully sent off their tests, the lab often failed in analyzing the tests, unable to deliver results. Joanna Lee described her struggles:

> I was in a cabin celebrating Valentine's Day with my husband. I waited until day 3 of my period to take the test. My husband tried to help but I was bleeding from my vag obviously but also my finger... I'm jumping up and down. He's asking how he can help. I'm yelling at him. My blood doesn't even hit the damn card. Ugh, miserable. Anyways, I sent it off AND THE LAB COULDN'T ANALYZE IT due to a "laboratory error." So I did it again. At home, this time (while my husband was at work). Uhm.... yeah, I can't even make this up. Right before we head to Hawaii for our honeymoon, they email AGAIN saying the SECOND test was ALSO messed up on their end! I know I spent a lot of money, but I just gave up. Maybe knowledge isn't really power.

Even when users were able to figure out how to navigate the testing, the company's lab ran into errors as well. Further, anything specific the companies are trying to do in their communities, such as targeted discussions around being a working woman, are constantly muddled and derailed by logistical questions about the test. There are so many technical questions about the test itself and a lot of anxiety and fear and it creates. To extend Joanna's lament, knowledge is supposed to be power in the modern world, but the pursuit of knowledge is sometimes futile, as well as anxiety inducing, in a neoliberal medical state that does nothing to structurally care for people and women in particular.

Users also struggled with Ovu, the fertility tracking watch. The ovulation tracking watch has started fires while charging; it has included broken straps; and, even when working properly, users could not interpret the data correctly. In December 2019, Martha Gillot posted in the Ovu group a picture of a burn on her wrist seeking suggestions as to why this could be happening. There were over 46 comments in response, with many women "following [for] the same issue." Eventually a moderator turned off the comments after posting:

> Previously when skin irritations were brought up, we would instruct users to clean their bracelet and device with alcohol or a damp cloth. Going forward, we recommend you contact support. When you contact Support, they will provide a prepaid shipping label and deactivate your device. Thanks for understanding.

Aside from actual manufacturing issues, the company itself institutionalized user error by making a weekly thread where individuals could post pictures of results to ask for help in interpretation. While responses averaged around 134 per post, all support was from fellow users, far from experts. Still, individuals were expected to not only be experts of their own health and data, but also capable of offering medical and technological insights to others as well.

While users were acutely aware of the failures of these products, they continued to compensate by using even more technological products. Jessica Collins importantly noted in the online community that the "best tip someone gave me was to pair Ovu with Fertility Friend. FF is way more responsive & will take into account your CM, OPKs etc. So you're just using Ovu as an accurate BBT but you can also put stuff like heart rate into FF. After 3 months I'm finding that Ovu & FF are coming into line with each other." It was not uncommon to see individuals

use both Ovu *and* Fertility Today. On top of that, users also used other tracking applications such as Fertility Friend and many others. It is noteworthy that none of these products or applications are free. A patchwork of consumer goods is filling the gaps created by a fragmented health system—where finding a full, supportive "team" of specialists is difficult and where knowledge is increasingly elusive.

THE CONSTRUCTION OF "NORMAL" LEADING TO VALUES AROUND INTERVENTIONS

"Do I need to supplement my supplement?"

In this section, I argue that fertility health companies use the social construction of "normal" to increase a sense of control for individuals in regards to their own health. What was not possible ten years ago in terms of scientific and health knowledge, especially around women's reproductive health, is now attainable through scientific innovations offered through these companies. Yet, while positive reproductive outcomes are desirable, these companies turn to a form of consumerism urging individuals to buy every product, every app, and make better choices overall for their fertility health and future children. Miranda Waggoner (2017) defines the zero-trimester as the three months before conception and shows how the CDC tried to institutionalize this time by changing the definition of pregnancy to be 12 months. While the zero-trimester is typically thought of as three months before conception, these fertility health companies expand the realm and time-frame exponentially of when individuals can and *should* think about their potential children to a lifelong self-disciplinary journey.

