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In Whose Hands: The Pregnancy Test in American Life

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ABSTRACT

In Whose Hands: The Pregnancy Test in American Life

Joan Helen Robinson

Forty years ago, when an American woman wanted to know if she was pregnant, she made an appointment with a medical professional who would conduct a pregnancy test and tell her the result. Propelled by the medical establishment's control, surveillance, and neglect of women's health, the women's health movement of the 1970s sought to put women's health "into their own hands." Encouraged in part by the rhetoric of the women's health movement, pregnancy tests became available for purchase over-the-counter, without a prescription, and outside of the control of the medical establishment.

This dissertation examines this passage of the pregnancy test from the hands of medical professionals to the hands of lay people and asks, has the pregnancy test really delivered on its promise to give women information, choice, and control?

We think of women's reproductive health tools in the hands of doctors as oppressive and in the hands of women as liberating; the central argument of this dissertation is that this view is naïve. Putting the informational power about women's bodies into a mobile diagnostic technology did not change the nature of the beast. Through this examination of the pregnancy test in American life, we can trace the flow of reproductive power through various people, places, and things to better understand the character of women's subordination.

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Finishing a dissertation about women's bodies in 2017 was an enormous test of spirit. Rarely a day went by in which women's personal horrors were not discussed in great detail in the news and in private circles, making this research feel more urgent and more important than ever, but also frequently enraging. As Vanessa Lutz (Reese Witherspoon) said in *Freeway* (1996), "Mister, I'm a person!" A man who bragged about sexually assaulting women was elected to the highest office in our country. Thousands of women came forward with stories of sexual harassment in their professional lives. Tarana Burke said #metoo, and a #metoo tsunami bowled us over both publicly and privately. Rachael Denhollander and hundreds of remarkable women of U.S.A. Gymnastics testified against their team doctor, an organizational failure of the highest degree and a feminist medical sociologist's worst nightmare come true. Margaret Atwood and everyone involved in the television adaptation of her book, *The Handmaid's Tale*, told the story of a dystopia in which environmental degradation led to women becoming reproductive slaves. Now, there is a conversation just beginning that includes fictional "Cat Person" and pseudonymous "Grace" about hetero women's less-than-equal sex lives. There was no intellectual break for me this year. It was complete and relentless immersion into the topic of women's sexual and reproductive inequality. Nevertheless, she persisted. She being all of us.

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For women and girls

Introduction

"Don't attend to what is loudest, the fight, but shift your attention a little, widen it, and try to see what all this noise is a part of." Annemarie Mol (2002:144)

"The machine is us, our processes, an aspect of our embodiment." Donna Haraway (1990 [1985]:180)

The story of Beth

Beth's husband Drew was deploying in one month as a U.S. military officer to Anbar Province, Afghanistan, in the fight against the Taliban. Beth, 26, had been on birth control for years and hated it, and she'd never been pregnant before, so she thought it would be safe to go off of birth control for that one month before Drew deployed for six months.

But things had not gone as planned, and Beth missed her period. The thought of a possible pregnancy made her so nervous, and she drove quickly to the convenience store to purchase a home pregnancy test. Her husband's job on base prevented him from getting all but the most emergency phone calls, so she called her older sister on the drive to the store. "What am I going to do if I am pregnant? We didn't plan to have a baby now. Drew is going to be in Afghanistan for six months, what will I do all by myself?" In a faraway state, her sister tried to calm her, "It'll be fine. He'd be back before your due date. Maybe Mom can even come and help you." Selfishly, Beth's sister was secretly excited to be an aunt. They hung up the phone, and Beth promised to call back when she had purchased the test, taken it, and received the results.

Beth nervously read the instructions by herself in her hallway bathroom. Urinate on the stick at an angle with the first morning's urine. It was the afternoon -- would it still work? Place the stick on a level counter and wait two minutes to read the results, no more and no less. She

sat there on the toilet fiddling with the stick and her mind raced with all possible fates -- would she be a pregnant woman with a husband in a dangerous war zone? Would she be alone for all of her sonograms? How could she reach Drew if something bad happened? What if he came home disabled from an IED, with a TBI, lost limbs, or blind? How could she care for him and a child? What if he didn't come home at all?

She placed the stick on the bathroom counter, and immediately, a bright pink plus sign showed up. She burst into tears, overwhelmed with emotion. She grabbed the pregnancy test and rushed to her car to drive to base to deliver the news to Drew, and on the drive to base she called back her sister, who had been waiting for what felt like an eternity.

"I'm pregnant!" she wailed into the phone, "I can't believe it! I'm driving to base now to tell Drew, I just can't believe it!"

Her sister replied in the calmest tone she could muster, "If you want to have this baby, we are all here for you. If you don't, I'm here for you too. Is that an option?"

Beth's weeping stopped abruptly. "Abortion?" Beth's voice was deadpan, "No way. Drew would not be ok with that -- definitely not an option."

"What do you think he's going to say?"

"He's going to be soooo excited. You know Drew. This is why he has the job he does -- nothing scares him. He's going to be so so excited."

"Well then this is great! I can't wait to be an aunt! Mom is going to be so excited, this is wonderful news, Beth!"

Beth's voice began quavering again, "We just didn't plan it this way, that's why I'm upset. It's like the worst possible time to be pregnant, with Drew away and with me so far away from all of you guys."

We can understand Beth's concern about being pregnant in the absence of her husband and her potential fate as a caregiver of both a baby and a disabled veteran. Her personal and professional choices to that point in her life had seemed in her control. An excellent university student, she married her college sweetheart and sought to build a professional life while being stationed at military bases in a variety of states. Somehow, to that point, it had mostly gone as planned.

Every day, women across America have experiences like Beth's -- they think they might be pregnant, and they take a home pregnancy test. Unlike Beth, many women who find out they are pregnant do not have a supportive partner -- maybe their partner is their high school boyfriend, their college hookup, or their partner of thirty years who does not want any more children. Many women do not have good maternity coverage either through their parents, through their university clinic, or through their own or their spouse's work. Many do not have family and friends that can care for them physically or emotionally. Nevertheless, though women's circumstances differ widely, most American women who suspect a possible pregnancy take a home pregnancy test.

If you are a woman who has experienced this yourself, the details of Beth's story might be new, but the general storyline comes as no surprise. The possibility of pregnancy lingers in the mind of most sexually active heterosexual women, and many women feel their lives could turn on a dime. Even in the case of women actively trying to conceive, the possibility of pregnancy and the use of home pregnancy tests represents a turning point in what could be the fulfillment of their dreams of having a family.

The Story of Michelle

Michelle, 32, and her husband Joe had been talking about the right time to have children ever since they got married. Michelle's corporate job carried a demanding schedule, and she looked into exactly how much time she could get off of work after childbirth and the amount of leave she could get to care for a newborn. They started trying, which meant, she went off of birth control and they had sex more frequently between her periods. After only one month, her period was late, so she went to the store and bought a home pregnancy test. On the front of the box it said the test was 99% accurate. The instructions said that one line means not pregnant, and two lines means pregnant.

After she peed on the test, she set it on the bathroom sink and called Joe in to see. They waited for two minutes, and after the time elapsed, the test showed two lines, one dark and one very faint. They cheered -- pregnant! She immediately called her parents and her sister to tell them the great news, and Joe called his parents. Joe's parents immediately told several members of the family informing them that Michelle and Joe had great news to share -- Michelle was pregnant! Michelle called her OB/GYN to schedule her first prenatal appointment in six weeks.

That night, Michelle and Joe had dinner plans with their best friends. When they arrived, their friends surprised them with an announcement, "we're having a baby!" so Michelle and Joe shared their news about Michelle's pregnancy too. The two couples had a celebratory dinner for the future events that they would all share together. Births and birthdays, playdates and growing up -- their children would share life's important events together, just like they had.

Two days later, Michelle woke up with terrible pains that felt like terrible period cramps. She went to the bathroom and noticed blood coming out of her vagina. The pain continued to get

worse, and she sat on the toilet as blood continued to come out of her. "Joe!" she called out from the bathroom, "something's wrong!" Joe jumped from bed and rushed to the bathroom.

"I'm bleeding! Get my phone, we need to call the doctor." It was like the worst period pain she'd ever felt in her life.

Still hunched over on the toilet, she got her OB/GYN on the phone.

"I'm bleeding a lot, and I have terrible cramps."

The doctor explained, "You're having a miscarriage."

"But the test said 99% accurate. . ." Michelle pleaded.

The doctor explained that the positive pregnancy test could have been from a blighted ovum or it could be tied to some other fertility issue. Regardless, if Michelle was pregnant before, she no longer was today.

As she hung up the phone, still sitting on the toilet, tears welled up in her eyes and she said to Joe, "I'm having a miscarriage." Joe reached down and they held each other and cried. Michelle realized that if she hadn't taken the pregnancy test yesterday, she would have just thought it was her period and not a miscarriage.

The rest of the day Michelle laid on the sofa as the couple called their family and friends to tell them that Michelle had a miscarriage. Their best friends, who they had celebrated with the night before, were the hardest to tell. Michelle wasn't pregnant, but her friend still was. Michelle knew logically that it wasn't her fault, but she did feel as if something was wrong with her body.

Even though Michelle was hoping for a different result on the test than Beth was, the women both went through what sociologists call a status passage (Glaser and Strauss 1965),

from being not pregnant to pregnant, and they felt as though their fate was something out of their control.

If you haven't experienced this yourself, you might be surprised by the level of anxiety women feel, regardless of whether they are hoping to be pregnant, like Michelle, or whether they are hoping to *not* be pregnant, like Beth. Although Michelle's and Beth's situations were agonizing for them and for their families, they were both far less complicated than many other women's situations.

You might also wonder about the level of trust that women place in an over-the-counter medical device that they administer on themselves. Women like Michelle, a successful business executive, is not crazy to believe that a test that claims to be "99% accurate" would not deliver the type of information that she needed. You might also be surprised about the level of responsibility women like Beth and Michelle feel for the monitoring and control of their bodies. Due to the social pressures of responsible mothering, women feel responsible to their fetus, to their family, and to society.

Nearly fifty years after the rise of population control politics, the women's self-help movement, and *Roe v. Wade*, these 20th century legacies are still being felt by women like Beth and Michelle. These women's stories were just two of the thousands I heard or read in the course of this research, everywhere from a major midtown ad firm to a stereotypical college frat house. Pregnancy and pregnancy testing is well-woven into the fabric of American life to the point that those of us who don't do it probably never even noticed. I certainly never noticed before I took one.

Though IVF and other assistive reproductive technologies receive more attention as of late, the pregnancy test presents a different type of research opportunity because it is used by or

on, as far as I can tell, almost all groups of women and even girls. As you will come to understand from this dissertation, even women who have zero chance of being pregnant are sometimes tested without their knowledge or against their wishes.

When I started this research, I was warned, "Whatever you do, don't talk to patients. It'll be too hard. Just talk to doctors." As a feminist, this approach is insufficient and would produce misrepresentative findings. Everyone I tell about my research tells me their story of pregnancy testing, well before I can get a pen out or a tape going. Women want to talk about it -- how much this matters is simply out of sight.

My question became, how do I tell the story of a device and use it as entrée into the most intimate details of people's lives? The pregnancy test, it turns out, functions like a prism, revealing a spectrum of reproductive experiences that were there all along, hidden in the white light of ordinary human life.

Overview

Forty years ago, when an American woman wanted to know if she was pregnant, she made an appointment with a medical professional who would conduct a pregnancy test and deliver the news. Propelled by the medical establishment's control, surveillance, and neglect of women's health, the women's health movement of the 1970s sought to put women's health "into their own hands."

Though this dissertation is about the use of a medical device and its position in our world, the relationship of the pregnancy test to the unique condition of pregnancy gives it leverage on hefty questions about surveillance, information, and power that have been at the center of social theory since Foucault. This research explores how the status of pregnancy, and the

determination of that status, places women in a state of surveillance and contributes to their subordinate position to men.

We think of women's reproductive health tools in the hands of doctors as oppressive and in the hands of women as liberating; the central argument of this research is that this view is naïve. Women's subordination is not so simple as forced oppression, and power does not flow unidirectionally. Putting the informational power of women's subordination into a mobile diagnostic technology and putting it into the hands of women does not change the nature of the beast. So the question addressed here is not how to give more power to women, but rather to trace the flow of reproductive power through various people, places, and things to better understand the character of women's subordination.

Pregnancy tests are, by far, the most widely distributed over-the-counter medical test, usable by potentially half of the population multiple times throughout their lives. They can be found at nearly every corner drug store and gas station, online and in bulk, and even at the dollar store. Their boxes promise in bright pinks and purples, "Be the first to know!" and "Over 99% accurate!" Women from their teenage years through menopause who have had contact with sperm can go to the drug store and take a pregnancy test instead of going to the doctor to find out whether they are pregnant. When I asked women whether they'd take a home pregnancy test or go to a doctor, nearly every woman I have spoken with about this topic formally and informally over the last six years expressed preference for a home pregnancy test. On its face, it seems like a boon to women's health.

This research examines the passage of the pregnancy test from the hands of medical professional to the hands of lay people and it asks, has the pregnancy test really delivered on its promise to give women information, choice, and control? I evaluate this question from a variety

of perspectives -- historical and contemporary, medical and layperson, and individual and institutional. This research shows that it is a fiction that a new technology can so easily transfer power from one group to another. Technologies, I argue, shift power relations by altering networks of information, displacing less powerful human actors while creating efficiencies for more powerful ones.

Pregnancy is unique -- a condition unlike any other medical or physical condition. It connects us with our ancestors and descendants, our partners, our communities, and our countries. Many of these characteristics could be said of DNA, but pregnancy, unlike DNA, occurs in only one part of the human population: people with a uterus who usually identify as "women."[1] The ability to grow a family with children relies on a woman's body, even if she is a surrogate or a birth mother for another family. The ability to have a vibrant economy requires creating new producers and consumers, and the ability to have a thriving cultural community relies on teaching our values to children. The necessity of having a population that increases at just the right rate -- not too quickly and not too slowly -- is maintained through reliance on and governance of women's reproductive bodies that produce one hundred percent of the world's population. Because of pregnancy's unique position in human existence, pregnancy testing presents a unique window into our families, our organizations, and our world. A comprehensive

[1] These people typically identify as women, but also can identify as men or other genders. While discussing "women" as a named class, I am very cognizant of the multitudes of people that do not fall into my ideal-typical category. Most obviously, there are many women who are unable or choose not to reproduce or have sex with men, so testing for pregnancy has never been a notable part of their life. These women, as I explain in Chapter 4, are also subjected to many of the same testing regimes, whether or not they are aware of it. Moreover, there are some transmen and gender-nonconforming people who have used home pregnancy tests to find out whether they were pregnant or not. Transmen, who might fear or welcome pregnancy, would not only encounter subjection based on their possession of a uterus like cisgender women, but would also encounter bias because their gender identity and their potentially pregnant bodies do not conform to normative ideas about sex, gender, or pregnancy. Despite my own postmodernist qualms with the category "women," a term often used to support the most naturalist and essentialist arguments about us, I choose to employ the word to represent the subjection of a class of people whose bodies indeed do the vast majority of the unpaid labor of reproducing our species.

understanding of the role that pregnancy plays in contemporary life is crucial to women's lives, health, and to feminist ambitions of women's equality.

Pregnancy testing can teach us different lessons about women's place in American society than popular comparative topics like birth or breastfeeding, because it crosscuts the vast majority of women overall. It isn't just moms that are being pregnancy tested -- it's all of us. Indeed, if you are a woman between the ages of 15 and 60 and have had medical appointments in America, you've most likely been given a pregnancy test, even if you weren't aware of it, and regardless of whether you are a lesbian, a virgin, or just did not want the test. This research explains how women's bodies are under constant pregnancy surveillance and why we should care.

Understandably, this study is not directly comparative to another device, because pregnancy is unique among human conditions in many social and biological ways.[2] Despite its uniqueness among conditions, this study is able to inform the changing landscape of medical care. Today's patients check their health data on their Apple Watch, mail their own medical tests to a lab, and search WebMD with their symptoms, whereas previously they had to have an appointment with a doctor. These structural changes have happened due to the changing nature of the medical economy and increasing access by lay people to the information and tools formerly available to doctors. The pregnancy test is at the forefront of a massive amount of care work being transitioned from hospital to home, including very skilled medical work. This book explains what happened -- and what did not happen -- when one device went home and "into their own hands," and which may be a bellwether for coming changes in the care economy.

[2] In the course of this research, a handful of well-meaning scholars suggested that I do a comparative study with a similar test used on men, of which they could offer no examples, of course. The depth of denial about women's position in the world is astounding. As Shulamith Firestone put it, "[many people] give up in despair: if that's how deep it goes they don't want to know" (Firestone 1970: 4).

Chapter Outline

The weight and oppressive nature of pregnancy surveillance is borne almost entirely by women's bodies, and yet, pregnancy testing is inherently social and experienced from a variety of perspectives. This theoretical argument also functions as the dissertation's primary narrative trope. Each chapter will deal with different perspectives on pregnancy testing -- invention (Chapter 1), women (Chapter 2), partners (Chapter 3), medical providers (Chapter 4), and surveillance (Chapter 5) -- but each will also be discussed in relation to the material locus of pregnancy testing, women's bodies.

Chapter 1: From Hospital to Home

Chapter 1 is an unmodified version of "Bringing the Pregnancy Test Home from the Hospital," the lead article in *Social Studies of Science*, October 2016. Using historical qualitative methods of archival research and historical interviews, this chapter details how the introduction of an ordinary technology can solve one problem but simultaneously introduce new and sometimes unforeseen challenges for individuals, organizations, and the regulatory system. Additionally, the chapter introduces the murky relationship between feminist narratives and corporate interests. In the case of home pregnancy tests, I find that pharmaceutical interests co-opted feminist self-help language as a marketing tool.

Chapter 2: Am I pregnant?

Contrary to popular narratives about the pregnancy test put forth by pharmaceutical companies, television shows, and women themselves, I find that all women, even women who receive the result they want, can experience significant anxiety and frustration with pregnancy tests, and sometimes even worse. Through qualitative interviews, over 300 narratives of pregnancy test usage throughout the life course were collected and analyzed, revealing that

women's use of the test varies with context and pregnancy intentions, and it is not wholly positive. Women's own use of pregnancy tests is well-known. Women at all stages of life use pregnancy tests with anxiety, hopes, and dreams for their future, and this constitutes one part of today's "body projects" (Brumberg 1997). The analysis is divided into three parts which are roughly equivalent to three groups of users: teenagers, adults hoping for a negative, and adults hoping for a positive.

Chapter 3: Is she pregnant?

Not just women, but partners and others factor in the "reproductive equation" (Inhorn 2009, 3). Feminists have long fought for more partner involvement with parenting and more support through pregnancy, meanwhile, feminists have also fought for women's autonomy over their bodies and agency in their choices. The contact zone between these two competing feminist concerns is pregnancy. This dilemma reveals the limits of the choice paradigm in explaining the relational nature of the decisions people make. Through interviews with women's partners, I find that although women often use pregnancy tests alone, frequently there are other people who purchase the tests, are present when the tests are taken, and celebrate or lament the results. In particular, I focus on the sexual partner's complex and often ambiguous role in pregnancy -- a pregnancy which is mediated exclusively through a woman's body. From this perspective, women are positioned as gatekeepers in the reproductive equation. As in Chapter 2, I analyze different groups of partners, although unlike women, who fall into three groups, partners largely fall into two groups: hoping for a negative ("pregnancy scares") and hoping for a positive. In both sections, I discuss when and how partners are given knowledge about the possible pregnancy and how they are often kept in the dark.

Chapter 4: Is the pregnancy real?

Even after women receive the results of a home pregnancy test, they often go immediately to medical professionals for a test that is often identical to the one they just took at home. Through interviews with women and their doctors, I find that whether the pregnancy is deemed to be "real" depends on who is declaring it to be real. This startling finding shows the persistent power and position of doctors in the medical-legal network of pregnancy determination. Further, I find that whether a pregnancy is believed to be "real" also depends on what a woman wants the result to be. For instance, women who want to receive a negative result on a test and do receive a negative always believe the result on the test -- the same does not hold true for other women. Detailing the four groups of women (whether they want a pregnancy or not (Y/N) and whether the test result is positive or negative (+/-)), I trace the subdivisions of the current medical network that have developed over the last 40 years, including OB/GYNs (Y/+), fertility doctors (Y/-), and abortion providers (N/+). Next, I examine the logics of choice, care, and liability that structure the patient-provider relationship in today's pregnancy testing network. This chapter, like the ones before, further calls into question the narrative that women have gained power from pregnancy testing at home.

Chapter 5: She'd better not be pregnant

When the pregnancy test left the doctor's office and became available to women over the counter, women necessarily gained access to the technology. In my research into pregnancy tests, I came across a surprising and troubling pattern -- many times women are not the one in control of the test. Suddenly no longer protected by the norms of the doctor-patient relationship (however troubled that relationship may have been), the pregnancy test was free to travel out into our unequal world. Women in our world, of course, have widely varying degrees of control over their own lives and bodies, and pregnancies in women's bodies can carry significant

consequences for other individuals, for organizations, and for the state. When it left the doctor's office, the pregnancy test was thought to be "in [women's] own hands," but often, it is not. This troubling chapter details stories of state surveillance of women's bodies, organizational abuses of power, and sexual abuse, all conducted with the assistance of the pregnancy test. Women in the most marginal positions, e.g., minors, women in prisons, and women in state population regimes, are the most subject to forced pregnancy testing surveillance.

Conclusion

In the conclusion, I review the prior five chapters in concert, explaining what we can learn about the nature of women's power from following this technology through various hands and with various lenses.

Underpinned by liberal feminist conceptions about information, choice, and control, women typically embrace this surveillance project with complicity and even enthusiasm. Interestingly, with the development, dissemination, and normalization of pregnancy testing in American life, women have been recruited to be part of the surveillance network that monitors their own bodies.

Chapter 1: Bringing the pregnancy test home from the hospital

This dissertation chapter was published in Social Studies of Science (2016), a peer-reviewed Canadian publication, and it is included here unmodified.

Is the pregnancy test a drug? Does it pose a serious risk to the public? These questions were seriously debated in the 1970s by US doctors, women's health advocates, and lawmakers. Moreover, in answering these questions, judges and regulators had to address several others. Is pregnancy a disease? Who has the authority to determine pregnancy? Should it be determined only by a medical professional? Today, with nearly forty years of widespread home pregnancy test usage behind us, these questions sound absurd. How did we get from there to here? To understand this controversy, this paper examines how technological innovation and regulatory innovation interacted to bring the pregnancy test home.

Scholars in Science and Technology Studies (STS) have long been aware that laws, like physical technologies, must go through stabilization processes in order to work (Jasanoff, 1995; see also Abraham and Reed, 2002; Latour, 2010). Additionally, regulations have been examined as a form of technological scripts, co-constructed and coproduced by norms of science and technology (Abraham and Davis, 2009; Akrich, 1992; Jasanoff, 2004). Studies that take this perspective have the ability to situate micro-level experiences and meso-level processes within macro-level institutions, expanding our understanding of regulatory science and legal processes more broadly. Yet STS scholars have often framed law as a control on organizational and innovative behavior rather than examining it in its own right.

The introduction of the home pregnancy test to the American public created a controversy well placed to explore the relationship between advancing technologies and legal authority. How can the law, the standard bearer of the normative order, keep up with rapidly

advancing technologies and maintain both its jurisdiction and its legitimacy? The case of the home pregnancy test shows that, first, when a technology exceeds the prior regulatory schema, there is uncertainty on both the technological and the legal sides. Then, regulators may try to broaden the meaning of the existing law to increase and clarify the regulatory jurisdiction. If the meaning of the law cannot be read to include the new technology, and the technology falls outside of the regulatory jurisdiction, there is a period of 'technological free-for-all'. Finally, regulators recalibrate or rewrite the rules to stabilize the relationship between the regulations and the new technologies. These stages of juris-technical accordance enable both technology to continue to advance and law to maintain its legitimacy.

The term 'juris-technical' concerns the assemblage of legal and technological processes and products that interact to maintain legal legitimacy while allowing for technological change. With many new technologies, there are perceived and real risks of threat to the public, and regulation is intended to reduce those risks and perceptions of risk. Today we are repeatedly faced with the question – for example, in medicine, finance and personal privacy – can law keep pace with technology? Yet our system of governance maintains its legitimacy, whether or not it is keeping up with technological advancements. How can we better understand this relationship? The juris-technical is the relationship between advanced technologies and systems of rational-legal authority. The term juris-technical accordance acknowledges that the juris-technical relationship is ongoing and never fully settled. This study examines key turning points in this process.

From 23andMe to the Apple Watch, new self-diagnostic and monitoring technologies are rapidly becoming mainstream. Self-monitoring and diagnostic tools are poised to become important not just in countries with strong health infrastructures, but also in many parts of the

world with unreliable utilities and sparse medical services. Understanding the process of settlement of such a common and nearly uncontested tool as the home pregnancy test reveals an interplay of women's health, law and medicine: co-producing forces (Jasanoff, 2004) in emerging technologies of monitoring and self-diagnosis.

This study uses a historical qualitative and co-productionist approach to examine the early years of the home pregnancy test in the United States. The aim of the idiom of coproduction 'is not to provide deterministic causal explanations of the ways in which science and technology influence society, or vice-versa', but rather is to provide an explanation of the world that integrates both '[s]cience and values, objectivity and subjectivity' (Jasanoff, 2004: 38). The data upon which this paper draws consist of various archival sources, as well as interviews with scientists, attorneys, regulators, and journalists who participated in the historical events I analyze. I collected all available documents related to home pregnancy tests from 1960 to 1980 in the PubMed medical database, ProQuest newspaper database, the Congressional record, and unrestricted files in the National Archives repository in College Park, Maryland. I reviewed contemporaneous women's health articles, books and pamphlets. I subsequently submitted Freedom of Information Act requests to the Food and Drug Administration (FDA), which ensured that I had the most information legally available, including several formerly unavailable files. After receiving and analyzing the FDA documents, I had follow-up conversations with historians and librarians at the FDA. I had telephone and email conversations with various scientists, attorneys, regulators and journalists who were involved in the development and regulatory review of the home pregnancy test. Meanwhile, I reviewed the relevant statutory law and caselaw on home pregnancy testing. The data were analyzed using a modified grounded theoretical approach in which data are collected, aggregated, and analyzed

simultaneously. Such an approach encourages collection of diverse sources and viewpoints to allow for methodological triangulation.

A fertile environment

To understand the introduction of the home pregnancy test and the process of juris-technical accordance that ensued, it is important to understand the history of the device and its contexts.