The (ab)Normal and Natural

"*A little bit of science for you- there's no clear definition around regular.*"

When companies frame fertility health, they reference a muddy and socially constructed division between natural and artificial, normal and abnormal, regular and irregular, often discussed in contexts of birth control, the menstrual cycle, and conception (Reich 2014; Reich 2016). In U.S. culture, individuals tend to valorize the lack of intervention with conception, while simultaneously trying to normalize the lack of a natural menstrual cycle. Even though communities and companies focused their messaging on technological products for fertility health, employees and consumers both valorize a natural cycle and conception. This tension between natural versus scientific, and normal versus abnormal, swayed both ways in terms of value—with normal being best, at times, and abnormal bringing relief in others. To illustrate, Fertility Today hosted three webinars and posted four blogs in the month of May 2020 alone to "debunk myths of birth control," focusing largely on what is normal and how to conceive naturally while using technology as an aide, which is a contradiction in terms. This complex dichotomy of information signifies what brings anxiety and also signals what is valued.

Birth Control and the Menstrual Cycle. Birth control and the menstrual cycle are powerful areas within the fertility health industry that demonstrate the uncertainty, construction, and framing of knowledge. Other stages of reproductive health, such as conception which I discuss later, have a stronger pull towards a singular definition of the natural as superior. Birth control and the menstrual cycle, however, demonstrate the power in porous definitions of what is

natural, and thus normal. Fertility Today's opening lines of their webinar on birth control displays the social nature of what is defined as normal:

> Nothing in high school health class prepared you for all of this! Let's face it, there's just a lot to know and the menstrual cycle is complicated. There are variants of normal and there are medical conditions that can affect the menstrual cycle... so I hope everyone takes that home today. That the menstrual cycle isn't just about the uterus and vagina- it's really about the uterus, ovaries, and brain and there are a lot of variations on the brain. Just remember that what you're going through might be normal!

Being able to fall under the umbrella of normal was continually portrayed as a comfort. Throughout this webinar, Nurse Bethany highlights the assurance that "normalcy" brings, seeking to advocate for women and their own experiences.

Throughout webinars, blog posts, and online conversations, fertility health workers continued to actively normalize the irregularity of periods. Mina, an employee of Fertility Today, posted an online poll, asking how many individuals experience irregular cycles. The answer choices were "That's me, I have irregular cycles!" and ":blush: I don't have irregular cycles." The framing of the multiple choice options highlight the normalcy in the irregular, rather than seeing irregularity as a flaw or variant. Still, individuals continued to need a common definition of "normal," leading to conversations around the "natural." A common question posed among women during webinars and online conversations was how long after birth control individuals can expect their menstrual cycles to go back to normal. In response, Nurse Helen explained that

"there's no need to get your body clean or go back to a natural state." While the individual asked about going back to "normal," Nurse Helen, using natural and normal interchangeably, responded by saying there's no need to go to the "natural" state. She went a little deeper in her explanation after receiving more clarifying questions.

> I mean to be clear… There is a quote on quote natural state which really depends on your pituitary, the gland in your brain, that sends signals to your ovaries telling them produce *this much* estrogen... produce *this much* progesterone... and so the pituitary and the brain... it's going to set (gestures air quotes with fingers) the natural (ends air quotes) rhythm and amount of hormones, which then determine when you bleed, how much you bleed, the nature of your period… all of that is controlled by the (gestures air quotes with fingers) natural (ends air quotes) state of your brain talking to your ovaries.

While using natural and normal interchangeably, Nurse Helen herself still made a distinct effort to explain that natural is not a clear state. This slippage of terms and confusion was displayed from the top, such as through Nurse Helen, to the bottom, through things that individuals said. Further, her consistent use of air quotes signals that normal is hard to define and is a slippery concept.