In early 1978, readers of several women's magazines in the US learned of a technology that was becoming widely available – the home pregnancy test (Layne, 2009; Leavitt, 2006). Along with the thermometer and the bathroom scale, the home pregnancy test has since become one of the most widely used technologies of self-diagnosis in American history. The home pregnancy test, however, was not yet in the American marketplace and was barely known. It was unregulated throughout much of the 1970s, though not without contest. Despite the fit in some rhetorical frameworks of the era, the test's ability to accord with both a changing regulatory framework and a changing relationship between a woman and her doctor would determine its place in American social life.

For most of the 20th century, delivering pregnancy news, or any reproductive news, was the exclusive domain of medical professionals. Dr Alan Guttmacher, perhaps the most well known family planning advocate of the late 20th century, wrote in 1964,

> One of a physician's happy tasks is to confirm a pregnancy for a man and wife who eagerly await good news. I have enjoyed making this announcement hundreds of times. But on other occasions I have had to announce the same news to women, and their husbands, who were afraid and shocked to hear it. I have not yet devised a formula for remaining aloof from unhappiness about an unwanted

> pregnancy, or a way to handle these pathetic situations with the grace I feel they deserve. (p. 106)

The 1960s and 1970s saw monumental shifts in the relationships of women's bodies to the state, but doctors, particularly obstetricians and gynecologists, remained critical actors. In Griswold v. Connecticut (1965), for instance, a married couple challenged a 19th-century Connecticut law prohibiting the use of contraceptives. The Supreme Court struck down the law, holding that it 'operates directly on an intimate relation of husband and wife and their physician's role in one aspect of that relation' (Griswold v. Connecticut, 1965), and thus the law violated the First Amendment's 'penumbra where privacy is protected from governmental intrusion'. While the government was banished from the marital bedroom under Griswold, the couple's doctor still had a permissible role. On one hand, the state's sexual moral authority was being challenged and redefined, but on the other, state objectives could still be exercised to some degree through doctors.

The medical profession increasingly lost social authority in the 1970s, due in part to the growing direct and social costs of health care. Women's health activists, who saw the medical profession as sexist and paternalistic, sought 'to … "demedicalize" critical life events, such as childbirth', and as such, some activists sought to take medicine 'into their own hands' (Starr, 1982: 391). The central tenets of the women's health movement included self-knowledge, individual choice, and individual responsibility (Morgen, 2002). Activists in the movement demanded greater control over their bodies, including knowledge, choices and alternatives to mainstream medical care. In a popular women's health movement booklet, Complaints and Disorders: The Sexual Politics of Sickness, Barbara Ehrenreich and Deirdre English (1973) wrote,

> The medical system is not just a service industry. It is a powerful instrument of social control … The medical system, more than any other institution of American society, reduces us to our biological category, stripped of our occupations, life styles, and individualities. (pp. 83, 85)

The self-help movement, as a smaller part of the broader women's liberation and women's health movements, focused on personal, micro-level control. 'Self help, which emphasized self-examination and self-knowledge, is an attempt to seize the technology without buying the ideology' (Ehrenreich and English, 1973: 84, italics in original). The home pregnancy test fit perfectly into the rhetorical paradigm that the women's health movement developed and promoted. Nevertheless, while the self-help movement flourished in the 1970s and diminished in the 1980s, home pregnancy tests were surprisingly not mentioned until the 1984 edition of the classic self-help text Our Bodies, Ourselves (Boston Women's Health Collective, 1976, 1979, 1984). Home pregnancy tests are not examined in a thorough contemporaneous ethnography of the movement (Ruzek, 1978). Thus, the home pregnancy test was never a central technology for the movement in the same way as were the Pill and menstrual extraction kits. Clinical pregnancy testing did, however, flourish in women's health clinics of the 1970s as one of the basic services offered to patients, along with birth control, abortion, and pregnancy counseling (Morgen, 2002). Meanwhile, 1973 marked the legalization of abortion in the first and second trimesters of pregnancy in the landmark case Roe v. Wade (1973). While states had less direct authority over women's reproductive choices, doctors necessarily became mediators between the state and women, both in the determination of gestational age as well as the providers of various services such as abortions and counseling. Roe had a tremendous impact on the way women understood their reproductive rights, and the case played a role in the way people 'organized intimate

relationships and made choices that define their views of themselves and their places in society' (Planned Parenthood v. Casey, 1992). Regardless of an individual woman's stance on abortion, all American women were well aware of the implications of Roe, and women and doctors arranged their roles and personal lives accordingly.

The changing legal framework of women's reproductive rights, the women's health movement, and the challenges to medical authority and cost of care all provided a legal and social framework in which to rhetorically and practically fit a do-it-yourself test for pregnancy. Though not directly advocated in any of these various contexts, the adoption of the home pregnancy test was facilitated by its compatibility with many of the social changes of the era.

Technological innovation and regulatory lag

How can the public be protected from potential risks posed by technologies that do not yet exist? Can rules be written to contain future technological risks without being overreaching and burdensome? Major and minor technological advances that are truly novel can fall outside of the imaginative scope of lawmakers.

Early 20th-century reproductive endocrinology research was a value-laden endeavor to find a root cause of sex differences between women and men. As Oudshoorn (1994) has shown, the development of female sex endocrinology was highly dependent on an asymmetrical organizational structure that made the female body, and not the male body, the central focus of hormone research and innovation. This century-old research has in its genealogy, among many other technologies, the Pill, Norplant, and in vitro fertilization. This lineage of reproductive endocrinology also produced the earliest reliable human pregnancy tests.

From 1928 through 1960, pregnancy testing required in vivo tests on a live animal. 'The only practical difficulty in the adoption of the test', it was noted of the rabbit test in 1929, 'is the

need of a suitable supply of test animals under the care of an expert' (Johnstone, 1929: 264). Using live animals was costly, cumbersome, and required the use of laboratories prepared to house and dissect the animals (Hunt, 1975). Immunoassays merely required antibodies to react with another substance. The first in vitro immunoassay for pregnancy was developed in 1960 by Leif Wide, Daniel Mishell, and Carl Gemzell in Uppsala, Sweden, who recognized that not only was the immunoassay more accurate, but it was far less tedious and expensive than the use of live animals (Mishell et al., 1963; Wide and Mishell, personal communications). The immunoassay developed by the Swedish and American researchers in Uppsala reported pregnancy or lack thereof with a hemagglutination test – an agglutination of red blood cells of a sheep in a simple test tube. Pregnancy testing moved from in vivo tests to in vitro tests very quickly and hemagglutination immunoassays to determine pregnancy quickly became the laboratory standard.

Because the tests required the addition of several chemicals to test tubes in a precise manner, however, the tests remained laboratory tests for most of the 1960s. Meg Crane, a graphic designer working on cosmetics for Organon in West Orange, NJ, saw the laboratory tests in 1967 and suggested to a company executive that women could do the tests themselves. The executive responded that it wouldn't work because Organon would 'lose our doctor business', so she tinkered at home with office supplies to make the design work (Crane, personal communications, 2016). Enthusiasm from Organon's headquarters in the Netherlands allowed her project to go forward.

In 1971, Organon attorneys patented the design under Crane's name, and Organon bought the patent from her for US$1. By the end of the decade, hemagglutination home pregnancy tests were sold to women in Canada and Europe, but the tests was not available to women in the US

(Cohn, 1970). In January 1971, one hemagglutination test, Confidelle (Princeton Laboratories, NJ and Denver Laboratories, Canada, Ltd.), was available in Canadian pharmacies and may have made it to a small US market, but the evidence for this is unclear, and in any case its availability or impact was barely noticed by American medical and public health professionals (Field, 1971; Hunt, 1975). In August 1971, Faraday Laboratories of New Jersey announced to investors its new home pregnancy test, and by late 1971 it was selling 'Ova II' to American consumers under the tagline, 'When you want to be the first to know' (Hershey, 1971). Ova II, the first home pregnancy test to be available to US consumers, was a hemagglutination test tube test 'identical' to those that were used in laboratories (Shapiro et al., 1976), and it purported to be reasonably accurate in the determination of pregnancy even when used by laypeople (Hunt, 1975). In part because of the device's novelty, it was not immediately clear to manufacturers or regulators what kind of thing a pregnancy test was. And before answering the question of whether the device posed a risk to the public, it was necessary to answer a still more basic question: Is pregnancy a disease? This question proved central to the controversy that ensued. Faraday's sale of Ova II to the public challenged the FDA's right to regulate a wide variety of in vitro home diagnostics. This challenge of innovation to existing regulation marks the first stage in the process of juris-technical accordance.

The sale of the home pregnancy test to the public brought to light larger debates about the US government's ability to regulate risk. The Food, Drug, and Cosmetic Act of 1938 both created the FDA and gave it a tremendous and unique power. The FDA's power lies in its ability to regulate, or subject to veto, a wide variety of products before they enter the market. Carpenter (2010) shows that through this premarket, or ex ante power, the FDA is able to wield tremendous regulatory power over many aspects of social life. This ex ante power is freely exercised and

typically unchallenged, despite the agency's relatively meager budget and location in a country notoriously distrustful of government.

From its creation, the FDA could regulate or veto what were classified as 'drugs' before they were marketed or sold to the public. The agency could only regulate nondrug products after they had been sold to consumers and had proven extremely harmful. Thus, industrial manufacturers of medical devices could often avoid the cost of FDA scrutiny, and over the next twenty-five years, a wide variety of medical products entered the marketplace that the FDA did not have the power to regulate before they entered the market.

By the late 1960s, medical professionals and the public at large were increasingly concerned with the growing field of medical devices. Many argued that new legislation would be necessary to combat the risks associated with devices, just as drugs had been regulated before them. In 1969, however, the Supreme Court seemed to say otherwise. In United States v. Bacto-Unidisk (1969), the Court held that a small disc that never touched the body, used by medical professionals to determine which antibiotic should be used to treat an individual's disease, to be a 'drug' and therefore subject to premarket regulation by the FDA. Through the decision to classify Bacto-Unidisk as a 'drug', the Supreme Court extended the FDA's jurisdiction over in vitro diagnostic devices.

The case was merely a temporary solution to the general lack of regulatory authority of the FDA over devices, and despite the holding in favor of the FDA, Bacto-Unidisk drew attention to the meager regulatory framework. In 1970, President Nixon called for greater regulation of devices, and through the Department of Health, Education, and Welfare formed the Cooper Committee to write recommendations to modify the FDA framework (Rados, 2006). Over the next several years, Congress and the President were deeply involved in Vietnam and

Watergate. In such circumstances, updating the federal government's regulations to include medical devices was not a priority. This regulatory lag had significant implications for American women in the years to come.

Is pregnancy a disease? Regulatory creep and the limits of FDA jurisdiction

Meanwhile, the FDA remained at work under the Bacto-Unidisk holding. A variety of medical devices nevertheless flooded the market, and the FDA did its best to keep up with postmarket regulation based upon a device's harm. The FDA attempted another tactic to buttress its weak jurisdiction over in vitro diagnostics. In August 1972, it proposed new labeling requirements to cover a wide array of diagnostic 'test kits' for use by both doctors and laypeople (Edwards, 1972; UPI, 1972). The FDA located the requirement under its authority to regulate drugs or devices that are used for the diagnosis or prevention of 'disease', but within the same paragraph of its proposed rules identified 'Products for use in the detection of pregnancy' (Edwards, 1972: 16613) with no apparent awareness of a difference between pregnancy and disease. Henry Simmons, the director of the FDA's Bureau of Drugs, stated 'This industry has been unregulated. With this step we will have taken over the regulation of the products in the medical care system' (UPI, 1972). Perhaps the public acquiescence to the agency's bold proposal gave it confidence to assume even greater authority. Just four months later, in December 1972, the FDA took the drastic measure of recalling Ova II, stating that the tests were 'inaccurate, unreliable, and prone to give false results' (Lyons, 1972). A spokesperson from Faraday Laboratories countered that the tests were 'accurate and reliable when used as directed', but agreed to recall the kits, though the spokesperson questioned the jurisdiction of the FDA to regulate the product premarket because it was not a drug (Baker et al., 1976; Lyons, 1972). Perhaps further preventing FDA action was that under the law at that time, the FDA could recall

(postmarket) 'harmful or ineffective' devices, which were defined as 'instruments, apparatus, and contrivances, intended for the diagnosis, cure, mitigation, treatment, or prevention of disease in man or affect the structure or any function of the body of man or other animals' (USC, 1972: 21 USC §321(h), emphasis added). It was particularly notable that the FDA recalled Ova II, because it had questionable regulatory power over such products and a limited budget with which to do so.

August 1974 marked both the resignation of President Nixon and, less notably, reputational strife at the FDA. Congressional hearings led by Senator Ted Kennedy found that the FDA had been 'less adversarial toward and more cooperative with drug manufacturers', in particular, by demoting and transferring medical officers who were less favorable to the pharmaceutical industry (Carpenter, 2010: 487). FDA Commissioner Alexander Schmidt, a Nixon appointee known for friendliness toward the pharmaceutical industry, became 'increasingly bound by decisions' of lower-level employees (Carpenter, 2010: 492).

In this period of general governmental upheaval, Faraday Laboratories decided not to comply with the FDA's recall, and the FDA sued Faraday in federal court in New Jersey. Fundamentally at issue in the decision, however, was not whether Ova II was safe and effective, but rather whether a home pregnancy test could be classified as a 'drug' under the meaning of the law at that time. The Court granted Faraday's motion for summary judgment on the basis that there were no issues of fact in dispute, merely issues of law. District Judge Vincent Biunno held:

> The condition of pregnancy, as such, is a normal physiological function of all mammals and cannot be considered a disease of itself. Pregnancy is an execution of an inherent bodily function and implies no ailment, illness, or disease. Both parties agree that this is so … A test for pregnancy, then, is not a test for the

> diagnosis of disease. It is no more than a test for news, which may be either good news or bad news depending on whether pregnancy is wanted or not … On the central question, then, the court is satisfied that there is no genuine issue of any material fact, and that Faraday is entitled to judgment as a matter of law. There is no dispute that FDA has the burden of persuasion. Taking each of the three definitions of a 'drug', as set out in 21 USC §321(g)(1), it is plain that the Ova II kit does not fall within any of them. (United States v. Article of Drug – OvaII, 1975).

FDA Commissioner Schmidt said of the decision,

> It is clear that this decision has far-ranging implications with respect to our ability to assure the safety and accuracy of about 100,000 products used to diagnose and treat a wide variety of medical conditions. (UPI, 1975)

In 1975, the FDA only had the ability to regulate that which could be defined as a 'drug', that which was 'intended for the diagnosis, cure, mitigation, treatment, or prevention of disease' (USC, 1972: 21 USC §321(h), emphasis added). In an attempt to stretch the meaning of the existing law to encompass this new technology, the FDA had argued that Ova II pregnancy tests were technologically analogous to the Bacto-Unidisk tests because they were in vitro and that they could detect disease.[3] By finding that pregnancy was not a 'disease' and therefore that Ova II was not a 'drug' (though Bacto-Unidisk was), Judge Biunno held that the FDA did not have the power to regulate these or any related devices. The FDA attempted to include home pregnancy tests and other in vitro diagnostics in what one might call a regulatory corona, but

[3] While Judge Biunno's decision rests on the distinction between pregnancy and disease, the FDA's position was more nuanced. In the author's 2014 interview with FDA attorney Arthur Levine, he recalled that, in both briefs and oral argument, the FDA argued that some forms of pregnancy are abnormal or diseased, and that the test's failure to distinguish between these and normal pregnancies was a public health concern within FDA jurisdiction.

Judge Biunno's holding was in line with both the congressional critiques of FDA leadership as well as the women's health movement, which argued pregnancy and childbirth were normal events and 'not a disease' (Starr, 1982: 391). Rather than leaving the science to the scientists and the regulations to the regulators, the judge in this case embraced a 'holistic conception of law' and rejected the notion of strict separatism between science and society (Jasanoff, 1995: 219). Moreover, by interpreting the plain meaning of the text, the judge's decision easily rested on and reinforced Weberian principles of pure legal authority, i.e., public legibility of the law and consistent application of the law.

Interestingly, when pregnancy tests were in the hands of medical professionals, there was never any question about their reliability or safety, but when the tests had the possibility of entering the hands of lay women, they were deemed by the FDA to be 'inaccurate', 'unreliable' and potentially even 'harmful'. Judge Biunno held, however, that pregnancy tests were merely tests for news. Like all medical devices – e.g., thermometers, weight scales, etc. – there is always a possibility of error with the device itself, and even if functioning correctly, they can be misused or misunderstood by medical and laypeople alike. It was not clear what harm could come to women if error rates were simply disclosed with the device. What is more clear is that an image of women using chemicals in test tubes in their own homes to determine their own pregnancy, jarred some social groups and social norms more than did other home health devices.

The FDA's attempted analogy between the new home pregnancy test and prior tests like Bacto-Unidisk failed. Though laws are often written in broad terms to allow for historical developments, some advances, particularly in technology, are unforeseen or unforeseeable. Interpretations of the law depend on which actors have power and how they choose to exert it, as well as on the legal philosophy of particular jurists. Judge Biunno determined that the prior law

could not be interpreted to encompass this new technology, marking another stage of juris-technical settlement. This decision provided legal certainty to pregnancy test manufacturers that they could market their product without the fear of regulatory reprisal.

Translating the technical to the public

The decision in US v. OvaII (1975), upheld by the Third Circuit Court of Appeals (1976),[4] brought more attention to home pregnancy tests than ever before, particularly because the FDA claimed the test's inaccuracy rate was very high. The publication and news coverage of OvaII translated the new juris-technical development to the public and defined what was at stake. Laypeople had a right to use pregnancy tests in their own home, without the presence of a medical professional, and the FDA did not have the authority to prevent them from doing so. Without these clearly and legally defined boundaries of individual rights and regulatory authority, the process of translation would have stagnated. Had the law been silent, industrial and financial interests would have faced uncertainty, and wider public understanding and acceptance would have stagnated. The legal decision in OvaII introduced the concept of a home pregnancy test to an American audience, effectively translating the juris-technical issues at stake to the public.

Tests like Ova II, which allegedly lacked reliability when used by laypeople, embodied all that there was to love and fear about home diagnostics. The decision provoked a variety of responses from those in the health and medical communities. There were relatively minor concerns that worried medical professionals, from the device's 'shipping and storage problems' to the 'relatively high literacy level' required to understand the instructions (Hunt, 1975: 122).

[4] Unfortunately, the Third Circuit Court of Appeals does not maintain paper case files for longer than twenty years. While pleadings, briefs, and other legal documents might provide more detail about the proceedings, the available data are the decision, publications about the decision, and interviews with individuals who are still alive.

From the perspective of the device's use, however, opinion was most divided on the issue of reliability (Hunt, 1975). A false positive could, professionals claimed, cause 'unnecessary psychological stress and expose her to the expense and potential risk of an unnecessary legal or illegal abortion procedure. A false negative … could delay the beginning of prenatal care or an early legal abortion' (Baker et al., 1976: 167). The concerns generally assume an uneducated and careless user, unable to understand accuracy rates, let alone how to manage chemical reactions in test tubes. Moreover, the user's 'psychological stress' was assumed to be greater when at home than when with a medical professional who was potentially a stranger. It is questionable whether such concerns would have been expressed in the same manner about men, at least in the 1970s.

Others viewed home pregnancy tests as a jurisdictional threat to their profession, just 'the tip of the iceberg' (Entwistle, 1976: 1108). There was a concern over lack of sufficient training to detect malfunctions and that a lack of understanding of the chemical reactions involved could impair results. One technologist wrote in the American Journal of Public Health,

> I am becoming increasingly worried by the escalating use of such kits by nontechnical staff such as nurses, receptionists, and clerical employees in health centers and in private practice, and especially, as in this case, by the patient herself. (Entwistle, 1976: 1108)

Explicitly, the technologist expressed concern that the reputation of 'the profession of medical laboratory technology will suffer unless legislation is introduced to limit the use of such potentially dangerous kits to those staff fully trained to use them' (Entwistle, 1976: 1108). The language is particularly telling. 'Nurses, receptionists, and clerical employees' were undoubtedly mostly women, as was, of course, 'the patient herself'. By invoking highly gendered professions

that were assumed to be less technologically savvy, the technologist used stereotypical tropes to denote a lack of competence.

But other medical professionals were more split, and some were even strongly in favor of the tests. Those in favor of the tests often expressed their support with language of knowledge, information, confidentiality, control, and choices – thus using the 'rights language' that was in widespread use by the women's health movement. One writer claimed that '[n]early all family planning physicians agree[d] that women have a basic right to information about their own fertility as simply and confidentially as possible, and of course, a do-it-yourself kit provides this' (Hunt, 1975: 121). Women could be 'the first to know' (Baker et al., 1976: 167) and could gain 'control over their bodies which is their right' (Oakley, 1976: 502). Women were called on to 'demand that these products become available over-the-counter so that we are not dependent on medical superstructures for confirmation of our own reproductive choices' (Oakley, 1976: 502). Those in favor of home pregnancy tests downplayed the importance of accuracy and technical problems by employing the 'rights' language of the reproductive health movement. On a practical level, they judged the tests 'convenient for the user' and 'less expensive than laboratory tests' (Hunt, 1975: 122). Earlier diagnosis could be possible, making possible both earlier prenatal care and earlier abortions (Baker et al., 1976).

Those medical professionals most in favor of the tests said that the issues facing the tests of reliability and complex instructions could be solved by the production of more accurate tests with easy to understand instructions (Stim, 1976a, 1976b). Dr Edward Stim, active in the debate at the time and strongly in favor of the development of the home pregnancy test, agreed that the tests should be 'scientifically tested by consumer volunteers in a medical setting before being "liberated" on the public', but worried that

> [t]here is more than enough repressive legislation as it is without being further burdened by another law which will prevent consumers of medical services from obtaining access to pregnancy diagnosis and early abortion. (Stim, 1976a: 1109)

Stim's editorials in the American Journal of Public Health echoed the consumer protectionist tone of the era (Stim, 1976a, 1976b). The editor of the journal agreed with Dr Stim,

> [a] falsely interpreted temperature or test for urine sugar might be even more dangerous than a falsely interpreted pregnancy test. Not everyone needs carpenters to hammer in their nails. (American Journal of Public Health [AJPH], 1976)

Ova II, and home pregnancy tests in general, threatened the professional boundaries of various medical professionals, particularly technicians (Gieryn, 1983). By the late 1970s, in addition to a doctor's office, women could receive a pregnancy diagnosis at little or no cost from one of many hundreds of labs and clinics run by technicians (Consumer Reports, 1978; Leavitt, 2006). The near extinction of those labs and clinics today is revealing. Due to their singular task in the pregnancy testing network, technicians were among those with the most to lose by the tests going home and into the hands of laypeople (Abbott, 1988). Though technicians had education and licensing to perform their tasks, they lacked the institutional backing of medical doctors, and thus their node could easily be replaced. To counteract their own profession's displacement, technicians sought to distinguish between those who held the necessary technical expertise to achieve accurate results and lay users who allegedly did not.

Classification of risk and reassertion of the FDA's ex ante power: The Medical Device Amendments of 1976

The 1970s were characterized by favorability toward additional regulation in an otherwise government-wary nation (Starr, 1982). Perceived risks of new consumer technologies, combined with statements that suggest the technology is a threat to social norms or morality, often precede calls for greater government intervention.

By the time of the OvaII ruling, there had been calls for medical device regulation for years, but it was not until 1976 that Congress enacted the recommendations of the Cooper Committee in what are known as the Medical Device Amendments (Rados, 2006). Deaths and injuries from several harmful devices (heart valves and intra-uterine devices, in particular) brought attention to the risks of unregulated devices, and Congress was ready to act. Women's health movement activists viewed the Medical Device Amendments (MDA) as long-overdue and much-needed regulatory protections (Ruzek, 1978). Perhaps the most important recommendation of the Cooper Committee was that the regulations should be specific enough to regulate a variety of devices in different ways.

In general, the law uses classification as a method to divide and conquer. The concept of division, in particular the separation of people and things into categories, each of which is governed by a particular set of powers and rules, is the fundamental basis of legal jurisdiction. 'Jurisdiction', in legal parlance, is the rough equivalent of 'ability' or 'power' – to have jurisdiction is to be able to function, and to be without jurisdiction is complete impotence. As Jasanoff (1995) elegantly states: 'The law is called upon to fix the leaky walls between worlds we construe as social and natural, to recreate normative order when previous understandings have been stretched to the fraying point' (p. 161).

The MDA divides medical devices into three categories: Class I – General Controls (low risk); Class II – Special Controls (moderate risk); and Class III – Premarket Approval (high risk). Class I products were intended to be all products that were not inherently very risky, so did not require more supervision than the controls already in the power of the FDA, such as recalls (if there was evidence that the product caused harm to individuals). Class II products were those products that required more supervision than was already in the power of the FDA, but did not rise to the level where they would always need approval from the FDA before they entered the market. Finally, Class III products were those that were judged to be most risky and deemed potential threats to life.

These three categories were applied to all products available on the market prior to the date of enactment of the law, May 28, 1976. Importantly, a product entering the market after that date would initially be placed in Class III, a very costly classification, unless the device maker could show that it was 'substantially equivalent'[5] to a predicate device (USC, 1976: 21 USC §360C(f)(1)). Manufacturers could save tremendous amounts of money if they could show that their devices met the substantial-equivalence test, through a process that has come to be known as 510(k) clearance.

The meaning of substantial equivalence, then, is the primary vehicle for avoiding the regulatory mechanisms that are imposed upon Class III devices. 'Substantial equivalence' is defined in the law as

(i) has the same technological characteristics as the predicate device, or

[5] (A) the device – (i) is within a type of device (I) which was introduced or delivered for introduction into interstate commerce for commercial distribution before such date and which is to be classified pursuant to subsection (b) of this section, or (II) which was not so introduced or delivered before such date and has been classified in class I or II, and (ii) is substantially equivalent to another device within such type … (USC, 1976: 21 USC §360C(f)(1), italics added).

> (ii) (I) has different technological characteristics and the information submitted that the device is substantially equivalent to the predicate device contains information, including appropriate clinical or scientific data if deemed necessary by the Secretary or a person accredited under section 360m of this title, that demonstrates that the device is as safe and effective as a legally marketed device, and (II) does not raise different questions of safety and effectiveness than the predicate device. (USC, 1976: 21 USC §360C(i)(1)(A))

Substantial equivalence was a regulatory innovation that was particular to the regulation of devices. Unlike drugs, in which a chemical compound remains fundamentally the same over time, devices are improved upon constantly. Requiring entirely new approvals every time a device had any improvement would render regulation impossible. Substantial equivalence permitted regulators to replace a leaky wall with a formalized porous boundary. Moreover, under different administrations and budgets, the interpretation of substantial equivalence could in theory be interpreted more strictly or loosely. In practice, however, devices have always been regulated less stringently than drugs.