In fact, the top can actually go so far as the institutional level of the medicalization of terms. One hormone that Fertility Today's at-home test measures is the Anti-Müllerian hormone (AMH). According to their website, AMH is "the most important hormone for testing ovarian reserve (the eggs you have 'waiting in the wings')." Results for any test looking at one's AMH

do not list numerical values, rather, the results are ordinal coming back as either normal, low, or extremely low. Yet Dr. Khan, a reproductive endocrinologist, directly addresses these values in a Fertility Today webinar about egg-freezing: "Textbooks give you these values like normal or abnormal, but that's not really true, right?" While doctors, companies, and individuals all have ambiguous definitions of what "normal" is, pressure continues to build on women as consumers to meet all the understandings of normal through their choices and purchases, even as "normal" is a slippery concept in the rhetoric of this health arena. Even though results of a hormone test will come back as normal, low, or extremely low, individuals are being told that there isn't *really* a normal and that they can make up for this gap in knowledge through more testing, more apps, and more research. Sometimes this ambiguity brought relief to consumers, especially around the irregularity of periods and hormones; however, within a system that continues to name the "normal," individuals are being upheld to a certain standard to achieve, even when not possible.

Conception. In contrast, definitions around the term "natural" for conception were less porous and, even, valued as superior. Even though the efforts of those involved in this study to craft natural conception inherently involve technological innovations, from Ovu's tracking watch and Fertility Today's hormone test to daily ovulation strips and Coq10 that are not found in nature, the experience itself of conception and birth are desired and defined as natural experiences, often seen as empowering to women who can intuitively trust their bodies.

As conception is inscribed with symbolic meanings of being a natural state, many individuals express grief and disappointment when needing interventions. In May 2020, during the height of the global COVID-19 pandemic, Emily Ethridge, a poet from California, posted in Fertility Today's group:

> Anyone else here grieving that they had to cancel all their fertility appointments, more "natural" fertility treatment appointments, can't "date" (or at least not efficiently or safely with social distancing) for the next 12-18 months, and may very well have seen the final nail in their fertility or the chances of a 'normal' family from covid?

Here, Emily is referring to fertility appointments with a reproductive endocrinologist. In response, Nurse Morgan attempts to comfort Emily: "Be open to all the ways we can make a family these days. The ability to conceive naturally decreases with age." Emily showcases the tension that exists in preferring certain treatments to be "natural," even when they do not occur in nature. In order to do that, a hierarchy is created where certain treatments are deemed to be *true* interventions, obscuring many others to be more natural. In particular, interventions were conceptualized as within the realm of assisted reproductive technology (ART), an institutionalized term. The CDC defines ART as "alleviat[ing] the burden of infertility on individuals and families," including "all fertility treatments in which either eggs or embryos are handled (Centers for Disease Control and Prevention 2020). In general, ART procedures involve surgically removing eggs from a woman's ovaries, combining them with sperm in the laboratory, and returning them to the woman's body or donating them to another woman." There was a clear conceptual divide being offered by fertility health companies between assisted reproductive technology being for infertility, with new medical technologies for fertility health falling into the "natural" and "normal" positive realm.

Complexities of carefully curated definitions around natural conception continued to have very real and physical consequences for individuals. On Ovu's online community, Jennifer Grossman states that she is "almost 39 and trying naturally, looking for advice." This idea of trying naturally was esteemed among women in the groups, leading to individuals exhausting every avenue possible, purchasing every item, going to every physician, and doing all the research. To be "natural" means to consume products that assist in the achievement of "the natural." In response to Jennifer, Paula Hayes shared her own story:

> Child #2– just found out I'm pregnant! Naturally!! I was told to do IVF (*in vitro fertilization*) and we were about to start iui (*intrauterine insemination*) on next cycle but got prego instead! So so grateful. Progesterone still low. On pills again. I'm currently 4-5 weeks. Ovulated super late like I did with my son. Usually O (*ovulate*) on cd (*cycle day*)17-22. I tried letrozole (femera) twice and could not ovulate. Metformin for 6 months. Didn't work. Dad passed away in February. I stopped my meds for my acne with pcos (*polycystic ovary syndrome*). It's called spiraldactone. Doctor said if I have a girl it will give her a penis. So I stopped it. Got back on metformin in March. Got bfp (*big fat positive pregnancy test)* on cd (*cycle* day)9! Very very early doctor said. We are due at end of March.