At that time, home pregnancy tests were still in their infancy, and given the fact that Ova II was seen by the FDA as a risky device it is unlikely that other device manufacturers would have sought to use Ova II as their 'predicate' device. Nevertheless, the product and its eponymous case had a lasting impact.

Under the OvaII ruling, home pregnancy tests could be marketed without premarket approval. Thus, the pharmaceutical company Warner-Chilcott was permitted to test market its product, e.p.t., before the enactment of the law. Warner-Chilcott was not alone. Indeed, there was 'enormous interest in getting a device on the market before the law was passed' because it could

avoid premarket controls (Landa, personal communication). As a result, e.p.t. was 'grandfathered' under its initial classification (whatever initial classification would apply to it), and companies marketing any 'substantially equivalent' devices could apply to have them classified similarly (Bastian et al., 1998; Family Planning Perspectives, 1979: 191). So despite the fact that the Medical Device Amendments extended the FDA's ex ante power to regulate all medical devices, there was a window of opportunity between OvaII on July 26, 1975, and the enactment of the law on May 28, 1976, within which pharmaceutical companies could sell home pregnancy tests with legal certainty. Warner-Chilcott's test market during this window took maximum advantage of the regulatory lag and would permit widespread sale and marketing of home pregnancy tests to US consumers.

Restabilizing networks of expertise

> E.P.T. Early Pregnancy Test gives women a new power, the power of time to help control the quality of their pregnancies. The first 60…days are critical in fetal development. Improper nutrition, cigarettes, alcohol, even commonly used household medications can be harmful in these crucial first 60…days before most women even know that they are pregnant. Now with E.P.T. you can know. Now, when you call your doctor, you have the results of your test to report. And time is on your side at last. (Vogue, 1978)

Less than two years after its test marketing, and during the period when implementation of the MDA was still being ironed out, e.p.t. became the first home pregnancy test to be marketed widely to American consumers.[6] It received much more widespread publicity than its

[6] Attempts in 2014 to conduct historical research with Actavis, the company that acquired Warner-Chilcott, and Insight Pharmaceuticals, the company that currently owns e.p.t., were met with great interest and encouragement but no results. Due to multiple pharmaceutical mergers and acquisitions since the late 1970s, the location or existence of any archives is difficult to discern.

predecessor Ova II, both in the form of paid advertisements and independent newspaper articles. Full-page ads in several women's magazines showed white, conservatively dressed, and calm-looking women reading the results from one of e.p.t.'s test kits. In some of the ads, a woman wore a wedding ring and was accompanied by a man. Some questioned Warner-Chilcott's 'right type' of consumer. 'Feminists feel commercials push the proparenthood stereotype, suggesting only white, married women who want to be pregnant become so', a Los Angeles Times journalist noted (Elvenstar, 1979: OC_C1).

While some were skeptical of the marketing of the test, many doctors were skeptical of the test itself. The American College of Obstetrics and Gynecology, the professional association of those physicians most involved with reproductive medicine, had 'no objections per se to over-the-counter pregnancy tests, as long as the directions for use are clear and the woman is advised to see a doctor if the results warrant it' (Brody, 1978: C11). Dr Ervin Nichols, director of practice activities for the ACOG explained, 'We neither condemn nor applaud the tests. There is no harm in the patient doing the test, but we do have concern for false results', such as a false positives leading to appointments at 'a storefront abortionist' and false negatives during an ectopic pregnancy which 'could result in death' (Krucoff, 1979: B5). One journalist who asked several physicians about their opinions of the tests wrote: 'Although a few did endorse the kit, physicians were generally negative about the idea of home pregnancy testing, and even those who approved had reservations about its use' (Henderson, 1978: A10). An academic journalist argued, 'Many members of the established health care system are critical of home testing. For some physicians, it may be a case of threatened hegemony', as well as the more noble cause of patient well-being (Powledge, 1980: E20). Between 1977 and 1980, articles weighing the merits

of home pregnancy tests appeared in The New York Times, The Boston Globe, The Los Angeles Times, the Chicago Tribune, and The Wall Street Journal, as well as many regional papers. A review of all of these articles confirms the contemporary journalists' findings that doctors had mostly negative views of the tests.[7] The doctors' two primary objections, lack of reliability of the tests and stress affecting the results, were the same as their objections to the prior test, Ova II.

The home pregnancy test was still a hemagglutination test, conducted using a test tube, a dropper, and a chemical additive, slightly more complex than the sandwich assay common today. Many doctors cited the general lack of reliability of the tests. Dr Dan Tulchinsky, a Boston OB-GYN argued: 'Something can very easily go wrong. Even under laboratory conditions, pregnancy test results vary. False positives occur three to five percent of the time and false negatives are very common' (McManus, 1978: A20). The medical director of Planned Parenthood of Maryland expressed skepticism that novices would use it correctly. 'I wouldn't even trust my reading of a test we do here as much as I would trust a lab technician who has performed the test hundreds of times' (Henderson, 1978: A10). Dr H. Lorrin Lau of Johns Hopkins 'has found that even medical students and their wives have difficulty doing their own pregnancy tests accurately' (Brody, 1978: C11). In a Chicago Tribune medical advice column, 'How to Keep Well', Dr G. Timothy Johnson advised readers of his concern regarding the accuracy of the tests, writing that 'as long as a woman is not hesitant about seeing her doctor, I think his test would be more reliable than these home tests' (Johnson, 1978: A5). Mary Petronovich of the West Hollywood Women's Clinic said that the tests were 'too complex for an

[7] Phone interviews in December 2015 with two of these journalists, Randi Henderson and Otile McManus (in 1978 at the Baltimore Sun and Boston Globe respectively), revealed that it was their own personal interest in women's health and pregnancy, combined with the permission of their editors, that allowed them to write articles about the new home pregnancy test. Both journalists agreed that, while they might have personally seen advertisements for the tests, industry interests played neither a direct role in their interest nor in their reporting.

average person to use', but also that 'any chemical test is invalid without a pelvic exam to back it up' (Elvenstar, 1979: OC_C1). Overall, doctors expressed a concern that laypeople, inexperienced with laboratory tests, would be equally or more likely to receive inaccurate results.

There was also a general concern that the user's stress about a possible pregnancy would affect the veracity of the results. Multiple doctors argued that a woman, 'may be under stress when she administers it' so '[w]omen will have less to worry about if they let their doctors tell them whether they're pregnant or not' (Henderson, 1978: A10; McManus, 1978: A20). 'People doing the testing will be befuddled, confused and nervous. Pregnancy testing is a very emotional thing and women can get so nervous that the test will have a very dubious end point' (Henderson, 1978: A10). Joe Graedon (1979), a pharmacologist, wrote that the directions were 'somewhat complicated' and emotions may make use of the test challenging:

> A woman who is distraught about the possibility of pregnancy (for example, a teenager unable to admit to the family doctor that she is sexually active) may find it difficult to concentrate on following the instructions exactly, and the test is not reusable. (p. B8)

Underlying these criticisms is the assumption that stress about a possible pregnancy would make a woman more likely to commit errors than a lab technician, neglecting the possibility that women may commit fewer errors because they strongly feel the gravity of the situation.

Many others, in addition to Mr. Graedon mentioned above, cited sexually active teens as the most problematic class.[8] Mary Alice Lee, a staff member at the Boston office of Planned Parenthood, believed that teenage girls, particularly keen on the 'privacy factor' of the test,

[8] One article in the Toronto Globe and Mail states that, 'It all came to a head in March, when a teen-age girl in the U. S. accepted the positive results of a home pregnancy test and paid for a "back-room" abortion', based on an inaccurate positive home pregnancy test result (Windsor, 1979: T8). I was unable to find any other sources confirming this incident or its notoriety.

might receive a false negative and be discouraged from seeking help (McManus, 1978: A20). Irene Wolcott, project director of the Washington-based Women and Health Roundtable, acknowledged both advantages and disadvantages of the tests:

> The people most likely to utilize these tests are teen-agers who may be fearful of going to a physician, and these same people have the greatest need of counseling that goes along with tests done in clinics. Ads always show women thrilled at being pregnant, while the whole population out there may not be thrilled. (Krucoff, 1979: B5)

A Maryland physician, David Tobin, said that many users 'are not the middle-aged, hopeful mothers-to-be portrayed in the commercials but rather they are single adolescents scared that they might be pregnant and fearful of the family doctor or local clinic' (Powledge, 1980: E20). Dr Tulchinsky combined concerns about stress with those of gender and maturity, 'What about that little girl who is scared and makes a mistake?' (McManus, 1978: A20).

Indeed, 'Laurel' wrote to 'Ask Beth', a Boston Globe relationship advice column: Can you tell if you are pregnant without going to the doctor?

> I'm too scared he'll tell my mother. She'll murder me, because she told me my boyfriend was too old (he's 18, I'm 15) and would get me into trouble … How soon can a person be sure? (Ask Beth, 1980: H17)

In her response, 'Beth' directed 'Laurel' to several confidential and free clinics in her area before chiding her about lacking sexual maturity and responsibility. There was no mention of over-the-counter pregnancy tests in her response.

Doctors also cited the need for a user to be with another person during the process. Tom Crane, director of Los Angeles Family Planning Council, worried about the lack of counseling

that was typically given when women were indeed pregnant (Elvenstar, 1979: OC_C1). Dr Isador Ances, an obstetrician and gynecologist at University Hospital in Baltimore, said, 'Finding out you're pregnant whether you're going to end the pregnancy or continue it, is a momentous thing, and you shouldn't be alone when it happens' (Henderson, 1978: A10). As the technology moved away from a doctor's office, there was, of course, the possibility that a woman would be accompanied by others who were not doctors.

Most medical professionals interviewed in newspapers also cited the cost of the test, which was often more costly than the inexpensive or free pregnancy tests available at many clinics (Henderson, 1978: A10; McManus, 1978: A20). Dr Ances of Baltimore stated, 'I can't understand why it would be convenient. All a woman is doing with this is wasting her money' (Henderson, 1978: A10). A bill was even introduced in the Maryland legislature to require prescriptions for this 'consumer ripoff' (Valente, 1979: C2).

Members of the women's health community were no less skeptical, but they also acknowledged more advantages to the tests. 'A staff member at the Women's Health Collective in Cambridge, who objected to the cost of the e.p.t., said that women who live in outlying areas where lab facilities are hard to come by, might find the home test useful' (McManus, 1978: A20). Community health specialist Mina Bender, a nurse who ran two clinics in New York, said the tests are useful to 'help de-mythify medicine by emphasizing self-responsibility … People should realize that they don't have to be geniuses to know about medicine and how their bodies work' (Krucoff, 1979: B5).

Though there were concerns and caution raised by the medical community, the ACOG and most individual doctors did not take a hardline position against the tests, which permitted a rhetorical waltz between doctors, health activists, the FDA, and the pharmaceutical companies:

> The message is clear: Many physicians are prepared to cede a few of their responsibilities to patients. Many patients are determined to avoid doctors when they can. And many companies are delighted to take advantage of the situation. 'What's new is an interest on the part of the business community', says Ken Hecht, director of scientific and technical relations … which markets a home pregnancy kit. (Powledge, 1980: E20)

Warner-Chilcott, the company that produced e.p.t., sought to refute specific claims as well as to assuage general fears of the unknown, both through their advertising to the public as well as through their media relations:

> The Warner/Chilcott representative said e.p.t. instructions had been distributed to a thousand women who read them checking for clarity and comprehensiveness. He said he doubted even a teenaged girl would have difficulty understanding them. (McManus, 1978: A20)

Vice president of medical affairs for Warner-Chilcott, Arthur Flanagan, said that the test is beneficial for 'the large segment of women who, for whatever reason, would like to do her own test and be knowledgeable of her condition first before she decides to share it' (Krucoff, 1979: B5). He added, 'But it is not a substitute for good medical care and for people who want the security of having a doctor perform the test' (Krucoff, 1979: B5). Meanwhile, some advertisements stated that e.p.t. was a 'private little revolution any woman can buy at her drugstore' (Consumer Reports, 1978: 644). Warner-Chilcott deferred to, and thus attempted to make alliances with, two groups that were traditionally in a more adversarial relationship: women's health advocates and doctors.

The business community quickly registered the potential market, though it came as somewhat of a surprise (Shannon, 1978: 1). Noting the growth of television ads, 'the move reflects confidence in a product that has astounded industry and analysts with its market success' (Brenner, 1979: D8). With three more tests soon to compete with e.p.t., analysts noted the inexpensive production costs leading to 'nice profit margins' (Brenner, 1979: D8). Though the women's health community neither formally advocated the research nor the widespread distribution of the tests, at least one business writer posited a connection between profits and women's health:

> Sales of home pregnancy test kits doubled in the last year to reach $40…million, will double again this year ahead and, manufacturers claim, soar to $100 million by 1982. The ballpark figure for sales in the mid-80s: $500 million. The boom is part of the self-help revolution in women's health, a crusade started by the women's liberation movement and fanned by 'Our Bodies, Our Selves', the Boston Women's Health Collective book. (McCormack, 1979: B2)

Interestingly, neither the 1976 nor the 1979 editions of *Our Bodies, Ourselves* includes any information about home pregnancy tests. It was not until the 1984 edition that the book advised women on when and how to take home tests (Boston Women's Health Collective, 1976, 1979, 1984).

Still some wondered: 'Women are buying them, but why?' (Brenner, 1979: D8). Dr Elizabeth B. Connell, an obstetrics professor at Northwestern, uniquely positioned as a former official at the Rockefeller Foundation and Planned Parenthood and an advisor to the FDA, believed that privacy and being the first to know accounted for the boom:

> There's no question. They are on the same level of accuracy as those done in a laboratory or doctor's office – when performed according to directions. It was first thought the kits would be used by frightened 13-year-olds. But now we know all kinds of women are using them – young, married, unmarried, divorced, diverse economic backgrounds. The concerns I have from a public health point of view is that once a woman knows she is pregnant she seeks medical care. (McCormack, 1979: B2)

Nearly every article about home pregnancy tests from the late 1970s advised women about seeking medical care from doctors. Under any circumstance that the test would come back positive, or if a woman suspected she was pregnant but the test result was negative, she was advised to report to the doctor immediately. Jane Brody (1978), the long-time health writer for *The New York Times*, detailed doctors' still necessary roles:

> If the woman is pregnant and wants to be, the doctor should examine her for potential complications and advise her about proper diet and avoidance of drugs, cigarettes, and alcohol. If she doesn't want to be pregnant, she should seek an abortion right away, when the procedure is safest. Before doing the abortion, the doctor or clinic should repeat the pregnancy test. (p. C11)

So while some doctors questioned the test's accuracy, many commentators thought that the test did not pose any threat to doctors' professional position or ultimate authority in pregnancy testing or health management. The test merely displaced some ancillary tasks to women themselves that were typically conducted by technicians anyway. For this reason, some saw the home test as a redundancy and deemed the kits 'largely unnecessary' (Brenner, 1979: D8). Through this displacement of tasks, home pregnancy tests also created efficiencies. Women who

received a negative test result, as well as their doctor,would be spared the time spent having an appointment that was unlikely to lead to further medical care. Women who received a positive test result would either make an appointment with their doctor, for prenatal care, or with an abortion provider.

As doctors debated the merits of the test, cultural prejudices about women and sex provided a backdrop to the debate. Despite the fact that women frequently received the same test in medical offices, women could be marked as promiscuous when they used the test at home. Consumer Reports (1978) (the leading American product review magazine) informed readers that, even if accurate, e.p.t. was needless, unless, of course, 'she doesn't want to be seen at the health department' (p. 645). By connecting pregnancy tests to health departments, Consumer Reports called up the long history of health departments combating disease among the poorest and most marginalized people, particularly prostitutes. The message was clear: a woman's pregnancy was least risky, both for her and for the public, when monitored by a medical professional.

Opportunities and foreclosures of regulatory lag

Meanwhile, the FDA had not yet issued its formal rules about home pregnancy tests, and e.p.t. was not subject to the agency's approval (McManus, 1978). John Taylor, director of the FDA office in Boston, 'said he's received no comments or complaints in conjunction with e.p.t. since it was introduced in the area [three months earlier]' (McManus, 1978: A20). As of early 1978, the agency was 'currently formulating a policy on selftests for pregnancy', and though e.p.t. 'does not now require premarket approval', the FDA 'expects to require assurance from the manufacturer that the test is highly accurate, safe and clearly labeled as to its proper use' (Brody,

1978: C11). Some camps suspected that home pregnancy tests would ultimately be available by prescription (Kotulak, 1980: B2; Valente, 1979: C2).

Hampered in its jurisdiction by regulatory lag, the agency issued an informational article in its magazine 'FDA Consumer' (Eng [née Maio], personal communication; Maio, 1979). The article included historical information, general instructions, and the standard warnings about false positives and negatives, and parts of it were reprinted in some regional newspapers. The main message was clear: Go to the doctor!

> Women who choose to use the pregnancy test kits at home should keep in mind the fact that this is only a preliminary test. In all circumstances, follow up a positive reading with an immediate visit to a doctor. And, a woman should also consult her physician if symptoms of a pregnancy continue after a negative reading. (New Pittsburgh Courier, 1980: 14)

In other media outlets, FDA press officer Jacqueline Maio stated that 'the at-home test is only a method of making a preliminary diagnosis, instructions must be followed strictly and false readings may create or disguise other medical problems' (Krucoff, 1979: B5). 'While an at-home pregnancy test can give an accurate diagnosis, consultation with a doctor is essential to assure proper medical care', Maio explained (Krucoff, 1979: B5). It was a 'cautious period' at the FDA, because the agency was dealing with a 'new innovation', but they '[didn't] want to step on the doctors' toes' (Eng [née Maio], personal communication).

By the time that the FDA was able to classify them in one of the three new risk categories of devices, the pregnancy tests were already widespread in the US market. Arguably, home pregnancy tests belonged under Class I, low-risk devices. They had no major role in life or health and presented no major risks of illness or injury – certainly no more than other Class I devices

like scalpels, eyeglasses, and thermometers. The internal FDA debate, however, was whether home pregnancy tests would be in Class II or III, moderate or high-risk devices, respectively (Suzanne Junod, 21 October 2011, personal communication). For each device, a panel of 'experts', including lawyers and doctors, would hold both open and closed sessions to 'receive information from interested parties, principally manufacturers and industry groups' (Boguslaski, 1985). Though these panels undoubtedly received information and lobbying from manufacturers, it is unknown which companies were present and what they argued.[9] Undoubtedly, they argued for a lower classification and less regulation. The classification panel would then conduct a risk-based assessment by answering a series of questions, produce a 'classification sheet' for each device, and provide a recommended class (I, II, or III) to the Bureau of Medical Devices for codification. Finally, a junior FDA attorney would be assigned to write the classification language for each device.

Even though Warner-Chilcott did not mass market e.p.t. until 1978, their early test market had a tremendous impact on the future of home pregnancy tests. Three other devices used e.p.t.'s grandfathered status, arguing that their devices were substantially equivalent: Answer (Diagnostic Testing/Carter-Wallace, Inc.), Acu-Test (J. B. Williams, Inc./Nabisco), and Predictor (Whitehall Laboratories/American Home Products, Inc.) (Family Planning Perspectives, 1979).[10]

[9] Though pharmaceutical companies undoubtedly lobbied the classification panel, thorough Freedom of Information Act requests to the FDA and in-depth interviews with former employees failed to produce finely tuned details of the home pregnancy test classification panel. Several former FDA employees noted in interviews that thousands of devices were being classified concurrently, making it hard to remember the details of this particular device's classification process.

[10] One might wonder, why did these devices not use the very first pre-Amendments home pregnancy test, Ova II? An unusual interim classification of Ova II brand devices specifically points to an ongoing uneasy relationship with the FDA, despite the ruling. In December 1977, Ova II and a few other devices formerly considered drugs were classified as 'transitional devices' requiring premarket approval. Other brands of pregnancy tests were not included in this list (Young, 1978).

Following the classification process, in 1979 e.p.t. was placed in Class II (Eng [née Maio], personal communication; Family Planning Perspectives, 1979; Maio, 1979). Attorneys drafted language specific to pregnancy tests to include in Section 510(k) of the MDA regulations to smooth the process for future devices.

Nearly forty years later, home pregnancy tests that use urine to measure a user's level of hCG still get 510(k) clearance, through arguments that they are substantially equivalent to devices already on the market. As of 2015, over 200 home pregnancy tests had been brought to market using this process. Despite the vast technological changes that have occurred since 1976, from the early hemagglutination in test tubes to the digital, plastic-enclosed, ultra-filtration sandwich assays to be placed in the urine stream commonly used today, the definition of substantial equivalence allows for leeway in the development of these diagnostic products.

'Substantial equivalence' is a legal device that has costs and benefits to be weighed by device manufacturers. The advantages of this approach are evident – it reduces costs of Class III reviews. Approximately 3,000 devices are cleared through the 510(k) process each year, taking as little as ninety days, while only about forty are approved through premarket approval, which can take up to a year and a half. On the other hand, seeking 'substantial equivalence' might limit precisely what a device is able to do in terms of its use. For instance, though more advanced technology exists, home pregnancy tests remain binary; that is, they only respond with a positive or negative measurement of the presence of hCG in the urine.[11] The tests available over-the-counter do not yet respond with a 'quantitation' of hCG (Food and Drug Administration (FDA), 2000) like those available at a doctor's office. A quantitative sample can indicate the healthy or

[11] Many users are able to discern subtle variation in sandwich assay home pregnancy tests by judging how faint or dark the line is, despite the test's Boolean script.

unhealthy progression of a pregnancy, an ectopic pregnancy, or a possible miscarriage. It is unclear whether such devices could be seen as having a different underlying 'use' than the predicate device.

The advantage of a substantial equivalence approach for the FDA is that the agency is still able to regulate products as technological changes happen and devices are improved. If 'substantial equivalence' were limited in definition to clause (A) (i) 'same technological characteristics', the FDA would be unable to regulate a vast array of products on the market. Instead, devices may, and often do, have 'different technological characteristics' when they are updated or improved upon. The limitation of this provision, however, is that a product must be a 'device', must be for the same 'use', and must have the same considerations for 'safety and effectiveness' as the predicate device.[12] There are vast technological differences between early home pregnancy tests and those that are used today, but given that they are for the same use and have the same safety considerations, substantial equivalence and the 510k process have permitted incremental changes to occur with light regulatory supervision.

Regulation, in the case of home pregnancy tests, was not a mere control on innovation or diffusion. Rather, the sequence of judicial decisions from *Bacto-Unidisk* to *OvaII*, the design of the MDA, the intermediate classification of the device, and the somewhat flexible role of 'substantial equivalence', all provided an opportunity for juris-technical accordance and facilitated the trajectory of the technology into the hands of laypeople.

Conclusion

When the home pregnancy test was introduced to a large American audience in 1978, the social terrain was almost entirely ripe. The test fit perfectly into the framework of self-

[12] Some newly developed mail-order diagnostic products, such as an at-home paternity test, are unregulated by the FDA. The manufacturers are arguing that they do not fall under the FDA's current jurisdiction.

knowledge, individual choice and individual responsibility that the women's health movement had developed and promoted. There were risks of home pregnancy testing – a user misdiagnosing whether she was pregnant or not, and the psychological burden of being alone while receiving monumental news – but due to a favorable court decision and regulatory lag, the various groups were able to align themselves into one general party line: It isn't that risky.

When particularly innovative technologies make great leaps forward, regulatory delays can provide an opportunity for industrial interests to secure market share unhindered (Nelson and Robinson, 2014). In the case of the juris-technical accordance of the home pregnancy test, there were at least three different regulatory delays, each which functioned somewhat differently. First, before the court decision in *OvaII*, pregnancy tests were barely noticeable in the US market. It is unclear, and perhaps unknowable, why Faraday decided not to market the test widely, but it is known that the regulatory framework was unsettled and going to market was a financial risk. Next, following the decision in *OvaII*, companies were able to market the test confidently and without fear of regulatory reprisal in a 'technological free-for all', and they did test marketing with particular urgency, given the coming regulatory schema. Nevertheless, it was not until the passage of the MDA several years later that Warner-Chilcott, a large pharmaceutical company, decided to market widely and advertise their test e.p.t.. It was at that time that the home pregnancy test received widespread public attention and acceptance. Thus the pregnancy test was in the home, and the challenge for regulators was to find a way to accommodate that.

Moreover, when the classification schema was ultimately enacted, the interested social groups were able to align themselves strategically. For example, large pharmaceutical interests intentionally used the language of the women's health movement while marketing within and to a white and heteronormative marital model to ease the device's mainstream acceptance. Though

the various actors with heterogeneous long-term interests coalesced around a common understanding of the device, power exists in patterns of value judgments, and thus it is important to remain attuned to which groups use 'rights language' and for what purpose.

Medical professionals raised the most concerns about the device's place in American social life. Like later medical technologies that have moved from hospital to home, the home pregnancy test challenged and blurred the jurisdictional boundaries of technicians, doctors, and patients (Conrad, 1992: 226; Oudshoorn, 2011: 69–70). In the case of medical technicians, the entire profession may have been threatened because their expertise and networks had not been diversified; some, whose main business was pregnancy testing, could be entirely replaced by the new test. The case of technicians appears to be a pure case of a jurisdictional conflict in which a monopoly was being divested of its power (Abbott, 1988). While the home pregnancy test marked one battle of an ongoing jurisdictional conflict of the medical profession against self-care, what some have called laicization (Abbott, 1988), the test also marked a reconfiguration and diffusion of medical power (Eyal, 2013). Medical doctors, unlike technicians, would remain gatekeepers for the cases that they most wanted to see. Women happy to find they were not pregnant would need no medical care, and women seeking obstetric care, abortions, or fertility services would filter to the appropriate providers. The ancillary rules and tasks of surveilling bodies and maintaining health would simply be rendered less visible and extended in an 'expertise expansion' to patients themselves (Armstrong, 1998; Childerhose and MacDonald, 2013; Epstein, 1995; Murphy, 2013). Brought on by self-diagnosis and the movement to optimization, doctors and patients were rendered partners in the reproductive endeavor.

To explain the trajectory of the pregnancy test out of medical offices and its assimilation into homes, this study shows the necessity of studying the multiple controversies the test

encountered. Without delving in detail into *Bacto-Unidisk*, *OvaII*, and the *Medical Device Amendments*, the rich case law and statutory law of home pregnancy testing might be analytically reduced to a control on technological innovation and progress. This case suggests that the settlement of the home pregnancy test was facilitated by the process of juris-technical accordance in which the laws and legal processes were influenced by shifting professional boundaries and changing views of medical expertise. Indeed, though the regulatory lag permitted this to start, the regulation ultimately translated various interests so that disparate networks could align. Moreover, this case shows that by taking a co-productionist approach to regulatory science, STS scholars can bring a unique analytic view to a field that has remained largely self-contained and introspective. Particularly in the burgeoning field of self-monitoring technologies, STS can contribute a richer understanding than legal analysis alone can provide.

Chapter 2: Am I pregnant? The body project of American women

"Then she knows her body has been given a destination that transcends it." Simone de Beauvoir (2011 [1949]:540-1)

"And then you come back about—what is it, five minutes later? And see your fate." Olga, 34

Introduction

Historian Joan Jacobs Brumberg noted that, by the end of the 20th century, the body had become the central personal project of American girls (1997). Brumberg's concept of "body projects" calls attention to the idea that women's sexual and reproductive bodies are ongoing projects that continue to be managed well into adulthood. Women and their families make tremendous personal and financial investments trying to manage reproduction, that is, managing whether and how their bodies become pregnant. Contraception might be the first thing that comes to mind, but it is just the tip of the iceberg. Going to countless medical appointments, having sex at certain times and in certain ways, taking pills that make them sick and their bodies distorted, enduring painful injections, enduring physical discipline from their parents, depleting their bank accounts (even going into debt), driving to the next town to go to the store so that no one will know they are sexually active, deciding whether to share or hide certain information about their reproduction from their loved ones and employers -- these are just a small fraction of the things that women I have interviewed (and their families) have done to manage the transition between "being pregnant" and "not pregnant."

Women take and endure such costly measures because the space between "being pregnant" and "not pregnant" is what Glaser and Strauss called a "status passage" (1971; 1965). A status passage is marked by the "movement to a different part of the social structure; or a loss or gain of privilege, influence, or power, and a changed identity and sense of self, as well as

changed behavior" (1971). In this paper, I examine the status passage between "not pregnant" and "pregnant." [13] This passage is socially complex. Unlike many other types of status, the status of pregnancy is neither a status that a person is born into, nor is it a status that one can remain in indefinitely. People are always born *not* pregnant, and they may or may not become pregnant in their lifetimes, one or more times. A person can "be pregnant" for merely hours, up to about forty-two weeks, after which time she will not be pregnant any longer. A pregnancy, therefore, is a temporary status that no one begins with, that is bound to go away eventually, returning the individual to her former status (albeit changed), and she might re-enter the status at some point in the future. Reviewing many of Glaser and Strauss' classic properties of status passage, pregnancies occur in a wide variety of social settings, through most of the life course, can be desired or not desired, are intentionally and unintentionally reversed, are repeatable, are done alone and collectively, and have varying degrees of voluntariness, clarity, control, and need for special legitimation.

Given these variables, it might seem as if no two pregnancies are alike, let alone all of them. Ginsburg and Rapp noted in 1991, "no aspect of women's reproduction is a universal or unified experience, nor can such phenomena be understood apart from the larger social context that frames them" (30). There is, however, one technology that cross-cuts all of these variables through most American pregnancies, providing an opportunity to examine this diverse passage more broadly, and that technology is the home pregnancy test. The home pregnancy test can function as a sociological prism, used at a particular time, and snapshot a spectrum of women's lives in a wide variety of social situations.

[13] Pregnancy is, obviously, not just a status, but a passage to the status of parenthood.

When a woman, her partner, or others, suspect that she might be pregnant, often the first action that they take is the purchase of a home pregnancy test. The Food and Drug Administration estimates that about 33% of all American women have used home pregnancy tests. This large percentage accounts for women who have come into contact with sperm (through sex or assisted reproduction), think they might be pregnant, and who have the various financial and social resources needed to acquire a test.

Examination of the use of technologies in public and in workplaces is well established, but studies of privately used technologies are rare in sociology. Given the well-worn literature on technologies and society, it is striking that nonhuman actors, particularly those used in the home, have not received more attention. This lack of attention is unfortunate because it leaves a sociologically significant part of life in the shadows. Gender scholars have long argued that the home is a "gender factory" (Berk 1985), producing the gender hierarchy between female/feminine and male/masculine. Yet, technologies of the home are understudied in the extensive literature on the gender order. Technology scholars have shown repeatedly that it is through human-technology interactions that the nuances of various power relations become apparent or perhaps even fixed. Moreover, prior studies of technologies of the self and home, such as housework technologies (Cowan 1983), genetic ancestry testing (Nelson 2008), and telecare technologies (Oudshoorn 2011), suggest that home and medical technologies help individuals construct a biographical narrative of one's life, or what some might call "identity," a recurrent focus of sociological research.

In this chapter, I examine the home pregnancy test through interviews with female users of the tests and their male and female partners. Home pregnancies tests often come to symbolize important moments and junctures in people's lives, not only of status passage to pregnancy, but

also of relationships more generally. Pregnancy tests also facilitate the transition of women into the various types of medical management that are associated with both wanted and unwanted pregnancies. Examining use of the home pregnancy test not only reveals general social norms and expectations about personal relationships and pregnancy, but also differences in self-management and identity formation that constitute critical parts of one of today's body projects. This sheds light on how American women manage their reproductive and sexual lives in early twenty-first century America.

Home pregnancy tests as a social technology

The home pregnancy test is one of the most common tools of diagnosis in American life and may initially appear benign. Scholars in the social studies of technology have long challenged the idea that technologies are neutral entities (Cowan 1983; Winner 1986; Star 1991). Rather, they argued, many technologies are inherently political and can reaffirm and perpetuate race, gender, and class hierarchies, among others. Moreover, given the prolonged struggle to bring less privileged voices to the center of research, technology studies, scholars argued, must attend to human experience and agency. Individual's unique and contingent accounts of technology must be afforded weight in such studies (Haraway 1988). One approach to studying technologies follows a technology as an actor in its own right and assumes a neutral and objective researcher (Latour 2007). My research adopts a different perspective by acknowledging that knowledge is situated (Haraway 1988) and deliberately places users at the center of the study to examine the relations between, and around, home pregnancy tests and users (Cowan 1987; Oudshoorn and Pinch 2003).

Feminists and others have long recognized that technologies are often, if not always, inscribed with information and meaning. Examining technologies that were created by a

powerful few for consumption by the masses, Donna Haraway noted, "the social relations of domination. . . are frozen into the hardware and logics of technology" (1984:52). In her study, the technologies were literally behind glass walls, unable to be touched or reinterpreted by viewers, and as a result, only one use was available -- the one determined by the designer. The patterns and expectations of human and social behavior are built into objects, as Latour noted, "Technology is society made durable" (1991). As such, social relations, for better or worse, can become less flexible when they are materialized into objects. Nevertheless, humans are able to manipulate and circumvent what a technology may appear to mandate (Akrich 1992). Often the internal workings of technologies are more accessible to users, and the uses and meanings of a technology are not purely deterministic. Thus, a core tension in contemporary studies of technology is navigating the injunctions of the technology and the volitions of the human.

Reproduction

The sociology of reproduction focuses on the social structures and processes that influence and are influenced by aspects of human species reproduction from pre-conception care through birth and breastfeeding. Most major social science analyses of reproduction focus on the relationship of the woman/patient to the doctor/medical system and examine social structures, processes, and technologies that produce, monitor, and/or ultimately remove a blastocyst, embryo, or fetus from a woman's body (See, e.g., Almeling 2011; Casper 1998; Duden 1993; Lappé 2016; Luker 1996; Mamo 2007; Markens 2007; Morris 2013; Murphy 2012; Popkin and Santelli 2012; Roberts 1998; Rock-Singer 2018; Rothman 1985 and 1986 [1993]; Waggoner 2012 and 2013).

This research contributes an important piece to the sociological literature on reproduction. First, the literature is thick on the period during pregnancy, and now the literature

includes prepregnancy care (Waggoner 2012; 2013), but no thorough studies have yet been conducted on usage of the home pregnancy test throughout the life course. Moreover, no studies have examined how reproductive devices in the home are adopted and used by women throughout their life course (one might imagine, e.g., condoms or tampons). Finally, contributing to the sociology of reproduction's keen interest in medical management, the home pregnancy test provides a rare opportunity to compare medical management to personal management because the test was expanded from purely hospital use to include home use. Rather than focusing narrowly on the home pregnancy test, this research uses the home pregnancy test to "contribut[e] to a fuller understanding and theorization of reproduction as a multilayered biological and social process that occurs over time" (Almeling 2015).

Research design

For chapters 2, 3, and 4, I conducted semi-structured in-depth interviews with 46 women and 30 men about their experiences with home pregnancy tests throughout their lives, read online news reports and posts about home pregnancy tests, spoke with dozens of people informally about their use of the tests, corresponded with many women off-the-record while they were using home pregnancy tests, and in the midst of the research, used them myself (Nelson 2016). Many of the interviewees were users as well as non-users (e.g., partners, medical providers, friends), in which case I conducted all applicable interview schedules. (Nonuser partners and medical professionals are fully analyzed in Chapters 3 and 4.). Interviewees told me experiences ranging from their teen years living with parents and guardians, through their fifties -- in the formal interviews alone, I heard well over 300 unique and thorough narratives and hundreds more partial narratives of home pregnancy test use. I interviewed to the point of data saturation. The narratives were read, coded, and organized, both using NVIVO and traditional tools, to reveal

patterns about pregnancy determination in the US in the early twenty-first century (Glaser and Strauss 1971; Charmaz 2006).

Pseudonyms of participants were chosen from the list of Atlantic Tropical Cyclone names and do not represent ethnicity, region, age, or anything else besides self-identified sex. The home pregnancy test, a small object that many people have never noticed, is in the metaphorical eye of many women's storms.

Interpretive flexibility during a status passage

"Pregnancy and motherhood are experienced in very different ways depending on whether they take place in revolt, resignation, satisfaction, or enthusiasm." Simone de Beauvoir (2011 [1949]:533)

It is a relatively new phenomenon that a woman believes she is pregnant when a chemical test shows a hormonal change in her body, and the meanings of pregnancies for individuals are varied. Indeed, one key characteristic of home pregnancy tests is their interpretive flexibility, in that different meanings can be attributed to them and that different uses can be enacted by various individuals and social groups. Here, I do not mean simply "positive," "negative," or "a faint line," but more importantly the meanings about their relationships, their body, and their identity. The meanings and identities formed from these tests are socially situated and sometimes even, "in flux" (Nelson 2008). Unlike other technologies whose interpretive flexibilities end in closure or collapse, the home pregnancy test is built to be used by a variety of women who will use it in many circumstances with different objectives in mind. There is no closure, nor is one sought.

But despite the similar self-care that is moved earlier in the pregnancy testing network, different users have different interactions with the script (Akrich 1992) based on intentions, stage

of life, and relationship status. The strongest demographic pattern in home pregnancy test usage was associated with age, relationship status, and pregnancy intentions, all of which are highly correlated with each other. Pregnancy test usage and interactions with the script generally fell into three groups, which for the most part were chronological over the life course, and can be compared.

Group	**Characteristics of use**	**Age range**
Living with adults, trying to avoid pregnancy	Fear, hiding the test, shame, embarrassment, financial dependence, celebration, they test most often alone or with sole female friend or cousin (sometimes with male partner)	14-18
Living with friends or partner, trying to avoid pregnancy	Worry, concerns with work or profession, shame, fear of becoming "a statistic," more frequent "hook-ups," celebration, they test most often alone or with friends or roommates (sometimes with male partner)	18-40s
Trying to conceive	Stress about ability to conceive, test as potent symbol of failure or success of their own body as well as of their intimate relationship, repeated testing, shame, longer-term depression and anxiety, financial commitment to conception, management of another person's feelings,	20s-40s

	medical management, celebration, they test most often alone or with male or female partner (rarely with friends or other family)	

The narratives fell generally into three distinct categories based on age, social situation, and pregnancy intentions, detailed below. For each pregnancy test narrative, I asked a series of open-ended questions about why they wanted a pregnancy test, how they acquired it, how they used it, and how they disposed of it. I probed for the social context of their lives to understand the reasoning of their decisions and to understand how reproductive bodies shape identities, affect relationships, and function in networks of care.

The stories together reveal the tremendous amount of invisible labor -- physical, emotional, and social -- that women do to manage and surveil their reproductive body projects from teenage years through menopause. This holds true even among women who received the pregnancy test result they wanted.

I hope my mom doesn't find it.

Though all of the interviewees were 18 or older and living apart from their parents at the time of the interview, many of them reported first encountering a home pregnancy test when they were a younger teenager (14-17). In those earlier years, all of the users lived in the same house as their parent or guardian and did not have their own place of residence. None of the people interviewed wanted to conceive children at that time in their lives and this experience was frequently called a "pregnancy scare" by participants. Some of the people interviewed were in long-term intimate relationships, which may have included a future of reproduction, but most of the individuals were in intimate relationships of short or uncertain duration -- a high school boyfriend, "a casual thing," or "not serious." Several women described being sexually active with someone who was "not a good guy" (or worse), and thus someone who was not a reliable partner with whom to share information, decisions, or support, let alone a child.

Women recalled the shame of being a teenager purchasing the test and the great lengths they went to hide it. Several women described living in small towns or close-knit communities and the risks of buying a test in their own town. They explained, "I went to like, a town over to buy the test," or "a drug store a couple of towns over," or they were "driving to another town."

Then, nearly all of the women who purchased a test in their teen years recalled the shame of the interaction at the store's check-out, what Goffman calls "sustained" embarrassment that is persistent throughout an interaction (1956). Helene recalled a "pregnancy scare" when she was sixteen, "And I -- I remember saying to the person at check-out -- "Oh, these are for biology tests that I'm doing for class" -- you know, like, lying about what they were for, and I'm sure he knew exactly what they were for." Bonnie described how she and her best friend, both age 16, would buy them for each other to avoid the shame and fear of purchasing their own tests, "[I]t just felt

like this isn't for me, so it's just -- I can buy this." Another woman explained, "At the time, you know, when you're sixteen, there's no mystery about what you hope the outcome of that pregnancy test will be. So I was just so, so embarrassed. I think I probably just was really like, also bought a magazine and some tights to take attention away from the pregnancy test so it wasn't the only thing glaring on the cash register." Yet another recalled, "And I just was so ridiculously embarrassed, I hid that sucker under a pile of crap I didn't need in my handcart. And I considered stealing it, because that would have been less shameful to me, you know?"

Taking a home pregnancy test during this stage of a user's life was characterized by feeling "ashamed" and "scared," even -- and especially -- in one's own home. Users went about their business trying to maintain composure to avoid more embarrassment (Goffman 1956). Users went to great lengths to "hide the evidence," knowing what they were doing was a transgression of their role as an asexual child. They "threw them away in the corner trash can," "stuffed it at the bottom of our garbage outside," wrapped the test in toilet paper and "stuff[ed] it down in the kitchen garbage pail," tried to "be cool about it," and "felt very stealth about it." Olga wrapped the test in toilet paper and took it out "to the big garbage that would sit in the driveway. . . just so nobody would -- you know, see what I had been up to." Women wanted to hide the evidence because even the possibility of pregnancy threatened to reveal their nascent sexuality to adults who generally tried to prevent or ignore it.

For instance, Grace was a star student who was placed several grades above her age cohort. This gave her parents great pride, but also great fear of her involvement with older boys who threatened to ruin her bright future. After having casual sex with a popular older athlete, Grace, a sophomore, wanted to be certain she wasn't pregnant. She took a pregnancy test at home, threw it out in the kitchen garbage, and took out the trash. Suspicious about Grace's

helpful behavior, her mother discovered the pregnancy test and was "devastated." Her father was furious and hit her repeatedly with something "more forceful than a belt." Grace recalled, "And I just remember like in the garage like me running from him and he kept saying, "If you are pregnant I'm gonna beat it out of you."" Her father proceeded to speak to the principal of the school and threatened to press charges against the boy. Though her recollections of having sex with the older, popular athlete were positive, she was "terrorized" by the experience of her parents finding the home pregnancy test.

Several teenage users took pregnancy tests outside of their own home, making it not really a "home" pregnancy test and more like the test's original 1970s name, a "do-it-yourself" test. Melissa took one in a "random gas station bathroom," and many other users recalled taking one at their friend's house or boyfriend's house. Taking the test somewhere besides one's own home protected their privacy and the threat of someone finding the used test in the garbage, and it comported with the overall sense that using the test was illicit.

Women reflected on the challenge of a potential teenage pregnancy. Women said they would not "have been a good parent" and would not "have been able to provide for my baby the way I am able to provide for her now that I've gotten through college." They also discussed how they would have gotten an abortion if they had been pregnant: "If I had two stripes on that pregnancy test, I would have been fundraising for an abortion pretty much right off the bat."

I'm a grown up now

Another group of women were taking the test in a residence shared with others, typically in their 20s and/or in college, although some in their 30s and 40s. Some of these women wanted to conceive at the time, but most did not, because they were working on getting their professional life and/or intimate relationship in order. Compared to teenaged users, there was less fear about people finding out about the actual taking of the test, and more often, male sexual partners knew about it or were directly involved in purchase or interpretation. These women sometimes had other people with them, and sometimes they did not. This period was marked by less fear for their own personal safety and well-being than the period in which they lived at home with their parents, but more fear of shame from their age peers. One user explained the feeling of many of the interviewees: "I didn't feel strange or, you know, uncomfortable at that time. But I was older and I also wasn't in my parents' house and it was my money and I was older than 25 so I felt like an older adult, you know?" The distinction highlights the physical disempowerment of being in a home controlled by others and the financial disempowerment of money being controlled by others.

Despite the older age and greater acceptance of sexuality, the test was still marked by awkwardness and sometimes shame and stigma about promiscuity. Women, particularly those with financial or geographic connections to their family, were still were haunted by the fear of their parents finding out:

> I think I was like, 20 or 21 years old. So, even though I was not a teenager, I still felt like I was going to be stigmatized by the customer service representative or someone. And so, I was kind of embarrassed. I didn't know what was going to happen. I don't know, it was kinda like, those television shows where they're like,

> do you have such and such in aisle three? You know? [LAUGHS] They've gotta make an announcement over the loudspeaker. Also, I made sure that I didn't buy the test in my neighborhood, just for fear that someone may see me, you know? Because even to this day even though I'm married and I have two children, I've still never told my mom that I've had sex.

Some women, even into adulthood, segregate the existence of their sexual relationships from their relationships with their parents.

Paulette was abroad on a family trip and thought she might be pregnant. She had a hard time getting away from her parents to buy a pregnancy test, and she didn't know where she could buy one or even if the store would be open. Finally, pretending to go out for an early morning coffee, she was able to get to a pharmacy, though no one there spoke English. "I touched my stomach and said, "Test" and they understood." She returned to the hotel lobby bathroom to take the test. Despite her parents' knowledge that she was having sex with her boyfriend, and their open-minded attitudes towards it, she thought that sharing the possibility of pregnancy may cause unnecessary drama on a pilgrimage trip to her grandparents' country of birth and site of her ancestors' genocide. The test was negative, and she was relieved. Shary, in college at the time, decided to take a home pregnancy test to avoid insurance sending information home to her parents, to "avoid the claim and the whole potential of the information getting to my family."

Interviewees who lived on a college campus were often afraid about the stigma and shame from their college community, already a challenging social and economic situation for many students (Ciocca Eller 2016). Florence described going to the pharmacy near her college to buy a test: "[it] was actually the most awkward and scariest thing. . . someone's gonna figure it out, like see me buy it and start whispering around campus. And so I just made sure I bought a

whole bunch of junk food and everything just to hide it underneath it all." Shary described the lengths to which she went to hide buying the test in college:

> So I assumed that they had them on campus but then I was like, "Someone's going to see me." So I was -- I have to go off campus to find it. I had to take the bus so I had to look at a bus map and sort of figure out the nearest, closest drug store -- cause I didn't want it to be too close. I didn't want to run into anybody. It was like this big secret -- like -- a spy event I had to do. Like I had to -- I put on a hoodie -- and I went to the -- across the river. It's across the river I didn't think I was going to see anybody. Across the river at that time was a pretty rough neighborhood. I went to the drug store and bought it.

Women linked taking the test to promiscuity and possible social exclusion. Rose took one in the Wal-Mart bathroom, the store at which she had purchased the test. To Rose, taking a pregnancy test in a Wal-Mart bathroom filled her with shame, acknowledging the conflict of what is perceived as dirty (a public restroom), and what is perceived as pure (pregnancy). Expressing how she felt to even tell me the story, Rose exclaimed, "So embarrassing!" Another woman and her casual boyfriend were talking about becoming exclusive, so she used the next month as a window of opportunity to "hook up" with different men every weekend, thinking it might be the last chance in her life. Thinking back on taking the test, she recalled, "My rationale, so I went a little crazy the last month of being single and I just remember sitting in my room, like, this is karma. Why is this karma for me being slutty this last month?" Following the pregnancy scare, she immediately became exclusive with her boyfriend and has remained with him since.

In addition to connecting their shame to their perceived *failures*, many people also connected their shame to their perceived personal and professional *accomplishments*: both failure and accomplishment were cause for shame. "I'm supposed to know things and I'm supposed to be responsible. And then, when I'm doing a pregnancy test on myself, clearly there's some disconnect or something, like -- denial or something. So I felt, like, shame mostly." In addition to shame, one concern was raised by both men and women of color, exemplified by one participant, "I just really, really didn't want to be a statistic in a lot of respects." They expressed that they had worked so hard for their achievements, and that these achievements could be taken away by one misstep. For them, a pregnancy, even if it was terminated, would add them to stereotypes of pregnant teenagers of color. Though white participants felt great shame in taking a pregnancy test, they neither expressed neither fear of becoming a statistic nor how hard they had worked for their achievements. This highlights the additional social pressures, stigmas, and psychological toll of stereotyping.

Though most of these experiences were filled with shame, when taking a pregnancy test was reflected on as the beginning of a positive relationship, the test-taking was viewed more positively. Gert described home pregnancy testing in college, tying the memories closely to the beginning of her relationship with her current husband, "I was a little embarrassed, I guess, you know, sort of similar to buying condoms and was a little worried. But you know, it was a little bit exciting, too, because it was almost like it proves you are a sexual being in the world, that you're doing -- something to get you pregnant." Gert viewed her sexual activity as an accomplishment and a coming-of-age that made her proud, and the test was a symbol of that.

Women in this stage of life generally had trusting relationships with their roommates and partners, revealed by the fact that many shared the fact they were taking a pregnancy test.

Nevertheless, the reaction of roommates could not always be predicted. One woman, now a doctor, recalled many times in her 20s that she threw away any extra tests that came in a box to hide any remaining physical evidence that she was worried about pregnancy. "I would have just, like, thrown away the whole thing to sort of hide the evidence with my concern, feeling relieved and then hiding the evidence, it's like never being worried in the first place." While she was in college, Whitney took a pregnancy test in a house that she shared with friends. After she took the test, she recalled, "I thought I threw it away, but I guess one of my friends got a hold of it and put it on top of the Wall of Shame that night." In their house, the women had a "wall of shame" where they made fun of each other and themselves. By placing the pregnancy test on the wall of shame, her roommates reminded her that her "hook up" had been illicit, in this case, with the wrong type of partner. After Ana and her boyfriend had sex without protection --"The Incident" as she called it -- Ana's boyfriend and Ana's sister waited outside of the bathroom making jokes "to lighten the mood." The test came back negative, and she was relieved. In both Whitney's case and Ana's case, friends used humor to make light of the possibility of a dreaded and shame-inducing pregnancy.

Some interviewees recalled being the supportive friend. Mindy recalled her college roommate taking a home pregnancy test while she was present, "We were in the dorm room, she went to the bathroom and did the whole pee on a stick thing, and I think she waited with it, and came out and told me it was negative. I was there for support, the whole freak out session, 'I can't have this baby, I have to finish school,' having her process that stuff." Another user remembered,

> And she took the first one. Positive. Took the second one. Positive. Took the third one. Positive. Took the fourth one. Positive. And we were -- well, she peed on

them all at the same time. And then they -- you know, as they were coming, you know, across and she's like, bing, ding -- And we're standing there in the kitchen like us three and as they like, you know, show their sign all of our eyes are getting bigger and we're like, Uh. And she starts to cry, the girl who took them. And we were like, Uhh, oh my gosh. And so then it was just like this somber, almost like someone had told us that someone we knew died.

She proceeded to accompany her friend to multiple doctors to ultimately get mifepristone (oral medication) to terminate the pregnancy. Another user remembered her first encounter with a pregnancy test, which was being there for a friend in her dorm:

> And I'll never forget, I was, like, so scared and I was, like, "This isn't even me." 'Cause I remember just sitting in the bathroom waiting for it and just, like, shaking. Like, I was feeling -- I was more nervous than she was, 'cause it's just like -- holy -- like, that one little sign can be if she's pregnant or not and I just remember being like, "Oh, my God, oh my God, what if she is?" And the girl who was taking it -- she was, like, you know, she has a 4.0 and her dad's [well-known], and she was just kinda like the angel. . . So the fact that she was in my bathroom taking a pregnancy test, I'll just never forget it. I was just so scared. And it was negative.

Several women interviewed first encountered a pregnancy test through an older or experienced friend, but there were also many women who were surprised when I asked about having other people present. These women described being a “private person” or [“my friends. . . I guess we’re just not like that.”] This issue also came up in recruiting, because women often

did not know if their closest friends, who were childless, had ever used a home pregnancy test. On the other hand, women with children were assumed to have used a home pregnancy test.

Some women used pregnancy tests after they had taken emergency contraception, to double check that it had worked, and they thought of the two technologies as very closely related. For instance, Chantal, abroad in a Catholic country, figured out how many birth control pills she would need to ingest at once as a form of emergency contraception, and then she bought a pregnancy test afterwards. She didn't feel shame buying the test in a foreign country because she was already "an outsider" and she thought, "who cares?" because foreigners like herself were deemed "more promiscuous" anyway. As such, her role as a foreign exchange was in concert with her role as a home pregnancy test purchaser. Fiona said, "I just remember that when I was having sex in high school, I was very careful about birth control and when I was in college, I had times where I was less careful. And so, there were times where I took emergency contraception and then did a pregnancy test after that." Beryl said, "The first time was with my current partner, my husband, and so he actually found my NuvaRing [a form of contraception]. It had popped out while we were having sex. And he, over the phone, very nonchalantly said, "Oh, I found a bracelet, you left a bracelet at home." And I was like, "What are you talking about?" So then I immediately got emergency contraception because it was still within that window. But then I was just paranoid and freaked out about the whole possibility of being pregnant. So we took a pregnancy test at that point, like several-- within the right amount of time, ten days later or something."