Metformin, most typically known as a diabetes drug, is used for infertility, but it's actually not a fertility drug. While it is a common medication to improve menstrual cycle regularity and hormonal patterns, it is actually an off-label drug when it comes to infertility. Further, metformin is not found in nature. Yet, in this conceptualization of natural conception, ARTs were clearly

considered unnatural while medications were overlooked. In the same conversation, Laura Winkleman joined in with her journey towards natural conception: "I am attending a homeopath to detox my body and I attend fertility reflexology. I also eat organic food and I try to eat gluten free products. Also get your vitamin D levels checked and ask your doctor about coq10 which helps our bodies to produce healthy eggs." Responding to Laura, Paula asked, "Do I need to supplement my supplement?"

In fact, individuals and fertility healthcare workers esteemed the natural and normal so much in conception that they described miscarriages as when "your body knows when a pregnancy is abnormal and lets it end naturally." During a Fertility Today webinar about preconception health, Lara Baptiste states that she is 4 weeks pregnant today and asks Nurse Morgan how to "make the pregnancy stick." To that question, Nurse Morgan responds that "there's no magic potion. Typically miscarriages are related to abnormal pregnancies, so your body is just doing it's thing naturally. Trust the process." The social construction of (ab)normal is made to bring relief in this context, however, with the fluctuating connotations to normal and abnormal, individuals are left confused and anxious. Seeking medical advice on pregnancy and conception, individuals are given social definitions of (ab)normal as a source of comfort, yet it is clear that individuals are not feeling comforted. Rather, they are scrambling to understand whether they are "normal," through each contextual interpretation.

CONCLUSION

In this chapter, I explore how neoliberalism within the fertility health industry operates. Discipline acts as a veiled form of empowerment. Women turn to consumerism and collecting expert knowledge as a way of finding control within a medical arena and biological process that

is so often out of one's own control. Yet, this false sense of self-empowerment also turns into self-regulation and regulation of others, as we've seen through online communities, webinars, and conversations that women have with each other. Individuals are not only holding themselves accountable to these hard to ascertain and achieve standards, but also each other as community members and consumers of these technological products. In fact, these technological products often failed and when operating at their best, were hard to interpret and understand. Women were expected to put out literal fires and come out as medical and tech experts. Further, while fertility health companies used the social construction of "normal" to increase a sense of control for individuals in regards to their own health, this construction also added responsibility to women as primary consumers of reproductive health and knowledge. While incorporating expert knowledge and making controlled decisions is framed as a health objective, this framing creates anxiety and extends surveilling decisions among individuals and within communities.

CHAPTER 5

CONCLUSION

Fertility health— encapsulating hormonal disorders, preconception health, the focus on hormones, menstruation and ovulation, and the ability to conceive, bear children, become pregnant— is a key aspect of social life and a central object of public policy. Reproduction and fertility health sustain *all* human life, yet healthcare and social scientific analyses in these areas focus primarily on women (Almeling 2020). Moreover, scholars who make claims about race and reproductive health focus primarily on people of color or largely ignore the unmarked body of whiteness. My dissertation fills these gaps by examining how men are framed within the fertility health industry and how whiteness *is* racial, especially in fertility health culture.

My research reveals how bodily inequities and hierarchies created within the fertility health industry are always both gendered and raced. In Chapter 2, I explore how companies and employees are aware of the narrative that reproduction and fertility are understood as "women's issues," with men almost completely absent from health research, thus, they counter this narrative by redoing gender in meaningful ways. Almost every employee I interviewed raised the issue of this imbalance unprompted. In women's spaces, however, marketing drew on scientific language, stripped of any hegemonically feminine norms. Rather, there was a heavy emphasis on evidence-based science and medical jargon. In men's spaces, this attempt was made by trying to ensure the content to be resonant through a normative lens of hegemonic masculinity while also centering the idea of fatherhood, intimacy, and romance.

Further, conception is understood and embodied very differently through a gendered lens. Any movement by fertility health companies towards shifting responsibility evenly to men was blanketed in this veiled way of doing gender that reaffirms and reembodies traditional gender

ideals. While men's fertility health companies centered romance and intimacy, women's fertility health companies centered science. Although conception equally takes an egg and sperm, I find that fertility and preconception health does gender in ways that creates different embodied processes for men and women. This leads to mismatches in the actual understanding of conception by consumers, the weight of responsibility around the process, and how men are framed by fertility health companies versus how women actually talk about men.