Some college-aged women took home pregnancy tests knowing that they would have an abortion if it came back positive. One user explained her conversation with her boyfriend, "We already had the discussion that if I was pregnant it was an abortion, that was gonna happen. And

so I took the test, thank god I did. I wasn't pregnant." After that "scare," she added additional birth control methods for more protection. Another woman noted, "[I]t was in a point of my life where I was trying to pursue-- pursue a . . . career. And so it was like, well, this would just like suck, you know?" Fiona, whose multiple forms of contraception had failed said, "I felt betrayed by my body, I felt betrayed by birth control." Despite all of the protections she had taken, she felt she had been irresponsible.

Some women recalled finding out they were pregnant when it wasn't an ideal time or relationship, and deciding to go forward with the pregnancy anyway. Maria said her age made it acceptable to her to go forward with the pregnancy, even though she was in a "rocky relationship," "I mean, you know, I wasn't young having the child. I think I was maybe 25, 26. You know, so I think that that was fairly good . . . for having your first child."

For many interviewees, the negative tests that they received in college and their 20s were easily forgotten. Without the fear of an embarrassing encounter with their parents or the memory of a positive result, some found their pregnancy testing in college hard to recall. One user with a particularly good memory for other events noted, "I don't remember throwing it out. But I assume I just tossed it in the trash can and then we probably went and sat on the couch and watched *Jersey Shore* like we did. Or *Twilight*, you know, one of those things we liked to watch." Victor explained, "I have a vague recollection of having them always sort of be around, and using them every so often. I don't ever remember them being—I didn't ever really have one of these horrible scares, you know?"

Trying to conceive

Women trying to conceive, either for themselves or, in rarer cases, as a surrogate for intended parents, viewed the process as a project to be undertaken. All of these women had hope

that they would conceive on their first try, and some of them did, but most of them did not. These participants were characterized, usually (though not always) by stable, long-term relationships around them. The stresses of the home pregnancy test were more about the ability of one's body to conceive and fulfill the expectation and responsibility of compulsory motherhood placed on some women (Gordon 1976; Roberts 1993). Many women began trying to conceive with only a basic understanding of the biological processes involved -- little more than egg-meets-sperm. More troubling, many women misjudged their ability to control the process, in particular, the timeline of conception. This was particularly noticeable in women who were very professionally successful and typically older, whose personal and professional lives had mostly worked out as they planned. Florence explained misconceptions that were common to many interviewees:

> So we started trying. . . [to] no avail, whatever and I was also kind of clueless about the process. I didn't think it was going to take that long. I just kind of figured "Well, you have sex and then like, boom," as long as it's within your ovulation period, done deal. You spend all your life trying *not to* get pregnant, you just never realize how hard it *actually is to* get pregnant.

Unlike some women of color, who are pressured by a variety of social forces to have fewer children (Roberts 1993), Florence is a highly successful Black woman who was convinced by her white husband that they should have children. She felt the pressure *to* conceive, and she did not feel that her race played a role in that, at least for her.

Women who had used pregnancy tests prior to trying to conceive characterized it as "a very different experience." Andrea recognized the role change from trying *not to* conceive, to

trying *to* conceive. She was comforted to not be alone and saw this as part of a larger human project:

> So, when my husband and I were trying to conceive and I was taking a pregnancy test, that was a completely different experience because I didn't feel -- so, when I walked into the pharmacy or we walked into the pharmacy together -- that was another change, because it wasn't like it was on me -- so, when we went into together to get the test, we together thought about which kind of test we wanted. We looked at the different brands. We looked at the different features. We did like, a cost benefit analysis if we should get two or three. [LAUGHS] And when we went to the register like, it was a sense of pride. Like, yeah, I'm populating the earth. [LAUGHS] You know, like, this is what will be.

As part of her larger project, Paula interpreted pregnancy testing as a phase of a woman's life and development:

> [W]ell like when I was 13 and I didn't need a bra yet, but like, there was all of this mystique around wearing a bra. And I had heard about it and I had seen it and you know -- knew about bras from like my older cousins and whatever in the movies. And it felt like that. Like -- oh, like now I'm part of this -- you know -- it's my turn now. Like -- this thing -- is part of my gear. I've entered this phase.

Teddy put it this way, "At this point it's like, you know, it -- the funny thing, you know, it -- it's funny because, you know, you spend so much time in your life being worried about something and then all of a sudden like at a certain point it becomes something that everybody is trying to do."

But buying the test in a store remained a shameful experience for some women even when they were trying to conceive. Fay recalled, “And I think every time I used a pregnancy test after that, I did the same thing. It was always like this subconscious, people are going to think that I'm, you know, easy or whatever the case may be. So I would always, like, play with wedding ring or say "Oh, my husband's really excited" or whatever the case may be. Overkill almost when I bought it.” Fay, perhaps because she was still somewhat young, continued to feel shame acknowledging her sexuality to a cashier, but she tried to show it was an appropriate role by proving that she was married.

Chantal, on the other hand, felt shame because she felt too *old*: “[S]o I’m 33 now and I always feel like now that I go they’re like, “Oh, she must be trying really hard to get pregnant, now that she’s, like, later, you know?” Some people recalled a clerk talking to them about the test. Arlene, for instance, seemingly had found the sweet spot between being too young and too old to use home pregnancy tests, “And I even remember the person, like, was asking me, "Oh would this be good news?" And congratulating me, 'cause I said yeah if it is positive it would be good news.”

Several women said that now they buy the tests “in bulk” online (from Amazon, in particular) due to the low price of the test, but as a result no longer had the awkward experience of going into a store. This was especially true of repeated test takers who had been trying to conceive for years as well as for surrogates. Gabrielle noted, “It is so much better now that there's like Amazon and you can buy all that stuff online and have it shipped to you and no one will even know. So I think that the advent of e-commerce helps the experience along.” Despite being a useful shopping method for many women to avoid the embarrassment of the interaction with the store clerk or the possibility of being seen by nosy locals in the store, women who are

trying to maintain privacy from their parents, roommates, or partner might in fact find online ordering and delivery more risky.

Many doctors and clinicians who worked at reproductive health clinics described how women of all socio-economic groups would come in to get a medical confirmation, having already taken a home pregnancy test. In almost all cases, the test is identical to the one women buy over-the counter (the medical diagnostic network is discussed in more detail in Chapter 4). One clinician, Tammy, who has worked for forty years providing reproductive health services, explained that most of her patients are undocumented immigrants, with scarce economic resources, no transportation, and who speak little English. Nevertheless, she described how it is rare that a woman would come in without having taken a home pregnancy test first. Given the difficulty of the appointment for many women, it might be surprising that women would see a medical provider at all. But for undocumented women, they are only able to get Medicaid for prenatal visits if they confirm a pregnancy with a medical provider. On the other hand, a midwife who worked in a family planning clinic in a very low-income county said women frequently came in for free pregnancy tests at the clinic due to the cost prohibition of buying them over-the-counter. As a result, they were typically at least two months pregnant, may have missed early prenatal care, and if they wanted to terminate the pregnancy, decisions and appointments had to be made and coordinated very quickly.

Although many interviewees were troubled by the lengths of time it took to conceive, those women and couples who conceived the first month they tried sometimes felt like they were not mentally prepared for pregnancy. Fiona and her husband were trying to conceive, and she expected to try for longer, “I was just in total, total shock because part of me also felt like, “Wait, I want to take this back, I’m not ready for this to happen.”” Imelda recalled, “And I just couldn't

believe I was pregnant because it was so fast. So I just took another one and then another one and then another one. And then I did the next day and then I went to another pharmacy. I was kind of in shock I guess. So I just kept taking tests." She took seven altogether.

Women and their partners who were trying to conceive, upon receiving negative test results, had emotions ranging from neutrality to extreme "disappointment" and "despair." Sam, a male partner, explained:

> And then her period would come and it would all start over again. And that would be time to despair and cry and think about things that we could have done differently and just plan for the next cycle. And that got really exhausting really quickly. And it took us a long time to conceive. So it was emotionally exhausting.

A reproductive social worker explained:

> So every month they're like distancing themselves from the pregnancy test. It's something they still heavily rely on and they're not going to give it up, right, but the relationship has changed from like this hopeful excitement in the first few months to, you know, I'm hesitant, I know I need to do this, I want to do this, I need to know, but I don't like it. And then, you know, towards the end, just like despair and anger and frustration.

Some women felt compelled to take the test, even though they were pretty sure they weren't pregnant. One woman tried to conceive for about four months before she got pregnant. Each month, she "was pretty confident" she wasn't pregnant, but she took the tests anyway. One user was introspective about her desire to take the test: "So you want to do it [take the test]. But it was just interesting for me and like examining myself why I would still take them even though I sort of felt like it was clear to me that I was not pregnant." Ophelia explained, "Well, I couldn't

wait to take home -- I mean, it was kind of exciting to take the home pregnancy test even though I was always sure they were gonna be negative."

Several women described the feeling of not being able to stop taking tests as an addiction. Claudette, a married women undergoing IVF for infertility recalled, "I remember I did eight -- the first day that I got a positive, I tested eight times that day. . . That was the first -- that was the first time that I knew, "Okay, these things are addicting and" -- [LAUGH] yeah, but I did." Arlene, a surrogate, explained, "Because I literally feel almost like it's an addiction. Like you've got it. You've got it. The addiction clears after the first ultrasound, but up until that point of needing to know, it's pretty intense." When I asked a reproductive psychologist about my interviewees "addiction," she explained, "It's an incredibly obsessive process. . . Pregnancy now gives a fantasy of control, and it is hugely disappointing, because there can't be this type of control." A social worker specializing in women's reproductive health explained another pattern: "[F]or women who have a lot of anxiety and fear and lack support, uncertainty, they're just more vulnerable to using those home technologies, over using the home technologies and then being really significantly influenced by whatever the home technology is or isn't doing for them."

After months of repeat testing and disappointment, other people -- usually partners -- intervened to tell women to stop testing. After several months of getting negative tests and crying about it, Paula recalled that "[m]y husband was like, "I don't want you to get disappointed again. Like, why don't you just wait and we'll see, you know, if you get your period or not."" Sam suggested that his wife delay test-taking, "[I]f you get a negative really early, like you are disappointed even before the big disappointment of her period starts. So you never really want to

like invite that in early." Florence tried to counsel a friend of hers against taking the tests too early:

> So I've been trying to talk to her because it's so heart wrenching, you know, to take that damn test and then have your period come like -- first of all, it says you're not pregnant and then of course your period comes like two minutes later of course. So I've been talking to her about it and trying to convince her to just say "Listen, just give yourself a couple days and let your period come if it's going to come", and I'm trying to like, convince her of that one week rule, you know, at that point, take it. And she's like "I keep trying but then I can't help myself."

Some women felt guilty that they had waited to try to conceive due to financial constraints:

> Each one of them came with a lot of anxiety because I married late in life and then we had -- our financial situation was unstable because of college paybacks and tuitions and all of that. And -- and then so we waited and then kind of felt guilty that we waited because then when I did want conceive, you know, things weren't working out. I had, I think, three miscarriages and I lost a set of twins -- like in the second trimester. So there were a lot of kind of, you know, like conception failures going on there.

Most interviewees in same-sex relationships recalled insensitive comments from friends in same-sex relationships, ranging from ignorance about the challenge of fertility to over-the-top celebrations about their own pregnancies. One woman explained:

> And also just one of my friends-- my friend was like, my best friend said this to me and it was so silly. She was trying to get pregnant and she was like, "You

> should try too." And I was like, "Yeah, we're gonna wait till the summer because I need to finish my dissertation and that's not gonna happen if I'm doing this." And she's like, "What do you mean?" And I was like, "Well, it takes so much time." She was like, "What do you mean time? All you have to do is fuck." And I was like, "Umm." And she was like, "Oh my God, I'm such an idiot." And I was like, "Yeah, you are. You have no idea. I had to do so much research. You have no idea what this entails. Not even just the time, I had to do so much research. And we had to pick the dude and sift through all that and talk to-- " it was really intense, all of the preparations. And then the months of, you know, them monitoring my cycle. Whatever, it was a whole thing. And she was just like, "Oh my God, I'm such a moron. Like I just think of you guys like any other couple." And I'm like, "Yeah, well we're not. It's not like that." So that is kind of an eye roll [INAUD] she's a dumb ass, but like also it was indicative of just how far removed my closest friends are from what I had to do to get pregnant.

For individuals trying to conceive who receive "good" news, that is, a positive test, the test often became a symbol of the moment or the child they were hoping for. One partner explained, "There were parties, you have a little party in the bathroom." Many users trying to conceive and receiving a positive make the test a keepsake, "One is in, like, a junk drawer and one is in a drawer of my jewelry box. . . I felt like it was such a moment in time, like, it was the beginning of a journey and I wanted to, you know, remember that moment."

Miscarriages and stillbirths negatively affected the way that couples trying to conceive viewed pregnancy tests. Sam explained, "Oh, it becomes totally different. You see a side of it

that you never saw that most people don't get to see. Most people are blissfully unaware of that. You decide to have kids, you just get pregnant whenever you want to, you have your kids, they're fine and you just never realize that lots of things can go wrong." Patty knew the emotional risk of finding out about a "chemical" pregnancy from her patients, and delayed her own test taking as a result:

> PATTY: And because -- because of the experience that I had had with people having positives, like, the day after their period was due and then bleeding the next day, I decided that I was not -- that I was going to wait for my period to be a full week late before I took a test. [LAUGH] Which was kind of hard to do.
>
> QUESTION: I was going to say, how was that sticking with that?
>
> PATTY: It was, you know, it was hard -- it was really hard. You know, 'cause you wanna -- you know, 'cause you wanna know. But I just sort of convinced myself that it wasn't going to be -- that it actually wasn't going to tell me anything that useful, that I was already doing -- you know, if I actually was pregnant that week delay made no difference because I wasn't about to have a surgery or an x-ray and I was already -- you know, I had already made the lifestyle modifications necessary. But I just didn't -- I didn't want to have one of those early chemical losses.

When she finally did take the test, she was very emotionally cautious about the positive result. I asked her if she knew she was pregnant:

> I was like, "Probably," since I was trying to get pregnant and my period was a whole week late, probably. But then, also at that point, I was afraid to be excited, because so much of my -- I -- I have to -- I tell -- I have to tell people that they've

> lost their pregnancy so many times that in some ways, I also didn't really -- the pregnancy test was sort of not a thrilling moment, I would say.

Just as many assistive reproductive technologies can be thought of as "hope technologies" (Franklin and Ragone 1997) and can harden into "regimes of anticipation" (Adams et al. 2009), the home pregnancy test fits into this same paradigm for women and their partners who are actively trying to conceive. One male partner explained it this way:

> And then there was the two week wait for the pregnancy, is either achieved or not achieved. And that was probably the best two weeks out of the month because you would just kind of hope for the best. And you would look for things that might indicate pregnancy, things that maybe were there or maybe you totally made them up.

Conclusion

Many women recall early pregnancy testing, outside of a doctor's office and often in their own home, with excitement and even positive overtones. When I asked interviewees to imagine what it was like before there were home pregnancy tests, every single woman who I interviewed expressed preference for the situation today.

This observation is important not only because it validates many women's real and lived experiences of pregnancy testing, but also because it highlights what is counter-intuitive about women's position in society, which is their participation in the system that subordinates them to men. In other words, if women's shared experiences about home pregnancy testing had been overwhelmingly negative, or even just marginally worse than a doctor's office, women may have elected to continue to go to a doctor's office to "find out [their] fate."[14] Using a home pregnancy

[14] Olga, interviewee

test in one's own home, or even in a public restroom, may generally be better for women than going to a medical provider for a pregnancy test; that does not make it liberating. Women have adopted home pregnancy testing knowing its well-known advantages, like the option to take the test alone in some instances, to share the experience with a loved one in some instances, and to avoid the intermediary that is the doctor, at least for a short amount of time. But women have remained largely unaware of the home pregnancy tests disadvantages that are well-hidden in the complex muddle that is women's subordinate status.

Chapter 3: Is my partner pregnant? Affective entanglements, women's autonomy, and the limits of partner participation

"The woman's relationship with her child's [other parent] is no less important." Simone de Beauvoir (2011 [1949]:536)

"I remember we even asked the doctor and the doctor said that yes we were pregnant but we were still too early to even be there." William, 35

"I'd been really conscious of -- or trying to be conscious and considerate of involving her equally because it's my body doing it and it was a unanimous decision." Debby, 36

Introduction

With the advent of assisted reproduction, biological reproduction can be distributed more than ever before -- an egg from one person's ovary can be fertilized with a second person's sperm, put into a third person's uterus, and the future child can be cared for by another person altogether different than the prior three. This physical labor can be distributed to other people, and typically it does so in stratified ways. Shellee Colen explained "stratified reproduction" this way:

> The reproductive labor -- physical, mental, and emotional -- of bearing, raising, and socializing children and of creating and maintaining households and people (from infancy to old age) is differentially experienced, valued, and rewarded according to inequalities of access to material and social resources in particular historical and cultural contexts (Colen 1995:78).

In the context of surrogacy, for instance, the biological corporeal labor of pregnancy more frequently gets allocated to low-income and low-resourced women for the benefit of families in wealthier communities and countries. The study of stratified reproduction acknowledges the

different types of labor that it takes to reproduce humankind in each generation and explores the unequal ways those forms of labor tend to be distributed.

Building on insights from Foucault, scholars in the social sciences now acknowledge that the production of new humans is far from straightforward, and indeed, the entire process is steeped in power relations that flow between government policies, institutional procedures, and micro-level technologies and that are enacted on bodies (Foucault 1978, Clarke et al. 2003, Murphy 2012). The rapidly advancing literature in this area typically examines how reproductive labor can shift from place to place, and frequently does so in patterns that benefit certain groups and not others.

In this theoretical context of potentially unlimited labor-sharing, it is a challenge to consider reproductive *partners*, because, while some of them are capable of being pregnant themselves, and thus taking a share of the biological, corporeal labor, the vast majority of them are not. Despite all of the shifts in reproductive labor, such as feeding and caring for children and even gestating fetuses (in the case of surrogacy), certain people can gestate new humans and certain people cannot. Almost all of the people who can gestate identify as women, and most of the people who cannot identify as men. This particular stratification of reproductive labor is not by class, race, or nation, it is by a particular combination of reproductive organs, hormones, and gametes -- what is commonly called "biological sex." From this perspective, women have the responsibilities of carrying a pregnancy with all of its risks, and all other people including reproductive partners are in some sense a "second sex."

More salient for non-scholars, we live in a culture in which the idea of parenting and partnership has changed radically over the last forty years, and partners are taking on more reproductive labor than ever before. Liberal feminism in the 1960s and 1970s sought for

equality in the workplace and then equality at home. In 1981, Betty Friedan wrote that women were being overburdened by their exclusive domain of the home and called the home "the new feminist frontier" to advocate for personal and policy change. The "new man" could "share the burdens--and joys--of parenting," but she wondered, "Is the new man going to come soon enough for us?" (Friedan 1981: 107, 110). Bringing men into the housework equation and making them equal parents was seen as a way to alleviate what would come to be known as "second shift" work that many women did when they arrived home each night from their paid work (Hochschild 1989). Scholars of fatherhood have noted how American fathers had always been involved with playing with children, but that the less desirable activities started to be expected of them during this period (the classic example being changing diapers) (Griswold 1993). In the 1980s, the changing roles of mother and father in dirty work were talked about in the media and parodied in films like Mr. Mom.

Concomitantly, the obligations of expectant fathers changed. In the 1970s and early 80s, fathers were just starting to be in the room during childbirth, and they infrequently attended prenatal appointments (May 1982; Griswold 1993). With fathers' changing parenting role and the advent of "seeing" technologies like sonograms and ultrasounds, fathers were able to become more involved with the medical aspects of pregnancy than ever before. By the late 1990s, just twenty years later, fathers were expected to be present at the birth of their child. Men who attended births began to be offered the task of cutting the umbilical cord as a sort of ritualistic participatory reward for being in the room. The "woman-only" spaces for birth in the US, though some still exist, seem passé in an era in which women discuss their bodily processes openly with their partners and ask their partners to be equal parents once the child is born. Today, non-gestating partners are involved sometimes even before conception, getting their

DNA tested for diseases that could affect their future offspring, helping their partner "get healthy," visiting assisted reproduction specialists, and collecting and taking their sperm to doctors for analysis and use. In light of the prior research on expectant fathers that was done over this forty-year period of change, my research suggests that the partner's role continues to change, and that partners are more involved with reproduction socially, emotionally, and physically than ever before. Technological changes have assisted and possibly accelerated the change in role.

Second wave feminist ambitions about the participation of partners in reproduction have begun to be realized, extending back not only to the delivery room or abortion clinic, but to pregnancy and even to time before conception. Friedan's "new men," as well as female partners in same sex relationships, are part of the reproductive equation more than ever before. As the distribution of reproductive labor is becoming more negotiable, the roles associated with mothering and fathering are undergoing a change. The shift in role boundaries often manifests in the prenatal period as intensive involvement in conception, attending appointments, monitoring consumption, and sharing in the emotional journey of a pregnancy whether it is wanted or not. Partners are often expected and often desire to be involved in all aspects of pregnancy. Did Friedan's "new man" "come soon enough for us" in the case of pregnancy? The answer, in many cases, is a resounding Yes.

Despite the change of the partner's role, women's lived bodies still bear the overwhelming amount of biological corporeal work it takes to make new humans. Indeed, second wave feminists fought hard to achieve another goal that is sometimes in contradiction with partners' full participation in expectant parenting -- to have the most fundamental classical liberal right of men, the right to control one's own body. Classical liberal theory rests on a

foundation of the rights and responsibilities to make choices about one's own body, and second wave feminists fought hard to have equality with men in those regards. Over the last forty years, the rights discourse of autonomy and liberal humanism proliferated in feminist language and ultimately secured changes to sexual assault laws, marriage laws, and abortion laws. At least in theory, all people have a fundamental right to be left alone, and the boundary of an individual's physical body is sacrosanct.[15][16]

Today, while non-gestating partners are involved in reproductive decision-making more than ever before, there is a simultaneous acknowledgement that it is women who (generally) have the legal decision-making power over their own bodies. The social obligations that people feel toward one another, often for feminist aims of shared parenting, tow a particular line that often runs up against the sanctity of the woman's bodily autonomy. The relationship and tension between these two competing feminist goals -- equality in parenting and equality in bodily rights -- comes into full view in the context of pregnancy.

These two concerns compete because the parts that feminists want to share -- the responsibility for conception, the emotional bond between parent and child, the preparation for the new family member, the feeling of responsibility toward the course of this new person's life -- is still completely within, attached to, and part of, the woman's own body. Given this context, this chapter asks, what is the social role of non-gestating partners in relation to pregnancy today, and how is that role negotiated in relation to a gestating woman's body?

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[15] Indeed, Michelle Murphy has documented how the term "reproduction," as it applies to human biological reproduction, emerged in the Industrial Revolution of the eighteenth century, alongside capitalism, when the liberal political concepts of individualism and private property were enshrined in law (Murphy 2011).

[16] With increasing technological capabilities during gestation, women's pregnant bodies have increasingly become contested terrain. In the US today, women do not have the same de facto or de jure right to self-determination over their bodies as men.

The pregnancy test, and the possible confirmation of pregnancy, is the first nearly universal experience of this boundary between a woman and her sexual and reproductive partner. As I discussed in the prior chapter, regardless of people's wishes and regardless of their outcomes, anyone suspecting a pregnancy can take a pregnancy test. The variety of ways in which different people in different relationships and contexts negotiate this period of uncertainty reveals the complexity of these social situations in action. Similarly, in my life history interviews with partners, I was able to collect accounts of partners throughout the life course who had different hopes and different outcomes. Despite the fact that most people who I was able to recruit were already parents, by doing life history interviews, I was able to collect accounts of partners who experienced pregnancy testing that did not result in a child being born, either due to a negative test, a miscarriage, or an abortion. Though pregnancy is seen, as one of my male participants stated, as a "female feminine thing," the variety of stories that I heard indicate that hook-ups and husbands, wives, friends, and even children and fathers, can be very involved in pregnancy from its first signs, by invitation of the woman or not.

In the wide variety of possible scenarios that can lead to the chance of pregnancy, the pregnancy test acts like a prism that reveals the relational nature of the way we live in the world. Despite the fact that a pregnancy only occurs in a uterus, it is a socially complex social phenomenon that is rarely, if ever, a one-woman show.

Exclusion

Men have long been left out of the "reproductive equation" when it comes to research in both the physical and social sciences (Inhorn et al. 2009:3; Almeling and Waggoner 2013). Researching partners, and men in particular, is important for a variety of reasons. The historical cultural binary that women are primarily reproductive and men are primarily sexual serves no

one well. Men, too, are reproductive beings, and women and others influence men's reproductive lives. Men, too, have reproductive responsibilities and do emotional and sometimes physical labor. American women continue to lay greater claim to their own sexualities, but men have just begun to be understood as reproductive beings who may or may not want to raise children, with or without a partner.

This study finds that partners still don't think of themselves as equals in the reproductive equation despite their changing role. Like prior research on men's reproduction, both male and female non-gestating partners were extremely hard to recruit. Pregnancy testing seems like it is women's business. The partners who were most likely to volunteer were men who had recently been trying to conceive with their wives. My research design of life history interviews intentionally broadened the scope to encompass scenarios that the participants may have assumed were not relevant. In the course of the life history interviews with men, I was able to collect stories about their past experiences when they were not trying to conceive -- stories of "pregnancy scares," unwanted pregnancies, friends' pregnancies, and other family members' pregnancies. It often took more linguistic effort for men to put together a story of the times that they were trying to avoid a pregnancy. Men who donated sperm for IVF as well as self-identified "feminists" were the most conversant in the biological aspects of reproduction and most comfortable during the interviews.

Men, of course, are not the intended users of pregnancy tests, which is one major reason why a pregnancy test study would have a hard time recruiting them. As Peter, 37, noticed, the pregnancy test was pink because it was not intended for him, "I mean obviously pregnancy is a female feminine thing." Men and other reproductive non-gestating partners are called "nonusers" in the social studies of technology. The concept of nonusers was developed when

use of the internet had a "digital divide" between privileged users of the internet and less privileged people who were socially or economically excluded from using the internet (Wyatt et al. 2002). Methodologically, examining only the users of a technology provides a particular and narrow view of that technology in the world. Examining the people who don't use a technology can reveal something about the technology and the context and culture of the use of it. For instance, studying a door by only looking at the people who go in and out (see, Latour 1988) ignores the people who aren't able to use the door, the ones who don't want to, and even those who built and maintain it. Studying a technology by examining both its users and nonusers provides a fuller picture of the technology and is more methodologically sound. Through nonusers, we can get a better understanding about what the technology does, how it does it, and for whom.

But how do we study people who are outside of the action? I asked all of my female participants to recruit partners they know, and a few of their husbands, boyfriends, and wives volunteered. More successful were my pleas through my personal networks and through organizations, including workplaces and men's groups and an evening speaking to scores of men in a fraternity house. Some of these locations are not typical sites of reproduction research, though I would argue, they should be. This displacement only makes them more difficult for researchers to access logistically and linguistically. Like my interviews with women, my male respondents were ethnically and racially diverse, but they were not socio-economically diverse and skewed highly educated.

Partners could, of course, only tell me about pregnancy tests that they knew about. The most striking thing comparing my interviews with women with men was the frequency with which women said they had excluded their partner. For instance, when I called Edouard to

interview him, his wife was also present on the phone, and he insisted that she participate in the interview because she would know more about the topic. The first pregnancy test that she discussed was one she used when they had just started dating, and she didn't tell him about it until they were trying to conceive many years later.[17] "We had just met, basically. . . our relationship was so new, I didn't want to freak him out. I felt like it was kind of my problem at that point." Edouard's wife excluded him from pregnancy testing early in their relationship so as not to render their relationship too serious too soon. As a result, she did not have a partner by her side, and she felt like it was her problem alone.

Exclusion was one of the greatest challenges of studying nonusers. Of course, a suspected pregnancy requires two people to have sex or at least two gametes to meet to create the suspicion of pregnancy (hence why same-sex partners were rarely excluded from pregnancy tests). In my interviews with women, women told me countless stories of taking pregnancy tests without their male sexual partner's knowledge, which explains why men knew of far fewer tests. The interviews revealed rather starkly that women are the gatekeepers of their own health, well-being, and bodies, and men are often kept in the dark about many suspected pregnancies.

Because the locus of the pregnancy is in women's bodies, and the pregnancy is not something that can be shared with men's bodies, women act as gatekeepers, deciding inclusion and exclusion in the knowledge of a pregnancy and even of a possible pregnancy. Women make these decisions by sorting people into different categories based on their expected levels of emotional support for the women's condition and the decisions she or they might face. When a friend, family member, or sexual partner was expected to require more emotional work output than the woman would receive back, that individual would be kept in the dark, and a woman

[17] In this three-person interview, I did not ask about pregnancy tests with prior partners so as not to cause any strife to the participants.

would take care of herself as best she knew how and often alone. Fiona explained, "I just didn't feel like he was my support person." When others were expected to provide care, the woman would call on them for help and support, and in these cases, women typically relied on existing support networks. In the absence of norms about who to include and exclude and how to go about taking the test, women rely primarily on the assistance of female friends and narratives in the media.

Whether and how men are included in women's pregnancy testing is determined largely by the details of the relationship between the two people. The most blatant distinction is whether the relationship is for sexual purposes only (what my participants called "a hook-up" or "an encounter"), in which case he is most easily ruled out of the picture, or whether the relationship includes an interpersonal or emotional component. Victor, 21, described the distinction well:

> But I think that would differ a lot for who the person was you were taking it for. If it's someone you're dating, I think that's good. If it's someone you kind of had a one-night stand with, or someone you just kind of like had a fling with, it might make more sense to take it yourself and then discuss it with them. . . . But I think in any scenario where there is some sort of intimacy between them, the girl would want the guy to be there.

Women interviewees recalled more hook-ups in their teens and twenties, so keeping pregnancy testing to oneself occurs more among younger women generally. Similarly, women who do not want to be pregnant, and would terminate the pregnancy if there was one, were also less likely to tell the male partner. But hook-ups aside, women in committed, long-term, monogamous relationships often made the decision to exclude or delay the involvement of their sexual and romantic partner from pregnancy testing. The reasoning behind that decision-making process is

not immediately apparent and often kept to oneself. That emotional work, not previously part of pregnancy testing when the test was conducted with a doctor, is rendered invisible for a reason.

When a pregnancy is suspected, men are almost always kept on the sidelines and frequently kept in the dark. A *potential* or *risk of* pregnancy, rather than being treated as some independent and separate time or state, draws its meanings directly from pregnancy. As such, the pre-pregnant women already takes on the historically- and culturally-situated concepts of women's bodies in classical liberalism, e.g., privacy, autonomy, control, and property. The *risk of* pregnancy, and testing for it, is not socially considered to be a male partner's right, and only in some relationships is it considered to be his responsibility. If there is a pregnancy resulting from sex, it is still a woman's responsibility and a woman's rights unless she deems otherwise, or until the child is born, when both parents have rights and responsibilities. Individuals and couples choose to add inter-personal permissions and obligations to the variety of rights and responsibilities enshrined in law. For instance, women often decide for a variety of reasons to include partners in pregnancy testing and other prenatal decision-making, even though it is not legally required.

The frequency of women taking pregnancy tests alone -- in particular, excluding their partner -- is staggering, and it can teach us something about women's reproductive station today. In early pregnancy, women are individual and autonomous, and they grant permission to others to be included. They have the right and the responsibility to be alone, and they often are. By staying alone, women do not invite the myriad concerns of others, whatever those might be, and they maintain more control than they might otherwise. The division of reproductive labor, which already includes for women the embodied gestational labor, also includes the emotional labor of caring for themselves and anyone they tell about potential pregnancies and realized pregnancies.

Women frequently choose to leave men in the dark because, even if they are cared for, they feel that it is in their best interest to be with others or alone. Tony explained his relationship with an ex-girlfriend:

> We both knew that we were not right for each other. We both knew that we were not ready to have a child. And so she had an abortion. . . .I do know it was home pregnancy test, but only because the phone call that had come from her was actually from her roommate. We'd broken up probably three weeks prior and hadn't talked since. And I think she was just feeling so overwhelmed and -- and didn't want to talk to me unless she had to. So her roommate had called me and clearly the roommate was the one who had been with her when she'd taken the home pregnancy test.

If men knew about all of the pregnancy tests that are taken, would they be more concerned about pregnancy and more likely and more willing to use condoms? More generally and more ambitiously, would men be better able to sympathize with women's concerns and more conscious of the links between sexuality and reproduction that women rarely fail to link? This study did not seek to answer these questions and it is not able to do so, but it brings to light some potential long-term advantages and disadvantages of control, autonomy, and privacy.

Inclusion

When I interviewed women, they told me stories of times that they excluded men from pregnancy testing entirely, times that they included men in pregnancy testing at some later stage in the process, and times that both male and female partners were involved during every step. Partners, almost always, told me stories about times that they were included in pregnancy testing. Women's judgment to exclude men in some instances seems like a good call in light of some of

the stories that I heard of women making the decision to tell them. In making these calls, a woman was judging the man's supportiveness and whether she wanted to take the risk of telling him. In many cases, it was a risk not worth taking and frequently, men are not told about potential pregnancies at all. The men that are told are selected because they are thought to be the most caring, the two individuals are in a mutually supportive relationship, and frequently the relationship is presumed to be reproductive and the couple may be imminently trying to conceive. In other words, the men that were involved are most likely to be the ones that would be supportive in one or more ways.

As nonusers, all of the partners I interviewed had been told that the home pregnancy test had been taken or they were involved in some stage. Many men talked about how they went to the store to buy the pregnancy test, with or without their partner. Usually this was at the partner's request, but not always. Like cutting an umbilical cord, sending men to the store to buy a pregnancy test was an assignment of a task that he could actually do. Unlike the cord, sending a man to buy a pregnancy test has an advantage for women, because women could avoid the embarrassment of purchasing a test that I described in Chapter 2. Many of the male interviewees compared their experience to buying tampons, and in a way, they were bragging to me about their modern manhood and familiarity and comfort level with women's bodily processes.

Partners' desire and willingness to participate in pregnancy testing was similar to, but the flip side of, the reasons women included them. Partners participated because they were asked to, because they wanted to be emotionally supportive of someone, because they saw it as a responsibility of a romantic partnership, because they saw themselves as biologically responsible for the pregnancy, because they saw it as the first stage in the process of fatherhood, and because they identified as feminists and believe in the equality of women.

Many partners who were trying to conceive thought of pregnancy testing as the first stage in parenthood and imagined themselves as co-parents, wanting to be involved at every stage of the pregnancy from conception through birth and beyond. Many partners tried to be as involved as possible, seeing the endeavor of parenting as both parents, permitting themselves to be emotionally invested in all stages of the pregnancy, and in the case of some men, loosening their sense of breadwinner obligation as a result. Edouard, the participant who insisted that his wife participate in the interview, said he would have rather been involved. "I would have probably wanted to know that she was stressed out -- just an empathy thing. . . I remember feeling a little bit bad that that was something that she had to deal with." Interestingly, when men in this study were given the choice and responsibility of participating emotionally, and potentially threatening their normative masculinity as a result, they almost always accepted. Men were willing to make this trade.

Despite many men's eagerness to participate as fully as possible and be emotionally invested in the pregnancy, there were times when these desires for an increased role came into contact with their position as non-gestating parent and typical expectations of gender. For instance, some men used odd language, in particular, the use of the word "we" to describe pregnancy testing. William, 35, who was more eager than his wife to conceive, saw it as a joint endeavor and thought of himself as a full partner. Throughout the interview, he continued to use the collective "we" to describe everything about the pregnancy, including every diagnosis and medical appointment, all of which he attended.

> And that's when we took the test again. And it happened that we still weren't sure but kind of we knew that we were pregnant but because it was so faint we kind of were in

disbelief until we actually went out to lunch later that afternoon with friends of ours who basically told us that they were pregnant.

When I pressed him about the details of the initial home pregnancy test, he explained, “So, I wasn't awake when she actually took it. She kind of woke me up after she got it.” Interestingly, William’s wife decided not to wake him up until after she had taken the test, though he didn’t mention or possibly even know why. William’s intention in the pregnancy was to be as involved and invested as possible, and by choosing to use the word “we” to describe the pregnancy he was committing to be a full partner and indicating his belief that men should be full partners -- he even described his friend’s pregnancy by using the collective “they” to describe a different-sex couple. During that part of the interview, I did not follow up on his wife’s decision to take the pregnancy test alone because I did not want him to feel uncomfortable. In my final question of the interview when I asked if there was anything else he was thinking about, he mused on his role as non-gestating partner, and he independently brought up his wife’s decision to take the test alone:

MALE VOICE: . . . I never was a believer in that kind of thought that all experiences need to be the same. I feel that there is differences between men and women. And I'm as feminist as they come but at the same time I also believe that there are things that are for a woman to experience and there's things for a man to experience. I feel jealous of my wife that she gets to breast feed. But at the same time I'm very excited that she gets that experience. I'm not someone who is like, I want to bottle feed because I want that experience of nursing my child. I think that's a special gift that she has, that she decided she wanted to take. You know, just like, I'm jealous of -- I wish I had an opportunity to

also have the experience of pregnancy and birth but at the same time I'm very happy I didn't have to do that. [LAUGHS]

QUESTION: Right. No, I understand.

MALE VOICE: But, I'm glad that she got that excitement by herself at first. I'm glad that -- especially because of the experience and kind of the journey that we had to deciding to start having kids and when that was going to happen, I'm glad she had that moment to have her own reaction before we had [UNINTEL]. I think it's important, you know, so she could also make sure she wasn't in an inappropriate head space because I think it's definitely something that a couple experiences. But in regards to the following reactions that someone's going to have, I feel like that's -- I mean, it's way more of something for a woman to digest than a man. You know, for me, I was like, okay, I have to make sure I can take care of my wife. I have to make sure that we are financially stable. Okay, yes, I'm thinking about making more money. Is our house big enough? All these different types of things. But I mean, her body is not going to be hers anymore. This entire experience of what she's going to have to go through, I feel is way more grand than the experience I had. I think we had a grand experience together but absolutely we had our own experiences.

William, "as feminist as they come," and committed to the collective pregnancy, recognized and was "jealous" of his wife's role in gestating their child and breastfeeding. Indeed, when he reflected on it, he was glad that she had her own space to wrap her own head around the pregnancy that was happening in her body. Finally, he acknowledged his own thoughts of how to care for his wife and his family, in particular, how he could make more money to meet their financial needs. In this case, William sought to be involved as possible in every possible aspect

of the pregnancy. This level of involvement with another person's bodily process comes with the benefits and burdens of care-surveillance. Here we can presume that William's wife wanted to receive care and share an experience and to achieve those ends was willing to lose the "I" and the autonomy of her body, not socially considered to be "hers anymore."

Supporting Actors

When a woman could potentially be pregnant, the division of labor becomes clear -- her role is to perform the embodied labor of possible pregnancy and the partner's role is to do the emotional labor of being a supportive partner. If there is indeed a pregnancy, women's bodies become the locus of it. Women and their partners mentioned many ways that a partner could be supportive, both before and after a pregnancy test: helping her track her period, going to the store to buy a pregnancy test, waiting outside of the bathroom for the results, comforting each other no matter what the results were, taking into consideration her additional embodied labor, and helping her to get the medical services she needs. A partner's emotional support also came with the privilege of assisting her in eating healthily and supporting her in her other consumption habits. In some instances, partners were asked to read the results of the pregnancy test first. Like cutting the umbilical cord, reading the pregnancy test could be easily done by anyone and was more a task that was assigned to make a partner feel included than a form of emotional support for the woman. Simply being present was mentioned frequently by partners. As Colin explained, he just wanted "to be there to experience it with her."

At this moment, partners become supporting actors in both the emotional and the theatrical meanings of the role. First, they can be emotional support systems for women providing all of the forms of support mentioned previously. They are also supporting actors in a theatrical sense, because pregnant women take the lead and partners are expected to follow.

Chris describes it as “the partner role, the father role -- it’s a secondary role. . . I’m there to share in the moment of the results. . . [my wife] did it, but then we didn’t look at it until we looked at it together. And then we share the results together as a team in our relationship.” The expectation built into the design of the test and proliferated by advertising and popular culture, as explained in Chapters 1 and 2, is that women take the lead role.

Interestingly, men are not stereotypically expected to be emotional caregivers for women or anyone else, although they frequently perform this role and its duties. Despite never being explicitly educated on what to do in these rare and potentially life-altering moments scattered through a reproductive life, the vast majority of men in my study eagerly took on the role of presence and support in pregnancy tests in which they were included. Of course, those are the men that are most likely to volunteer to be interviewed. But some men who interviewed went much farther than expectations, even talking to their peers about how to support their partner though trying to conceive, abortion, or pregnancy. Tony explained trying to support his wife emotionally by helping her prepare for uncertainty while trying to conceive and how he had learned this from male friends:

> I was in a fraternity and there's about ten guys that I am still good friends with, and at this point six of those ten guys have kids. And so they have all shared their experiences of what it was like when their wives were trying to get pregnant. . . . plenty of stories of guy friends of mine who were concerned for their own wives who became so emotionally attached to the idea of getting pregnant that when it didn't happen right away there was a lot of anxiety and a lot of frustration and . . . some depression. And I did not want [her] to go through that.

Tony's friendships in his all-male college fraternity extended into adulthood and included discussions of how to emotionally care for their wives' mental health while trying to conceive. This caregiving role and these male-male conversations, though common in my interviews, may be a feature of Friedan's "new man" that came to fruition.

The supporting role also led to feelings of powerlessness of partners. Some felt powerless because the process or decisions were out of their control, but others felt powerless because they believed themselves to be poor emotional supports for their partner. When Nicholas was in a relationship when he was younger and hoping for a negative, he felt that decisions were out of his control:

> Yeah, I think it's the anxiety of powerlessness, you know? I mean, you don't have. . . any control over what the outcome is gonna be in the immediate, right, of whether it's going to be positive or negative. But then, . . .the decision-making process after that -- you have a voice in, certainly that will be heard. But you don't have -- decision-making power or leverage or anything like that. You're very much -- at the will of what the other person wants to do.

Some partners felt the process was out of their control. Teddy explained how he wished a serious college girlfriend had not even told him about the process, "by involving with me was like somebody having, you know, kind of a gun to my head and constantly pulling the trigger but there's no bullet in it." Finally, Debby's concerns were about her ability to be an effective emotional support for her partner. When I asked her to compare being a pregnancy test user and being the partner of a user, she replied:

> It is actually a very different feeling. So I was very worried about – in being – in not being the user there's sort of like a – I mean you don't feel very powerful

> when you're the user I don't think either because it's kind of out of your control at that point. But there's more of a powerlessness I think in a way for me – I don't know why – just like knowing there's going to be that great disappointment.

These three forms of powerlessness -- in decision-making, the process, and feeling ineffectual in their ability to provide care -- clearly divide into avoiding a pregnancy and trying to conceive as a couple. In the former, management of birth control, fertility cycles, pregnancy testing, and the choice to continue the pregnancy, reside primarily with the woman. The powerlessness felt by Debby and others, including the fraternity brother Tony mentioned earlier, was of a different character. The nature of the relationships and the couples' pregnancy intentions played out in a number of ways for partners

Patterns of partnered nonuse

For men, whose sex with women can result in pregnancy, and in some cases same-sex female partners, possible pregnancies organized mostly along the same life course pattern and two-by-two quadrant pattern of women's home pregnancy test use. Partners' roles in each of these instances differed more than they did for women. Partners described nervousness, but the way that they described their role was not anxiously awaiting news, it was much more about their role as support. Unlike women's life course, as analyzed in Chapter 2, which patterned strongly around her age and living arrangements, men's experiences were less patterned this way. Another difference between women and men is that women's stories were both about the process and the outcome. In cases in which partners were involved with the process, it was the same for them, but where partners were less called on or less involved, it was much more about the outcome. Indeed, sometimes they were simply told the outcome and were kept out of all or part of the process.

	Want Negative Different-sex couples	Want Positive Different- and same-sex couples
Get Negative	"Pregnancy scares." Negotiating the language, young relationships, their role, their future	ART. Emotional and financial involvement, and the most potential to be physically involved with sperm or eggs. Men most involved with reading of the tests and conversant in biological language. Wanting to support partner emotionally.
Get Positive	Support person, accompany or pay for abortion, help her make decision, encourage her to get a an abortion	Got it so quickly, got it on the first try, "it took three minutes, literally." Thought it would take longer. Sensitive to other friends TTC. "We are pregnant." Kept the test.

"Pregnancy scares" - wanting a negative and getting a negative -/- (men)

Both women and their male partners told me about "pregnancy scares," that is, the suspicion of a pregnancy that would have been unwanted, but ultimately there was no pregnancy. This was most frequently talked about by younger men and by older men recollecting their younger years. Men in particular used the terminology "pregnancy scares," and I found this to be a particularly useful way to explain my research to men without children. Instead of research on the pregnancy test, which is believed to be in the women's domain, the "pregnancy scare" encompasses both male and female partners' experiences as well as potentially the experiences of other people around them.

All of the men who I interviewed who had long-term sexual relationships in their teens and twenties experienced "pregnancy scares," and many more men with whom I had casual conversations told me of such scares. Typically the stories involved their girlfriend's period being late, the acquisition, use, and disposal of the home pregnancy test, and the results. These men's pregnancy scares shared similar story lines, but for some men, there were additional concerns like a family's beliefs about premarital sex, a religious opposition to abortion, or concerns about each partner's ethno-racial background. A professional African American man in his mid-20s explained, "I didn't want to be that type of statistic. And, you know, obviously there's been a lot of other statistics out there that I was . . . avoiding pretty easily." A pregnancy means different things in different communities (Sall 2017) and is interpreted differently depending on the race or ethnicity of the parent.

One man explained his first memory of a pregnancy test, which in his mind related to his and his girlfriend's loss of virginity: "She was late, it was startling for both of us. I don't understand how the woman's body works specifically, but I think, all of a sudden becoming sexually active like for the first time -- maybe that has an effect on, you know, how her period

came or did not." He went on to describe how he prayed a lot and was "relieved when it was just a false alarm." He described his role as an outsider with little power,

> I was completely a bystander -- like completely subject with a lack of control on any front. But on the same end I didn't want any control over it. You know, I wanted to be very, very distant from it. Like I kind of wanted to just be in my own space and kind of wish it away.

Interestingly, he was not yet a father and had not had the experience of trying to conceive.

Women, however, very frequently did not tell their partners about pregnancy scares, so the stories I heard from men are only the instances that they were told about. The reasons women avoided telling men about pregnancy scares had a lot to do with women's sense of responsibility for what is going on in their own body, and on the flip side that it was not her sexual partner's business.

One man recalled the feeling from his youth about his girlfriend's frequent pregnancy scares, which he viewed in the context of his sexual and social immaturity, saying he used to think: "Why would you put me through this. . .it becomes increasingly more frustrating because it's like you're putting this huge stressor on me and you keep doing this and you have no idea how this is." He reflected on his change of attitude as he got older discussing his personal transition into being a caring partner, "These types of interactions with females as far as having to be a part of their lives in a deeper sense, was something I had never contemplated before." Sometimes women mentioned being concerned about their birth control method, particularly if they had taken a pill late or forgotten one day. Mindy, a married mother of two and a doctor at a prestigious hospital in New York, explained her decision to not tell her husband about recent pregnancy testing:

> [S]o ever since I had my second one, we kind of have decided that we're done -- and so, I'm on the pill. But every once in a while, I'll take it late or I'll forget to take it and I'll have to double up. And then, I always worry that I'll get pregnant again. . . first of all, it's totally irresponsible of me to miss a pill -- but I mean, I work overnights and some nights I'll work until, like, 11:00 at night and then I get home at 1:00 in the morning and I just forget -- which is not a great excuse, because I have to be a responsible adult, but it doesn't happen that often that I miss a pill. But anyway, I don't want to tell him, because he'll be like, "Oh, my gosh, how could you be, like, a grown woman and a professional and, like, forget to take a pill?" So I actually don't want to tell him because I think he'll be mad that I forgot.

Mindy's decision not to tell her husband about the pregnancy test was to avoid being judged by him and having a fight about it. Her inability to be perfectly responsible made her feel badly, despite her hectic schedule and working hours. There was also one case in which the woman didn't want to tell her regular hook-up that she was taking a pregnancy test because it might seem like she was questioning his withdrawal abilities.

> [F]or some reason this guy was very confident in his skills, his Greyhound[18] skills. . . I was like, "Well, you know, I mean it's not a big deal, but you know, like don't cum inside of me." So we have the sex. And like his method of contraception was the pull out method, like I guess guys usually do. And then so immediately after it happened like in my mind was like this, oh my God, I made the wrong decision. What if he didn't pull out in time? What if like one got away

[18] "When you're having sex with a guy and they're about to ejaculate. And they pull out like the Greyhound pulls out of like the bus terminal."

> and is like swimming its way toward, you know, my eggs?. . . . So I take the test and it came out negative. . . meanwhile the guy is like trying to like text me up. He's like, "Hey when can we hang out again?" I'm like not until I know I'm not pregnant. . . I was like, "Oh, just really busy."

Overall, women did not tell men about pregnancy scares because it helped maintain their positive relationship with the man, and in general, it reduced drama and stress in their lives.

Abortions -/+ (men)

Some men remembered pregnancy tests in the context of an abortion. In these scenarios, men relayed their role as a sexual and emotional partner of a woman who was going through an uncomfortable physical procedure, but also as a person who could potentially be responsible for parenting a child if the woman's decision to have an abortion changed to be to not have an abortion. Most of the men who had experiences of abortion used the language of the second wave women's movement about abortion, in particular the word "choice," in that it was their partner's "choice" whether or not to have an abortion. When Alex, 41, described a positive pregnancy test with an ex-girlfriend, he immediately told her "it was her choice. If I had felt strongly I would have said something, but I felt it was her choice."

Frequently, in both my interviews with men and women, the couple had agreed before the pregnancy test that she would get an abortion if she was pregnant, and the expectation in such a case was that the man would be informed. Tanya, 23, explained, "We already had the discussion that if I was pregnant it was an abortion, that's gonna happen." Another interviewee said, "we had decided that that was what we were doing." Several male interviewees relayed their stories of taking girlfriends to get abortions, that they believed it to be the best decision, and explained how they were trying to be supportive through the whole experience. Alex, mentioned above,

accompanied his ex-girlfriend to get an abortion, and he said he "felt like I was supposed to be there while she had [it] to be supportive, to help her get home and stay off her feet a while. There wasn't anything I could really do except for be there." Interestingly, while women discussed how their boyfriend would take them to get an abortion and pay for it, the men never talked about paying. Women talked about men paying in terms of men's responsibility or obligation, but the emotional care men gave them in terms of transportation, emotional support, and post-procedure assistance, was seen as beneficent and caring. Fiona, for instance, described an abortion she got when she was younger, "he wanted to come with me, but I really didn't want him to come with me. And I just didn't feel like he was my support person. And so, you know, he said he would pay for half of it, but he never did. I never saw him after that." Men valued, and were eager to relay, the care that they gave to their partners. Raphael described his goal of support in the situation, "And just trying to be there for her and soothe her." Again, to "be there" was the support that men could offer. Neither men nor women saw the payment as part of emotional care.

Men comfortably used the language of the pro-choice movement, and when they expressed their own opinion about a possible abortion, they played down or put aside that opinion and immediately turned the conversation to the woman's decision. One man explained,

> And so I think that my mind was probably made up before I even arrived at her apartment about what I felt the right decision would be. But at the same time was going to support her in whatever decision she made. I wasn't going to try to convince her of one thing or the other, just wanted to talk about what our options were.

In each interview, I probed for men's own opinions, but they were all very reluctant to talk about it, and I don't believe they had even given themselves the full right (and its responsibility) to do so. Instead, men talked about women's choice or decision repeatedly. Even when they had differing opinions from their partner, they framed the conversation in terms of her choice. Raphael explained:

> We ultimately had very different views about what we wanted in a relationship. She didn't want to be married. She didn't want kids. And I wanted both of those things. And then the process of determining what happens next, she was adamant that she was going to get an abortion. I was in the frame -- frame of mind that she was the love of my life and we were going to get married or be together, like whatever relationship developed into. And I remember just talking, being like, "Hey, we can have this kid. Let's not -- you know, whatever -- it's your decision, but whatever you decide I'll be there for you."

Raphael framed it in terms of her decision, even though he wanted to have a child in that relationship, and he offered to "be there." One man even explicitly discussed an abortion in terms of his feminist activism:

> For me at that point, I had joined an anti-patriarchy group and I was celibate for two years before I had met this woman. . . I had a lot of feminist literature going on in my head and like concepts about sexism and constructs. I was definitely politically supportive of women's rights and rights to choose and abortion, all these things.

In only one instance during my interviews did a male partner pressure the woman to make a decision one way or the other regarding abortion. Nicholas told a story about a troubled

relationship with an ex-girlfriend and her struggles with severe mental illness. When she found out she was pregnant, he tried to persuade her to have an abortion.