In Chapter 3, I introduce the concept "colorblind eugenics" and three mechanisms of colorblind eugenics within fertility health culture that keep and maintain this space as white: whitewashing, marketing, and neoliberal healthism. Overall, the companies I studied displayed and constructed whiteness, both overtly and discreetly, as neutral, thus failing to see racial differences. The maintenance of online communities as largely white spaces, silence in response to Black Lives Matter and the murder of George Floyd, and the othering of "Eastern medicine" and practices (e.g., acupuncture) reveals that these companies and products continue to ignore social cleavages that reproduce race, gender, and class inequality. Moreover, these companies use mainly white bodies in their advertising, as ambassadors, and as experts in knowledge, whereas they show Black bodies chiefly as negative examples of what to avoid and what not to do for optimal fertility health. Thus, the consistent image promoted by companies throughout the fertility health industry online is that of colorblind eugenics: though actors are not explicitly addressing race, by avoiding the topic, they are still perpetuating the idea that white women are the main group of individuals being targeted to enhance their fertility health and chances at conception.

In Chapter 4, I reveal how incorporating expert knowledge and making controlled decisions is framed as a health objective, but one that creates anxiety and extends surveilling

decisions among individuals and within communities. Women esteemed healthcare providers as experts, while constantly acknowledging structural failures—the difficulty, for example, of establishing a solid support "team—and the fact that not all healthcare providers are truly experts. While acknowledging various shortcomings of the medical system and reproductive health, fertility tracking sites for both men and women continue to urge individuals to compensate for a broken system through their own choices, knowledge, and consumption. Further, they place the burdens of being an ever-aware and responsible consumer of fertility health on the shoulders of women, even when it comes to men's reproductive health. Thus, in a fragmented and broken healthcare system, women are expected to be the main actors navigating knowledge and research—positioning, as they then are, as the experts in seeking the right kind of knowledge.

Incorporating expert knowledge and making controlled decisions is framed as a health objective, but one that creates anxiety and extends surveilling decisions among individuals and within communities. Women esteemed the healthcare providers as experts, while constantly acknowledging structural failures—the difficulty, for example, of establishing a solid support "team—and the fact that not all healthcare providers are truly experts. Furthermore, I show how these healthcare initiatives and products are often faulty. Yet they still leave the consumer responsible for overcoming both figurative and literal fires. The niceties of colorblind racism, the avoidance of race, these processes just continue to increase health access to white women. Without naming whiteness *as* racial, health disparities will continue as only people of color and our problems are named as "racial."

Contributions

My work adds to the literature by exploring the empirical arena of men in reproduction and critically examining whiteness in reproduction. In particular, this is a study of the expanding surveillance of women's reproductive bodies, especially in comparison to men where they matter just as much. It focuses on companies' active shaping of women's fertility health as medical, plannable, and treatable. Today, women have more choices than in earlier centuries when it comes to their reproductive health and outcomes. As the possibilities of conception have increased alongside medical and scientific innovations, so have the burdens on women to responsibly explore all options maximizing their chances of conception. While positive health outcomes are desirable, the expectation of controlling one's conception, fertility, and reproductive health is not always attainable or humanly possible.

Through my work, we see how new ways of doing gender still have unbalanced implications. While these movements towards nuancing gender scripts are important, they still fall short of enacting meaningful change towards an equitable and balanced reproductive equation. The ways that fertility health companies do gender challenges heteronormative scripts, urging for symmetry within reproduction. However, the men's and women's companies are mismatched, still leaving more burden on women. With men's sites centering romance and intimacy and women's sites centering science, women are still left to work through the medical and scientific evidence behind their health while also focusing on helping their male partners feel like sex is spontaneous and romantic.