> And then, I found a place and I scheduled an appointment, and in the days leading up to it -- she was -- she started to get -- "Well, no, I don't think I want to go through with it, I don't think I want to do it." And I was like, "No, look, we talked about this, this is what we have to do, et cetera." And you know -- I don't want to say that I browbeat her into it, because I didn't -- I might say that, you know, I was very careful in -- you know, I definitely wanted a particular outcome. I was not like, "Yeah, this is your choice and I'm supportive of whatever you want to do and I'll be there." Not that I was saying, "Hey, this -- you know, you're gonna raise this child on your own," I would never say that. But -- but I was certainly-- . . . And try to convince her in a way that she felt like she had ownership of that decision, as well, and this was a decision that we were making together, et cetera."

Like trying to conceive, men discussed abortions with their male friends. One man relayed his interpretation of abortion through his friend's physical appearance and usual toughness, "He said, "You know, that was the worst moment of my life.". . . [F]or somebody who is a big tough guy. . . to talk with such gravity, [I] was a little shaken." This interviewee was particularly scared of his girlfriend having an abortion because a man who he considered typically strong found it to be challenging. One man, also troubled about an abortion experience with his girlfriend, ended up talking about it with male roommates:

> [It was] probably five, six years later I was sitting with a few of my roommates. . .the three of us were sitting around talking about our experiences with pregnancy and sharing, like, each one of us had a pregnant partner and each one of us had -- you know, had had our partners have -- choose an abortion. And I don't -- I think all of us had -- were talking about it for the first time with another man."

The way that he stumbled over the language of abortion and choice was frequent in the interviews and highlights an important point. Men are expected to play a challenging role -- an emotionally supportive partner who can sympathize, but does not have the choice, and who is not the focus of the care because it is not in their body, though they might be needing some care themselves. This vulnerability contradict norms of masculinity like control and certainty, and acknowledgement of the emotional toll of unwanted pregnancies could be interpreted as a sign of weakness which could prevent men from talking about it with others.

TTC and "getting lucky on the first try" +/+ (men in my study; could be same-sex partners)

Many of the interviewees relayed how it was extremely easy for them and their partner to get pregnant. Edouard explained, "Because my business partner, it had taken him a long time with his wife. And I kind of assumed that it wasn't a thing that happened right away. But it literally was the first try, I think." These narratives are in line with typical masculinity norms of virility because they implied the effectiveness of their sperm. Nevertheless, some men made self-deprecating jokes which undercuts the simplicity of the assumption that first-time success is about masculinity and virility:

> QUESTION: How long had you guys been trying to conceive?
>
> MARCO: Like, three minutes. [LAUGH]

Marco was making a joke about how he could ejaculate on demand (and reprised the same joke later in the interview). Some men discussed how they had heard stories from their friends about how difficult it was to get pregnant and how they were surprised it happened so quickly in their own case. Because it happened so quickly, some men described how they were not emotionally prepared for the news. Men and women who conceived more quickly than they expected sometimes expressed that they were not ready or were in a state of shock and that they expected more time to get used to the idea. Franklin explained, "I was quite shocked -- and I think she was too -- that our pregnancies were quick, these were fast. I mean, we didn't have to wait, we didn't have to struggle through getting pregnant, unlike my wife's sister." This was exciting for him, as it was for many men, because the positive pregnancy test was the moment that he began to fulfill his lifelong desire for children. He explained, "I've always wanted kids and I even had a list of names -- especially for girl babies. . . . when she got pregnant, it was an exhilarating moment for both of us."

The positive pregnancy test could signal a new kinship bond, even in an otherwise happy couple. One man expressed how he loved his wife and committed to her when they were married, but when he saw the positive pregnancy test, it was an indication that they would be together forever. He felt bad telling me this and reiterated how his marriage vows were true, but that a child could not be dissolved like a marriage could in divorce. Another woman told me of her husband's reaction to the test, "He got like tears in his eyes and rubbed my hands, "We're gonna become a family even more."" What these men were expressing was what other people implied -- today's kinship bonds formed by children are culturally understood to be longer-lasting than the kinship bonds of marriage. Through a child, you may have to interact with the other person forever.

Some men did emotional care work even in the case of pregnancies that happened quickly. Marco, whose wife was pregnant in "three minutes" was one of several men who suspected that their wife was pregnant, when she did not think so. Marco explained, "I was convinced that [she] was pregnant. . . She was like "No, I'm not. No, I'm not. And then, I'm at work one day and I get a text from her and it's just a picture of a home pregnancy test." Peter said, "for me to say maybe you are pregnant and her to say no I don't think so – and for me to actually be right about that was like – I think it was a complete shock probably for both of us even though I thought she was."

Men whose partners became pregnant easily often mentioned their sensitivity to friends who were trying to conceive or those who had pregnancy losses such as miscarriages and stillbirths. Sebastien's family friend had recently had a stillbirth, and his wife suspected she was pregnant and took a pregnancy test.

> So she—we took the test four days early and it came up negative. And we're like, okay it's only x percent certain at this time. And so then we took another one three days before, and that was negative. We're like, okay well let's just wait until the day of, because the day of is like 90% or—some much higher percentage effective. And we did that, and we were really concerned because we were ready to have a third at that time but we were really nervous about telling that other person who had just lost a child, like hey we're pregnant.

Men in these cases, unlike women, could potentially delay revealing the pregnancy, not only in their not-changing body, but in their feeling of well-being and their unchanging consumption habits. Nevertheless, they tried to be sensitive to those around them who they knew were having more difficulty conceiving.

TTC, ART, and Equal Partnership +/-

Pregnancy is never a one-woman show, but for some people, including same-sex couples, people hiring surrogates, and many other couples who have more difficulty conceiving, it is so much more of a group effort it can feel like a call for all hands on deck. Conception is more difficult for families in which gamete donors, surrogates, and other assistive reproductive technologies ("ARTs") are involved. People trying to conceive can incur financial costs, time costs, and physical costs, and often involve multiple additional people such as doctors, agencies, donors, and surrogates. These costs and additional relationships can render the entire endeavor of trying to conceive to be much more of a group effort than other pregnancies. The inclusion of other people in a pregnancy often peaks in the case of partners in trying to conceive. Especially in the case of in vitro fertilization (IVF), the group effort involves the couple's money, time, and the collection of sperm, which in the case of different sex partners, requires not only financial and time commitment but physical bodily commitment to pursue the endeavor.

Men were generally more involved with the entire process of conception when they were trying to conceive, both in terms of emotional labor and physical labor. Men's involvement, particularly in the case of IVF, requires physical labor that distinguishes it from the other groups cited above. In particular, their physical labor is tied up with their production of sperm, which unlike women's gametes are produced through sex. For both men and women, they felt anxiety and responsibility to be able to physically produce a pregnancy, but for men, this was tied up with sexuality in a particular way. Men were asked to have sex and produce sperm at certain times and in certain places. Several men talked about erectile dysfunction caused by being asked to have sex immediately and the high stakes. One man recalled:

> . . .that was frustrating because like I said, it was like performance anxiety for me. And she was like, "You're just supposed to do it." And I'm like, oh my God. So, it was just like this - I never really had that situation before. And so, I've ever had problems with that. It was just like, "Ahh," going crazy in my mind, like, "What am I doing wrong?". . . and then all of a sudden she's feeling like I don't think she's attractive. And you know, "Why can't you do this?". . . it caused issues for me, mentally, which you know, led down to the erectile issues and stuff like that. . . frustrating all across the board.

Another man recalled the performance anxiety caused by timing his masturbation at the fertility clinic. A nurse led him to the room and asked him, "How long should it take?" He worried the nurse would think,

> Oh, man you're quick. You can't perform sexually, did you just come in two seconds? So you sit there—you try to figure out, what's normal? Should you stay in there like ten minutes? What the fuck are you doing? So what I really remember was trying to process this question.

Men discussed getting their sperm tested, and none of my participants relayed particular problems with their sperm. One man explained that he was concerned about his own role, "I wanted to make sure my swimmers were working." Some men did discuss age when it came to reproduction, but typically they discussed it in relation to their wife's age. One man's wife was very concerned that she was getting too old to conceive, and he interjected with a comparison to his own position, "it's not like at 47 you have very good sperm, with very good mobility—you see the clock ticking."

The greatest physical undertaking of any of my male participants was a vasectomy reversal, which is a complex and lengthy surgery that requires general anesthesia, very unlike a vasectomy which is a relatively simple procedure.

> So when my current wife wanted to have a child, there was about five years where I—where I thought about it. Finally, I decided to try, and get it reversed. . . .It was super painful. The procedure is not painful because they knock you out, but the sequelae was unbelievable. . . it was a big deal. It was real surgery. And—I mean, a vasectomy, it's done under local, it takes about one minute, they don't knock you out. The reversal is done under general anesthesia, it took an hour and a half. I was in the hospital. It's a big deal, and it costs about twelve times the price.

Women are typically the partner who must undergo expensive and painful surgeries trying to conceive -- or really, in any aspect of reproduction -- but in this case, the male partner was the one who did the most physical labor.

The emotional labor of partners also changed when the process of TTC went on for several months or more. As previously mentioned, many partners discussed with their friends the process of trying to conceive, and some partners tried to dissuade their wives from becoming obsessed with testing, which could lead to anxiety and depression. Vince explained, "I was just trying to keep her thinking positively that it would happen. You're not 45. It's all good, it'll happen. It's a chemistry thing, when it works it works." As the months dragged on, some partners got much more involved.

In the case of IVF, physical labor, time, and money are involved. Many women who were trying to conceive using IVF, including same-sex couples, discussed the desire to give non-conceiving partners equality. Some women in same-sex partnerships discussed their desire to

have equality with their partner, and similarly, there were instances of women who discussed the desire to have equality with their male partner. Before Claudette left for work while her husband still slept, she would leave her used pregnancy tests on the counter without reading them so that her husband could read the result and call her at work to tell her. She explained, "It's a journey that they go on, as well." When Debby was pregnant, she wanted to involve her wife as much as possible, "I'd been really conscious of -- or trying to be conscious and considerate of involving her equally because it's my body doing it and it was a unanimous decision."

Interestingly, there were many cases in which women trying to conceive did not tell their partner about their repeated pregnancy testing and negative results. They cited their desire to protect their partner's feelings. Sam explained his wife's reasoning, "Maybe she just didn't want to do it in front of me because then only one person is really, really disappointed instead of two." He went on:

> She took the test without me, again. I don't know why. I don't remember feeling like I should have been there, so it was probably because I was expressing that I didn't want to take the tests just because you see so many negatives in a row and you're like I don't want to be disappointed today. I'll just put it off.

This highlights the emotional and shadow work that women do to protect men's feelings in the case of trying to conceive. Nate explained,

> And I didn't say that out loud, though, but I kinda only wanted to hear when it was positive. And so, like I said, I wasn't necessarily always totally in tune to when she was doing it. And so, I wasn't -- I wasn't hanging on the result every single time.. . . . Yeah, I was certainly not intricately involved. You know, I basically was doing what I was told and I was not instantly involved in -- you know, she

> had to go in -- again, I don't even know.. .. I wasn't necessarily at those appointments. And like I said, even when the tests were being taken, I wasn't necessarily even present. And so, you know, it was probably much harder on her psychologically than it was on me because I wasn't totally engaged, necessarily. And no one asked me whether I wanted to be engaged or not, but maybe that was the vibe I was giving off.

The couple discussed earlier, in which a woman was pressuring her husband to perform sexually on command at her peak time of fertility, causing him to have anxiety and erectile dysfunction, they eventually did get a positive. "In her closet, she had set up. . . a little Philadelphia Eagles baby outfit with the test dangling off of it." One way to understand this is that the woman in this case was expecting normative masculinity from her husband, punishing it when it was not achieved and rewarding it when she saw it. She had assumed because he was a man that he would be able to perform sexually on command with no emotional baggage but he had anxiety as a result, and then when he did produce a positive result she rewarded him with a baby onesie of his favorite stereotypically masculine sports team.

Like women, partners who experienced miscarriages and stillbirths took less stock in future positive results. They mourned the loss of the hope, or, in the case of stillbirth, the fully-formed fetus that was seemingly ready to be born and was indeed delivered. Sam explained how a stillbirth changed everything for them:

> But up until that point we had thought we were pregnant so many different times and it turned out not to be the case. So it was, it was surprising. It was amazing. And it was scary because you know, once you lose a baby at 42 weeks it's -- I mean before that pregnancy is really a benign beautiful thing that can never go

> wrong. But after that happens to you, you are just looking out for any possible thing that could happen. It opened up a lot of questions for us and it was very anxiety-producing time for us. But it ended well.

Some partners waited anxiously to pass the point at which the prior pregnancy was lost, but others construed pregnancy loss as a natural event. Chris, 39, recalled, "I think our excitement was a bit toned down because of having gone through a miscarriage the time before, that we weren't as excited. . .the saying for us was we're -- that's fine. All that was happening was we were cleaning the cobwebs out for the party." In the case of trying to conceive over an extended period of time, partners participate in different ways, and they can also be excluded from the frequent disappointments that the woman trying to get pregnant has no choice but to face.

Conclusion: Logics of autonomy, logics of care

Women, and many partners, felt like the responsibility for pregnancy testing is women's responsibility. Often, involving the partner actually adds emotional labor. In the case of pregnancy scares and abortion, the woman might not want his presence, in the case of trying to conceive, she may not want to burden him with the pressures and disappointments. Interestingly, involving partners in the process, including but not limited to saying the collective "we" is lauded as a feminist approach. But partner involvement does not entirely map onto what women think is good for themselves. What does map onto women's concerns -- what some might call feminist -- is *care.* One woman explained the dilemma between care and what she called freedom:

> I was so grateful to be able to -- um -- handle it on my own. I really was. That was the 19 year old me. If you ask me now, sort of what was good or bad about it -- so that is a really traumatic thing. And the fact that you can take a pregnancy test,

> find out that you're pregnant and make a decision alone, um -- I think it's really sad. I think it's a sad thing. I think that support and connection are vital -- just in life. And it's very isolating to be -- to have sort of that freedom. It's a freedom. But it's a very isolating -- I think -- sad thing -- also -- at the very same time -- yep.

The care that a woman needs might come from a partner, from someone else, or from herself. Recall what Victor, 21, said about partner involvement:

> But I think that would differ a lot for who the person was you were taking it for. If it's someone you're dating, I think that's good. If it's someone you kind of had a one-night stand with, or someone you just kind of like had a fling with, it might make more sense to take it yourself and then discuss it with them.

What this suggests is that the networks and expectations of care are already in place before pregnancy testing occurs. Interestingly, both male and female participants told me stories about how women told partners of pregnancy scares after the fact that they came back negative. Women don't want to worry their partner, so they do not tell them before the test. After the test, they are seeking full disclosure and honesty and hoping for understanding and concern.

For sexual partners, including those who want to care for women, care is particularly tricky. They have a lot of stake in the pregnancy themselves that is entirely within the woman's body. There are limits to the distribution of biological reproduction that cannot be shared between them. Though several of my participants used the collective "we" to describe pregnancy and experienced the process emotionally and even in some cases physically, and indeed they both could potentially be parents, partners not equal. Partners are well aware that they do not risk the wide variety of negative consequences of being pregnant -- harmful diseases

and conditions associated with pregnancy, death in childbirth, risks to fertility, or employment discrimination, to name just a few. But many partners want to be involved and care as much as possible. Understanding what that means and doing the work of it are the hard parts. Pablo, a therapist, had this recommendation about how to be a supportive caring partner.

> So a good role would be like, hey, this is a super serious thing, you know, that could be good news or it could be terrible news. So respect the process. Pay attention to her. And if she wants you to hold her hand while she's peeing, fucking hold her hand while she's peeing. Or if she wants you to stay away, try to be involved though, like that social support. So don't push for what you want, but keep your ear to the ground for I need to make sure I'm with you on this and you're not trying to do this on your own.. . . Supportive in terms of attending, attending to whatever is going on for her.

Chapter 4: Is the pregnancy real? Networks of diagnosis

"When we demand control over our own bodies, we are making that demand above all to the medical system. It is the keeper of the keys." Barbara Ehrenreich and Deirdre English (1973:5)

"You've usurped the expertise of doctors if they don't know that." Franklin, 53

"I called my doctor right away. It was probably the next day." Mindy, MD, 40

"The right to declare a certain rendition of nature as "true" represents the *outcome of* (rather than, as it is more usually presented, the *input to*) specific, contextually defined social and institutional processes." Alan Irwin (2008:588)

The past

The need to go to a doctor or other medical professional for a pregnancy test is imagined to be a thing of the distant past. Several of my interviewees were shocked when I asked them to imagine what it might have been like before home pregnancy tests. Typical responses were "I couldn't have functioned before pregnancy tests," "It would suck. I would be going there all the time," and "Horrifying." As explained in Chapter 1, it was only in the late 1970s that pregnancy tests were widely available over-the-counter in drugstores. At that time, the test required use of a test tube, special enzymes, and time. Advancement of the technology, in particular, the development of ultra-filtration assays that are still used today, made the tests easier and more convenient and facilitated their widespread dissemination. In today's context of widespread home pregnancy test usage, and with the passage of one generation of reproductive women to the next, it was hard for many of my interviewees to imagine what it was like in the years before the women's health movement.[19]

[19] Image from Ehrenreich and English 1973:4.

The very first publications to come out of the women's health movement included claims that doctors were "condescending, paternalistic, judgmental, and non-informative" (Morgen 2002:4, citing Boston Women's Health Book Collective, 1973:1). Their claims are backed up by the social science research of the time. In a contemporaneous and thorough ethnography of the movement, Sheryl Burt Ruzek writes that some obstetricians in the early 1970s espoused the traditional-authoritarian medical role, even refusing to reveal a diagnosis preferring medicines to remain unlabeled. She quotes one doctor as saying, "You just can't give women information without causing a lot of trouble" (Ruzek 1978:113). Doctors, who were almost all men, were particularly critical of younger and unmarried women. In an era before the general rise of concepts of informed consent, doctors told women what they thought was in the woman's best interest. As for women, "In 1969, a woman who placed herself under a doctor's care had the duty to do what she was told." (Morgen 2002:11).


Gynecological Exam

In the early 1970s, there was a general revolt against the authority of doctors. Sheryl Burt Ruzek writes, "The young, the poor, minorities, the aged, and feminists all are disenchanted with major aspects of American medicine" (1978: 6). The women's health movement, in particular, initially grew out of women's participation in feminist activism in the late 1960s and early 1970s, and the beliefs spread to women outside of the movement. Feminist activists "rejected the stereotypical passive feminine role supporting the traditional medical-professional model, particularly in obstetrics and gynecology" and these views became "widespread" by the

late 1970s (Ruzek 1978:9).[20] Women fought to take the technology, knowledge, and power into their own hands to have control over their own bodies. Women's health clinics, run by women, offered women abortions, contraception, and in the more radical forms including self-help education about their own bodies. Sandra Morgen describes the early women's health movement as a movement to "take their health care into their own hands, to wrest back some control over their sexuality, their reproductive lives, and their health from their doctors, and particularly their obstetrician-gynecologists" (2002:3). Women's health activists fought for a world in which women were "not dependent on medical superstructures for confirmation of the outcome of our own reproductive choices" (Oakley, 1976: 502). Women of the movement rebelled against their lack of control over their own bodies, their lack of autonomy, and their lack of choices. Choices were being made for them, and their health was not in their own control.

It was hard for my interviewees to imagine a world in which they would have to go to a doctor for pregnancy testing, and when they did, they cited inconvenience regularly and paternalism rarely. Several outcomes of the women's health movement make the movement seem like it is from a bygone era. Achievements include the entrance of women to the medical profession (in particular obstetrics-gynecology), the proliferation of patient's rights and informed consent, and the availability of medical information on the internet. The achievement of many of these goals, some of which were never even imagined, as well as the passage of one generation of reproduction women to the next, has partially eclipsed the initial question of medical authority that is worth revisiting in today's context.

Medicalization, in general, refers to the increasing jurisdiction of medical terminology and supervision over particular conditions (Conrad 1992). There is consensus in the social

[20] Ruzek convincingly argues that women's health activism in the United States began no later than the mid-nineteenth century as white men consolidated the obstetrics profession (Ruzek 1978:14-16).

sciences that American pregnancy has been thoroughly medicalized (see, e.g., Conrad 1992) and that such medicalization now stretches back to pre-pregnancy care (Waggoner 2015). There has been a backlash to the medicalization in the form of social movements seeking alternate or additional care in the form of midwives and doulas and births outside of hospitals. In the case of home pregnancy testing, the technology appears to defy both the generalized trend toward medicalization as well as pregnancy medicalization specifically. Women can, at least theoretically, take the test in the privacy of their own home outside of the watchful eye of doctors and the medical system.

Arguably, the technology's move is more akin to a "biomedicalization" characterized by, for instance, increased influence of market forces and an increasing distribution and use of surveillance technologies that are able to assess risk, distribute responsibility, and produce social identities (Clarke et al.. 2003; Clarke and Shim 2011; but see, Conrad 2005). One might argue, for instance, that women are performing their obligations as "biological citizens" (Rose and Novas 2005) in their use of the home pregnancy test.

Rather than judging whether the home pregnancy test is a pure case of biomedicalization or not, this chapter approaches the issue differently. Here, I trace the process by which a pregnancy (or lack thereof) is determined to be "real," by whom, and in what circumstances. Though pregnancy testing provides a non-medical moment for users, for many women the test facilitates their entrance into the medical system where they are re-tested by medical professionals. By tracing this network we can assess whether women are indeed getting the choice and the care that the women's health movement sought.

Pregnancy testing networks today

The current system of home pregnancy testing has many advantages to the old system. As discussed in chapters 2 and 3, people can enjoy the moment of privacy they can have by themselves or with their partner, celebrating the news before the pregnancy becomes a medical event. It is a moment when it can be a family event and celebrated for its social, cultural, and emotional meanings, rather than biologized and medicalized. Franklin explained,

> I'd rather have the test be one in the privacy of our own home, so that -- and it's a pure family situation and we can just talk about it. If the tests reveal that she wasn't pregnant, then we can talk about that -- if it was we can talk about it amongst us and how to handle that. You know, I think that's one of the benefits for a family, for couples -- is that they can do it on their own. Now I'm sure that the test is not 100 percent certain because I think I remember the test saying that. And so, that's why we fall in love with the OBGYN -- to make sure that she was pregnant and so forth. . . But I would prefer it being private, not given by the doctor.

Additionally, the technology is readily available (despite the potential embarrassments discussed in Chapter 2) to young women and women in rural areas who may not have easy access to medical providers or for whom a visit to a family doctor could be embarrassing.

As described in Chapter 1, following the transition of the pregnancy test from hospital to home, self care moved forward in time and changed in setting. Women, at home or elsewhere, sought an initial pregnancy determination outside of the medical space. After a home pregnancy test, depending on the result of the test and the outcome wanted by a woman, she would be directed to the appropriate medical professional or to none at all.

	Result: +	Result: -
WANT A POSITIVE	OB/GYN or Midwife	TTC / Fertility Specialist
WANT A NEGATIVE	Termination or OB/GYN	*No medical services, wait for period*

Women who receive a negative, who want a negative, generally seek no medical care and are removed from the network of care. They do not typically seek a confirmation of their negative result, and instead, just wait for their period.[21] Whitney explained, "And so I took the test, thank god I did. I wasn't pregnant. I didn't even try to follow up on it to see, just to make sure if it was definitely negative." One disadvantage of this might be that they are alone to decide on their contraceptive regime, whether it is working or not and whether it needs to be changed. They quickly dispose of the test and, for the most part, carry on with their life as planned. In some cases, women change their contraception regime to prevent another "pregnancy scare." Whitney was one of many women who mentioned taking this action, "And at that point I just decided that we just needed to go back to condoms. I'm not having this, you know, scare again." Of course women might change birth control methods after receiving a desired negative on a pregnancy test, and this might require going to a doctor. But even if she did so, the taking of the home pregnancy test and the result of the home pregnancy test would not need to be talked about with that doctor and probably were not discussed. Many women described a "pregnancy scare" that brought attention to unsatisfying intimate relationships, which

[21] A young woman is taught that her period indicates an ability to get pregnant but that she isn't currently pregnant. Waiting for one's period is a way of life among sexually active women who do not want to conceive, and in that way turns something otherwise not celebrated into a welcome event. "Like many women, I can summon up that old terror at will: being twenty-one and desperate to locate sensations in my breasts, in my belly, the first stains of blood--signs that my period is coming" (Solinger 2005:1).

they quickly ended, with or without telling their partner about the possible pregnancy. One woman explained,

> [S]hortly after, we broke up. And I think it really dawned on me that if they test came back positive that I potentially would have been stuck with this person for the rest of my life and I really didn't want to. And in my mind, I was dating him just to get back at my mom.. . . So, I quickly made an assessment about my choices and people I would be willing to be. And so, that relationship was over.

Another woman recalled a sexual relationship in college:

> It made me more aware of what kind of risky behavior I was playing around with and that I wasn't in a real relationship. And so I think shortly thereafter I must have stopped seeing him. I don't remember how it sort of ended, but just sort of petered out and I knew I was just moving on from there. That it wasn't going to be anything.

They recognized that, in the long run, the status passage of pregnancy and parenthood was not one that they wanted to undertake with that particular partner.

Women who receive a negative who want a negative are removed from the network of formalized medical care. All other women remain in the network of obstetric care, either specializing in infertility and/or assisted reproduction technologies ("ART"), specializing in pregnancy terminations, or those who provide care for typical pregnancies, all of which I describe below.

Women who receive a negative who want a positive are more likely to be older and/or want to build a family. These people say they are "trying to conceive" and sometimes have formed online "TTC" communities. These women might repeatedly take pregnancy tests to the

point of "obsession," and, if they are heterosexual, after varying lengths of time "trying" are deemed "infertile" and will be accepted by OB/GYNs who specialize in infertility and assisted reproduction. "I remember I did eight -- the first day that I got a positive, I tested eight times that day." Single women and women in same-sex relationships sometimes are admitted to see specialists immediately for assistance conceiving, depending on insurance coverage. In all cases, the medical professional retests them to confirm that they are not pregnant. Then, after receiving "infertility" treatment, these women take more pregnancy tests, both at home and with medical professionals. Several different types of treatments are available (e.g., clomiphene citrate (commonly known as the brand name "Clomid"), intrauterine insemination ("IUI"), and in vitro fertilization ("IVF")), and after each procedure or treatment, women retest one or more times with home pregnancy tests, sometimes against their doctor's suggestion.