My theoretical contribution introduces the colorblind eugenics concept and adds to reproduction literature by viewing whiteness *as* racial. My hope is that putting a name to this

phenomenon will allow more reproduction scholars to critically examine whiteness in their studies. So often, whiteness operates as the "norm" making it difficult to name and difficult to study. However, it is important that we start to move reproduction literature forward by seriously examining race, especially when it is about whiteness. The Birth Control Movement, the Women's Health Movement, and the Women's Rights Movements all have been called out for furthering the rights of white women alone, drawing attention to White Feminism: forms of feminism that focus on struggles of primarily white women. Yet, given the history of gynecology and reproduction, it is critical that scholars see whiteness as racial. Rather than accepting race as a limitation, colorblind eugenics centers whiteness as racial in the sites of reproduction.

Implications and Broader Significance

Race and gender are embedded in reproduction and fertility health, as poor women of color, immigrant, and enslaved Black women have been forced, coerced, and compelled into sterilization and experimentation that have led foundations of today's birth control and gynecological knowledge. It is critical to situate our current state of the fertility health industry and reproduction within this historical landscape. Increasing access to healthcare is a great thing... a wonderful thing. But we have to keep asking ourselves: who is gaining access? Explicitly naming systems of power, which so often go unnamed through scripts of "normalcy," reveals the insidious presence of health disparities. While an increase in access to and awareness of health is beneficial, we have to ask the question... which populations are benefitting? Who is being told: "Don't take negative for an answer?" Through my work, I reveal that it is white women, thus promoting the offspring of white women.

The consistent image promoted by companies throughout fertility health online is that of colorblind eugenics: though actors are not explicitly addressing race, by avoiding the topic, they are still perpetuating the idea that white women are the main group of individuals who should to enhance their fertility health and chances at conception. This leads to the ethical issue of eugenics in promoting this new, responsibilized version of health solely to white women. The majority of consumers in this culture are white, female, and middle class or above. The use of space and imagery by the fertility health industry is a structural element in the maintenance and construction of this culture as white, female, middle-class culture.

My findings show fertility health culture is created and maintained by companies through a process of whitewashing and marketing, in which everyday practices and decisions seek to deny racial politics and reinforce colorblind eugenics. It is important to start naming whiteness as racial, otherwise, people of color will continue to be the center of racialized problems and health disparities. Shifting the focus of the problem onto larger unnamed and unmarked social groups, especially by race, will be tantamount to tackling health disparities and access to fertility health.

As Dorothy Roberts (2017) has so articulately revealed through her work, the history of fertility health, especially birth control, cannot be separated from eugenics. Eugenics fueled the birth control movement as a national mission while giving the authority of reputable science. The American Birth Control League espoused an explicitly eugenic policy of promoting birth control among Black women, women of color, and immigrants, labeled as socially unfit, and promoting more children among the rich and white. On the other hand, positive eugenics promoted the reproduction of the genetically advantaged, defined as intelligent, healthy, and successful.

An explosion of U.S.- based sociological literature published within the past two decades elucidates how race matters in health. Part of this research centers on differential outcomes by

race. We see important work on social determinants of health and racism. Yet, research seldom considers how racialization reproduces racial hierarchies and whiteness within reproductive health, organizations, and products. This is an important omission because without an emphasis on whiteness, one can assume that reproduction and science and technology products are race neutral.

The policy implications of my work highlight the importance of tackling the unmarked groups of men and whiteness in reproduction. The history of reproduction has profited off of people of color, yet the social movement of women's health and birth control has centered white women. Today, through the refusal of acknowledging race, my work shows how fertility heath is still centering white women. However, men and women of color belong at the center of fertility health as well. In fact, our knowledge of men and their reproductive bodies needs to be increased, with science and technology taking men's reproductive experiences seriously. Reproduction and fertility health must explicitly and intentionally center women of color and men in order for health access to increase and health disparities to decrease.

This work also contributes to conversations in bioethics and reproductive ethics. Reproductive ethics brings a moral perspective to reproductive technologies and human reproduction. Especially with assisted reproductive technologies, bioethics examines controversial issues and questions the roles, rights, and responsibilities of parents, patients, and medical workers. This concept of colorblind eugenics is directly in line with important questions that bioethicists grapple with, giving the vocabulary and critical lens to examine the ethical, legal, and social implications of fertility health companies' messaging.

In sum, my research contributes to knowledge on gender, critical race studies, and medical sociology by examining fertility related interventions in relation to the unmarked groups

of white people and men. By exploring the fertility health industry as a burgeoning field in medicine and marketing, we learn how gender, race, and institutional failures intertwine to define what is normative and to shape challenges of accessibility, which has social policy and academic implications for future research.

Limitations

This dissertation focuses on the intellectual, material, and social problem of how we deal with a new landscape of fertility health that is populated with new, technological possibilities. In particular, I focus on how women and men interact fertility-based technologies, as well as with the companies that produce these devices and the professional experts they employ. Yet, one of my main contributions of highlighting how men are viewed in reproduction reifies the gender binary. Men are often left out of the equation of reproduction, but trans and queer folk are often intentionally erased from this equation. Trans and queer individuals are also a part of reproductive equations, with their own experiences and needs as well. While Fertility Today intentionally sought to be inclusive to all people of reproductive age, fertility health companies focused on one gender. While society culturally and normatively defines reproduction as a "woman's issue" this work aimed to critically examine this imbalance. At the same time, it is important to acknowledge and name that this is a narrow understanding of individuals and reproduction.

Another area of representation that I did not include in this work is a deeper understanding of company employees. While I interviewed an employee of each company, I was not wholly interested in what the company employees themselves understood. Rather, I was interested in what messaging fertility health companies generally spread. In-depth interviews are

wonderful sources of data, however, for my study I was more interested in the ethnographic interactions between consumers and the large-scale messaging of these fertility health companies. Similarly, I did conduct any interviews with consumers. For this project, I wanted to see how consumers were interacting with each other. A study that examines closely employees own understandings of societal messaging, fertility health, and their work would be important in examining the ethical, legal, and social implications of colorblind eugenics.

The Future of Femtech

My dissertation explored one corner of the emergence of a much larger, global female technology, or "femtech," market – digital products to manage and monitor women's health. My work focused on the analysis of technological products. However, there is much more about this market that needs to be understood. Femtech is predicted to reach revenue of $3 billion by 2030, and applications and devices for tracking fertility comprise a huge portion of this boom. Most femtech funding goes towards pregnancy, motherhood, and fertility technologies, leaving many other areas of women's health underserved. Some of these include maternal mortality among Black mothers, inclusive care for trans and queer communities, and sexual education.

Research has begun to investigate the medical efficacy and, to some extent, the cultural messages femtech apps employ. Yet, the clear connection to the long history of racial formation and policing through reproductive coercion, sterilization, and slavery has yet to be adequately scrutinized. Surveillance of blackness continues throughout US society, including through technology and the "New Jim Code" (Benjamin 2020): the manifestation of discriminatory design through which racist assumptions are built into new systems. Although technological development is treated as neutral, digital tools are not exempt from the fact that humans are the

ones producing them, making way for human biases. While the increased access to fertility health is important, the privatization and commodification through femtech continues to exclude groups of women. More work needs to be done on how the technology used in femtech devices and their apps may, too, reproduce racialized and gendered logics that may exacerbate health inequalities by race. We may also need to consider the ways in which users turn to self-monitoring their fertility as a form of hyper-medicalization, surveillance, and/or resistance; and whether this technological development exacerbates or narrows health inequalities by race.

Final Thoughts

Today, we live in a digitally literate society. Technology has become intertwined with our everyday life through our smart phones, our smart watches, our Zoom calls, and even with our health. Especially with the rise of the global covid-19 pandemic, we have seen how health now interfaces with technology through telehealth visits. In many cases, this intersection of health and technology has increased options of interfacing with healthcare, making health more accessible. We have yet to see how the pandemic has exactly increased or decreased access to healthcare in the grand scheme of things, but through the lens of the fertility health industry, I show how technology has and is changing the atmosphere of how individuals interact with each other, health products, their partners, and healthcare providers. My dissertation documents contemporary technologies geared towards conception and the fertility health industry, to show how norms around gender in conjunction with race and racism contribute to inequalities in health and medical care.

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