Women who receive a positive, who want a negative, constitute half of all positive tests, and forty percent of these pregnancies are terminated (Finer & Zolna 2013). These women are more likely to be younger, in relationships that they do not view as long-term, and/or delaying childbearing. Sixty percent of these women decide to remain pregnant and carry the pregnancy, against their prior plans, in which case they visit an OB/GYN or midwife, and the other forty percent decide to see specialized OB/GYNs, Nurse Practitioners, or Clinicians to terminate the pregnancy, either with oral medication or surgically. Fiona explained,

> Well, interestingly, we always make them have another test. I mean, most of the people that come to me where I work now don't want to be pregnant, so they are coming in for an abortion and we always verify with a pregnancy test in the clinic.

In all cases, whether the woman decides to continue being pregnant or terminate the pregnancy, the medical professionals retest to confirm the pregnancy.

Women who receive a positive, who want a positive, want to build a family. For heterosexual couples, this could be after having sex once or after months of "trying." After a positive pregnancy test, these women will visit an OB/GYN or midwife to begin prenatal care. For same-sex couples and surrogates, home pregnancy testing typically occurs after a visit to a medical professional. Some people discussed the wait time between the positive pregnancy test and the medical appointment. One woman called the doctor and was distressed at the time she'd have to wait without advice,

> So they were like, "We don't even need to see you until eight weeks," and that made me really nervous because I wanted to actually talk to them about -- what should I be eating? What should I be doing? And what are the medicines you can take and not take?

Others retested at home with any extra tests that they might have had around. Many women and their partners discussed their personal consumption habits after the positive pregnancy test but before the medical appointment. Chris explained, "If you are growing a human being in your body you should deal with a doctor to resolve that, right? What are the things you should do? What type of deficiencies do you have that you need to supplement with nutrients or vitamins and minerals, different things like that, right? I think a doctor's role in that is very important."

A positive home pregnancy test was required in some instances for women to get an appointment with an OB/GYN. Paula explained how she knew she was pregnant, but that she could not make an appointment until she had a positive test:

> But then that's what happened was that I couldn't get a positive result when I actually was pregnant. But I had missed my period. I had the linea negra already. And I called my OB and she was like, "You can't come in until you have a

> positive result with a pregnancy test." "This is getting ridiculous." And I did get -- eventually -- a positive result and then I called the doctor back and I was like, "Okay, this is happening."

In this case the home pregnancy test, and implicitly the ability to access, purchase, and use one correctly, is a barrier to entering the medical system.

Not all women fall so neatly into these categories. There are a variety of ways women might not pregnancy test at home before being retested by a medical professional -- a few examples arose in the interviews, and I mention those here, but there could be others. First, single women and women in same-sex relationships who want to be pregnant almost always seek medical care before they take a home pregnancy test, if they take one at all (because they had no other chance of interaction with sperm). Additionally, one medical provider discussed how women at her former position used to come to her for pregnancy tests because they could not afford the over-the-counter tests:

> Until most recently, I've been working in a private practice in Manhattan. So almost everyone who suspected they were pregnant had taken they were a home pregnancy test, which was quite different from where I used to work in the Bronx, where women often didn't do home pregnancy tests -- usually related to the cost. So they would come to the clinic for that first test, if they had a suspicion. So you know, most recently, everybody had done a home pregnancy test often two, three or four -- I would say -- it was pretty rare that somebody -- had only done one.

This was an unusual response, and most other medical provider that worked in a low-income and low-resource community said that women had already taken a home pregnancy test before they came in. For instance, one doctor explained that such a situation was a rare occurrence. One

patient hadn't had her period for two months and hadn't taken a test at home, and the doctor was surprised. But she reasoned, "It's frequently people who have less access, less money."

The pregnancy test is a bridge or pathway that provides a reason for entry into the medical system for women who get a positive result, regardless of their intentions, or who suspect infertility and want to conceive. As discussed in Chapter 1, the pregnancy test has always come with the instruction to go to a doctor "if the results warrant it" (Brody, 1978: C11). One user, Teresa, saw it as an important moment connecting home care and medical services in a variety of situations:

> But in each case—the home pregnancy test is sort of the transition point between your own care or observing of your fertility, waiting to signal a pregnancy, and entering into the sort of OB-patient zone.

Retesting for confirmation and diagnosis

Women and their partners repeatedly told me in interviews that getting a diagnosis from a doctor of pregnant or not pregnant was "confirmation" and made a pregnancy "official." One user was trying to conceive and she explained,

> I think the night before I took the test and then the next morning I had an appointment and went in and got blood work and they confirmed the results that I had gotten so they confirmed that it was negative the first time and the second time and then positive this third time.

Sara described her impatience in waiting for results from the doctor's office.

> [O]ne of the nurses there. . .she was like "Okay, so what we're gonna do is like blah, blah, blah." And I was like, "Am I pregnant? Can you confirm this?" And

she was like, "Oh yeah, you are." It's like, just spit it out bitch, like tell me now. I was really like-- okay, so I couldn't believe her response. But then whatever, that's fine. And so I got the confirmation and called my partner and was like "This is real."

Some people said they "knew" but the doctor's test validated what they were already fairly certain about. Some people waited until the medical confirmation to make an announcement about their pregnancy. Edouard and Emily, the couple who participated in the interview together, jointly recalled the positive pregnancy test when they were trying to conceive:

> Emily: "We didn't want to tell our families before we went to the doctor?"
>
> Edouard: "Yeah. . . I knew we were pregnant, but there is still some part of me that really wants to know for sure -- to make it official. . . I think we were excited in a tentative way -- at least, I was -- and then when we saw the doctor, I was like, okay, holy crap, this is real."[22]

Interestingly, doctors repeatedly told me that the tests are the same. This sandwich assay purchased over-the-counter in a plastic container and in a box, or purchased online in bulk, is the same "qualitative" ultra-filtration sandwich assay as the one in the doctor's office and used in a hospital, and medical professionals repeatedly said that they use the same test as the one at home. The common sandwich assay sold over the counter is sometimes encased in plastic and sometimes comes with a digital reader on the outside that can declare "PREGNANT" or "NOT PREGNANT," but the technology on the inside of the plastic -- the actual test strip -- is the same. Doctors, of course, have the ability to run quantitative urine tests, commonly called a

[22] Edouard's terminology is familiar to scholars of reproduction because it brings to mind Barbara Katz Rothman's insightful book about amniocentesis, "The Tentative Pregnancy: How Amniocentesis Changes the Experience of Motherhood" ([1986] 1993).

"beta" test, as well as a serum or blood test. But the main test that they use is the qualitative pregnancy testing strip. Raphael, an ER nurse who has done "thousands" of tests at work, discussed how it's "essentially the same tests to my knowledge, you can buy -- yeah, they'd still view those as that much more authoritative." Some doctors laughed about how patients tested again and again thinking that the result would differ. Chantal, a doctor, said about her own home use, "So I would take, like, one test. I'm super intrigued by the phenomenon of people taking like, three tests." Indeed, doctors frequently reported taking and using pregnancy tests from their jobs for their own home use. One hospital even redirected pregnancy testing to a separate lab away from the nursing station because they were disappearing so quickly:

> They were disappearing from the nursing department. And we assumed it was the nurses, that is the large female pool. And there were only a couple of us females in the ER with child bearing age in the program in which I trained, so we weren't blamed for it. But they took those tests out of the emergency room and sent them to the lab. We had to literally put urine in little screw top cups, and then put them in one of those vacuum machines where, you know, you put stuff like labs in the plastic container, and put it in the vacuum tube and it shoots it to the lab. And the lab would do the urine pregnancy tests, so—god forbid the hospital wouldn't lose some unaccounted for fifteen-cent tests.

Like an academic might take home a pen, the cost of a pregnancy testing strip is so low that it is questionable whether doing this would be considered theft, but what made some medical professionals uncomfortable was the crossing of professional roles with their personal roles.

A positive pregnancy test by a doctor also allows women in some states to qualify for Medicaid and other public health insurance and publicly-funded options to receive prenatal care.

At least one provider discussed with me how she sends patients "upstairs" after the positive pregnancy test so that they can get medical services.

> We're right in the same building as the medical assistance office. So if -- if we get a lot of pregnancy testing, you know, walk-ins and we are also in the same office as WIC, you know, Women, Infants and Children. So we can refer them there too and we tell them to take the validation of pregnancy over to the WIC office which is right in the next suite and they will make a copy of that and give them all of the information about the services that they can get at that office.

In New York, for instance, undocumented women who are pregnant are eligible for prenatal care through Medicaid. Women who already have insurance are told to not come in for eight weeks, whereas women who do not have insurance have the incentive and pressure to come in for a test early, for both the care and the surveillance that that care entails.

The medical professionals' assertions that the home tests and professional tests are the same begs the question, why do people not trust the results of their own test? There are several possible answers. Maybe women aren't educated about the test or don't trust the results for another reason, for instance, not following the directions perfectly. Many women, for instance, questioned whether they did something wrong in their process of taking the test. Maybe the legal significance of a doctor's result carries significant weight with insurance. But these things do not explain the extreme reliance on a doctor's diagnosis, which seems to have more to do with an ongoing belief in medical authority and expertise.

Different results

There were instances reported by women and doctors of doctors getting different results from the home test, going in both directions, positive and negative. For instance, some doctors

talked about how the woman had taken a test and claimed it was negative, but then the test performed in the office came back positive. This can be explained by the rapid increase the pregnancy hormone HCG which can change exponentially from one day to the next. Alternatively, some medical professionals mentioned that home pregnancy tests came back positive, but that the tests conducted in the medical space were negative. This could be due to an early miscarriage or a misreading of the test. Sam, a clinician at a women's health clinic, explained that the different results he sees are mostly of this latter kind: "Mostly it was a positive pregnancy test at home and it's negative in our office. That might be biased because of, I wouldn't say miscarriages, but pregnancies that only last for a few days and just turn out to be really heavy periods." These cases can be explained, in part, by the passage of time. Women having very early miscarriages and women having early pregnancies may not have sufficient pregnancy hormone to be detectable by home pregnancy tests. Many women, and at least one contemporary doctor, believed that user error may be a part of the discrepancy:

> And I know pregnancy tests are designed to be as user-friendly as possible. But still there are errors and I don't know what those errors are. . . [S]ome tests belong in the hands of trained professionals for that reason.

Interestingly, in my interview with Dr. Daniel Mishell, one of the early developers of the in vitro pregnancy test and later, one of the pioneers of reproductive endocrinology, I asked him about technologies currently in development, including tests that report HCG levels quantitatively:

> QUESTION: What if the [quantitative] test was available at home? Do you think that would be a good thing?
>
> DR. MISHELL: Well, you have to interpret it and I think it's better to leave it just the way it is and let the professionals --

QUESTION: Oh yeah?

DR. MISHELL: I don't know, because I think it's sometimes even difficult for us [doctors] to interpret what the levels mean. Are they normal? Are they abnormal? Is this a viable pregnancy? Is it not?

In my interviews, doctors were aware that their own test results could be too early to detect a pregnancy, and they warned patients about the possibility that they may indeed be pregnant and it was just too early to tell. This caveat, delivered in laypeople's terms, is more easily understood than the probabilities of detecting a pregnancy as laid out in the package instructions.

In my interview with Maria, she discussed how she followed up her home positive test with a visit to a hospital, and they told her she was in fact, not pregnant. A couple of months later she discovered that she was indeed pregnant. She worried for years even after her son was born, that her delay in prenatal care would have negative effects on her son. Though he grew up to have no disabilities, she remained concerned for many years that the period of time without prenatal care could have negatively impacted him. Interestingly, Maria is a professional African American woman in the South, and her misinformation at the hospital is in line with scholarship about black women's health care in hospitals (Bridges 2011; Roberts 1998). Though no other users, black or of any other race or ethnicity, described a misdiagnosed *lack of* pregnancy through a medical provider, the case does fall in line with other scholarship.

Logics of pregnancy diagnosis

Annemarie Mol, writing about chronic illness in the Netherlands, identifies two logics used simultaneously by clinicians interacting with patients: a logic of choice and a logic of care (Mol 2008). Working by a logic of choice, she argues, doctors provide information about options from which patients are expected to choose as a means to control their body and

eliminate abnormalities. A logic of care, on the other hand, expects that doctors will communicate with patients about their holistic health, listen to their challenges and successes with various treatments, and help them accordingly. In her argument, these two ways of approaching doctor-patient relations are not mutually exclusive, but reliance on choice over or instead of care does a disservice to patients with chronic disease.

Pregnancy is different than chronic disease in several important ways relating to these logics. First, unlike chronic disease, pregnancy is necessarily time-limited, and pregnant people were not pregnant before and become not pregnant in the future. Second, unlike chronic disease, many people want pregnancy, want to do the best they can to make the pregnancy last, and want to serve the needs of both themselves and their fetus. Third, from a medical perspective, unwanted pregnancies can be terminated fairly easily, unlike chronic diseases which are persistent and challenging to treat. Fourth, pregnancy occurs in the larger context of historically and culturally limited reproductive choices. Comparing any other condition to pregnancy requires considering biological, medical, and contextual differences that make pregnancy unique.

Despite these differences, Mol's logics of chronic disease are instructive and a useful starting point when thinking about doctor-patient relations in the context of pregnancy, particularly given the historical lack of choice and care against which the women's health movement fought. This analysis shows that medical professionals respond to the possibility of pregnancy through both the logic of choice and the logic of care, and that these two logics can sometimes be in conflict. Further, this analysis shows how, in the American context of pregnancy, both logics can be superseded by the *logic of liability*.

A logic of choice: Seeking information, seeking services

Given the historical limitation of reproductive choice for women and the particular successes of the women's health movement, it is not surprising that the logic of choice was pervasive in the reasoning of all of my interviewees. Women and their partners discussed, not only the choice of terminating or keeping a pregnancy, but also the choice of OB/GYN or midwife, the choice of hospital, the choice of contraceptive methods, and the general choices involved in self-governance that are expected of all women. The choices available, far greater than before the women's health movement, are believed by many people to be throughout the system. This reasoning even extended to those who were personally opposed to abortion. One counselor explained, "I don't like abortion. I think it's bad. But you are entitled to your own thing. Regardless of what you think about that, like respond positively. This is a huge life experience that's happened to you, for now, and so be there. Be positive." When patients explained their desire to go to a doctor, they explained the information and the services that a medical professional would be able to provide.

Though the logic of choice was the underlying and pervasive reasoning about medical services for pregnancy women, sometimes the logic of choice was superseded by the doctor's presumed logic of care to the chagrin of the woman. Nicole described her experience going to a doctor for medical diagnosis. If she was pregnant, she already knew she would terminate the pregnancy.

> "I don't know, this one said no, this one said yes. I don't know." So I went to the doctor and I took a pregnancy test there. And you know, he was like, "Oh, well, congratulations, you're pregnant." And I was like, "Oh, wow. This isn't really congratulations." . . . "I can offer you a referral to go upstairs to the OB/GYN department, get some prenatal vitamins, start everything out."

Nicole's experience shows not only a lack of care about her holistically as a person, but shows the doctor making assumptions about her desires and denying her the choices she might have, providing information that is not appropriate for her situation. This example shows that the logic of care driving the doctor's behavior is wholly dependent on his understanding of the patient's life and desires, which can be wrong like they were in this case. The logic of care, here, is in the doctor's hands, and it must be exercised with caution, or it becomes paternalism. Indeed, approaching the interaction with a logic of choice could be less risky for the doctor on an interpersonal level.

Most patients, however, approached medical interactions related to pregnancy diagnosis through a logic of choice, which is believed to be in the patient's hands and control. The logic of choice in doctor-patient interactions was fought for by the women's health movement and largely achieved in the form of a patient's right to informed consent. In the logic of choice, the locus of responsibility lies with the patient, that is, as long as they have been given enough information.

A logic of care: Delivering results and trusting patients at home

In addition to the logic of choice in doctor-patient interactions which was pervasive throughout the interviews, at times, a logic of care also came through. Medical professionals who I interviewed often brought up sensitivity in communications and their desire to address the patient's physical and psychological needs as well as other needs and concerns from the broader context of their life. Many medical providers also discussed the need to assess the patient's desires before delivering pregnancy testing news as well as the desire to be strong for the patient. These interactions, which also included but were not dominated by choice, relate more closely to Mol's logic of care. One ER doctor described it as one of the most rewarding aspects of the job:

> But one thing that I can offer -- and I always kind of wonder if that's why they came to the ER -- you know, like I said, maybe even subconsciously is that I can help them talk to other people. So I can say, like, "You know, this test was positive," like, sink in for a few minutes and then say, "What do you want to do? Is there anyone you want to talk to about this?" And if it's a teenager, we can bring Mom in, we can talk together, like, patient, Mom and me. We can bring boyfriend in, we can call someone together. So they are kind of -- there's, like, a mediator there for them.

Similarly, Raphael, 40, explained, "[I]t has that inherent kind of problem in medicine in which you have all these numbers and all these facts and decision-making trees, but you have a real person sitting in front of you and you have to kind of separate yourself and be emotionally present for a person to tell them news that may be good or bad, and still kind of a rock and steadied presence for them." Raphael's description is not altogether different from Alan Guttmacher's description of delivering pregnancy testing news 1964,

> One of a physician's happy tasks is to confirm a pregnancy for a man and wife who eagerly await good news. I have enjoyed making this announcement hundreds of times. But on other occasions I have had to announce the same news to women, and their husbands, who were afraid and shocked to hear it. I have not yet devised a formula for remaining aloof from unhappiness about an unwanted pregnancy, or a way to handle these pathetic situations with the grace I feel they deserve (1964:106).

The logic of care is also identifiable in doctor-patient interactions relating to post-termination care. Some doctors reported telling their patients to do take pregnancy tests at home

after taking PlanB, just to make sure it was effective. Chantal, MD, even gives them tests to take at home, "to confirm that the abortion is complete, I'll give them pregnancy tests and be like, "Can you take this in like, two to three weeks just to confirm you're not pregnant anymore?"" Upon my surprise, she explained that she even gave patients tests in other scenarios, "[S]ometimes I give patients tests if I worry that they're not going to go to the store and get one. I'll just pass it to them and be like, "Here it is, in case you need this." If the pregnancy test is a bridge into the medical system for many women, a negative for Chantal's patients was crossing the bridge in the other direction.

Some doctors regretted times when they did not provide enough information, choice, and care to a patient. In one case, Chantal, MD, described how she placed an IUD on the date of a woman's expected period, and all of the pregnancy tests were negative and the ultrasound showed nothing. Nevertheless, two weeks later, the woman was pregnant. "[T]hat felt terrible. . . . the pregnancy test failed me -- to diagnose her pregnancy then." Now she tells patients that there is a small possibility of pregnancy during that phase of the woman's menstrual cycle -- this gives the patients more knowledge and choice about the unknowns and the risks. If a woman chooses to go forward with the IUD insertion in these cases, Chantal sends them home with pregnancy tests in these cases too.

Whereas the responsibility of choice rests with patients, the responsibility of care, and the decision to exercise it, rests in the power of doctors. Sometimes they get care, and sometimes they get whooshed into a medical system's liability concerns. Often, these two logics reinforce each other (Morris and Robinson 2017), with any risk deemed to be one too high, and informed consent going by the wayside when one percentage outweighs the other.

A logic of liability supersedes choice and care: the cost-benefit analysis of surveillance of women's reproduction

It may come as a surprise to readers that women who seek a wide variety of medical services are routinely pregnancy tested without their knowledge and informed consent. Indeed, if you are a woman of reproductive age that has ever been to a hospital or medical clinic, you have almost certainly been pregnancy tested, whether or not you were aware of it or had any chance of being pregnant. Women who go to the ER for an x-ray or CAT scan and women whose medical condition requires a particular prescription for a drug or a medical device are typically asked for urine samples upon entry, and this urine sample is pregnancy tested.

Medical facilities and providers would argue that they do not disclose pregnancy tests to patients because they do not pose any imminent risk or harms to a woman's body. Indeed, these undisclosed tests have little to do with women at all. Medical providers routinely ask women for pregnancy tests because of the risk of harm to an embryo or fetus. Chantal explained,

> [Almost every patient gets a pregnancy test. I've had patients who had, like, tubal ligation and aren't, there is no consideration for pregnancy and, like, the nurses will do a pregnancy test. Or a pregnant woman who's, like, 30 weeks pregnant will get a pregnancy test. You know, it's like -- so it's like, thoughtless, ordering a pregnancy test. And the emergency department -- any time I get a consultation, if it's a female, she's had a pregnancy test. . . . [in the case of surgery] the patients didn't even know sometimes. . .[it was] pretty unethical. . . . some surgeon is disclosing pregnancy and breaching confidentiality and big problems when surgeries are cancelled.

Erin, another doctor, explained her approach:

> So I work at a different hospital now, and we have them available in the ER. We have piles and piles and piles of pregnancy tests at all of the nursing stations. And my personal policy is, if there is a female in the ER between about the age of ten and 60, they need a pregnancy test before I'll do anything. If they're there for dental pain, I want a pregnancy test. Because if I tell them to take ibuprofen for their dental pain. . . and they take it all the way into their third trimester, I could potentially harm the baby. Even though it is unlikely.

Some medical procedures, drugs, and devices given by a doctor can pose a significant risk to an embryo or fetus, and that risk in turn is a significant risk for doctors because they can be sued for medical malpractice. The thalidomide crisis of the 1950s and 60s led to a common understanding that medical treatment of pregnant women could have severe deleterious effects on the embryo or fetus. Subsequently, there was a drastic rise in medical malpractice claims against doctors for fetal harm starting in the 80s. Doctors are structurally encouraged to do anything to protect the fetus from harm, including denying pharmaceutical treatment for women to performing cesarean sections (Morris and Robinson 2017). Erin, the doctor, explained the liability risk:

> It is still—we live in this medical-legal nightmare now. And if you have a kid who just happens to be born deformed, there is no way to know really, if the kid was just going to be born that way. What if the parent looks back and says, 'Oh this is because I had an x-ray of my foot, and I was never informed that there was the possibility that radiation could hurt my kid.' You never know, maybe the mom would win that. Maybe medical insurance would say, 'We don't want to go to court about this. We don't want to fight it. We're going to settle.' And medical

> insurance carriers can usually settle without your consent—they can decide to. And then forever, you have to report that you settled in a medical malpractice case. . . So when a woman comes to the ER—let's say they're between ten and 60, the nurse will automatically give them a cup and tell them to go pee. A lot of them before they even see them. We can't do anything until we've done a pregnancy test.

The risk to doctors of not doing a test is great. Qualitative home pregnancy testing strips, on the other hand, cost pennies.

In our era, many people believe the more information one has, the better. Personal health tracking, internet monitoring, and omnipresent video surveillance are common features of our time. When people refuse to be surveilled, the common question is, what do they have to hide? People who do not participate in testing, tracking, and monitoring -- who do not want to see, be seen, or know -- go against the logics of our time (Callon and Rabeharisoa 2004). In the case of a woman who comes to the hospital emergency room for an x-ray, it is assumed she would want a pregnancy test, and so one is performed on her almost always without her knowledge. To protect against the rare but extreme harms that could come to a fetus, and the subsequent liability risk to doctors and hospitals, all women's bodies are monitored.

The possibility of undiagnosed pregnancies is not imaginary on the part of doctors. Many doctors told me stories about teenage patients coming to get various services, the patients are given a pregnancy test, and the test surprisingly comes back positive. Chantal explained the risk, "I've also seen, like, very young women who have had surgeries and multiple procedures -- or, like, imaging procedures and then they are discovered to be pregnant. . . She was young and no one suspected." When a pregnancy test is done before the procedure, not only does it

eliminate the possibility of harm or at least provide plausible deniability, patients can also be directed then to the right services. From a medical liability insurance perspective, as well as from a health insurance perspective, it is cheaper for insurance companies to default to pregnancy testing everyone instead of dealing with the nuance of people's lives.

This blanket application of pregnancy testing surveillance, while beneficial to many people, is not so for everyone. Giving pregnancy tests to everyone who enters the ER not only creates costs of unnecessary testing that ultimately get billed to insurance, but it is also profoundly offensive to many women. Women in same-sex relationships as well as post-menopausal women reported compulsory pregnancy tested in the ER, often to their chagrin. When they go to the medical provider they cannot get coverage for the things they need, such as assistance conceiving, and then they get forced to get tested for that they don't have, adding insult to injury. Both of these instances highlight that the system is built for women having sex with men. All women are assumed to be fertile heterosexual reproducers. Medical providers also refuse to provide other emergency services without giving someone a pregnancy test first, rather than having them sign a waiver of liability. In the case of the ER and perhaps other services, the pregnancy test becomes a barrier to entry that is erected for the protection of doctors from liability.

Recall Paula who was told, you can't come in until you have a positive pregnancy test, and Mindy who was told, you can't come in for an appointment until you are eight weeks pregnant. Paula and Mindy are told to have the responsibility to monitor themselves at home, outside the surveillance of the medical system, a situation with which neither of them felt entirely comfortable. Both Paula and Mindy are white women with health insurance and advanced degrees. Meanwhile, women who are seeking services in the ER, who are less likely

to have health insurance than women who are calling their OB/GYN, are pregnancy tested, even if they don't need it or it was already done at home.

There are two things going on here. First, when it is the hospital's liability on the line, women's results are not trusted and women are tested even without their informed consent. Women's health and fetal health are not a great concern of the medical system until medical malpractice becomes a possibility. Also, built into our systems for both emergency care and obstetrics care are assumptions about the type of women who can self-monitor and the type of woman who should be monitored by a professional and the state. Women who are trying to conceive and have insurance and a provider are assumed to be responsible for their own self-monitoring to the point that they cannot get a check-up from someone else, even if they try. They are "responsibilized" citizens (Murphy 2011; see also, Lappé 2016b), expected to have an interest in the creation of the optimal child. But women in the ER, even women who are not having sex with men or who are postmenopausal, are assumed to be unable to make a determination of their own pregnancy status. When it is the hospital's liability on the line, and they can bill for more expensive services, women's results are not trusted, reliable, or actionable. When hospital liability is not on the line, and medical providers are unable to change for any additional services, women's results are trusted, reliable, and actionable.

In whose hands? Networks of choice and care

The typical pattern of an American woman today is to pregnancy test herself at home, and depending on her desires and her result, she will either go to a medical professional or to no one at all. If she wants to be pregnant and is, she will go to an OB/GYN or midwife. If she doesn't want to be pregnant but is, she will go to an OB or clinician and either continue or terminate the pregnancy. If she wants to be pregnant, but is not, she might continue trying to

conceive and eventually go to an OB/GYN who specializes in fertility treatments. The only group that does not seek medical care are women who want a negative and get a negative, commonly called "pregnancy scares," in which case women wait for their own menstrual cycle which functions as sufficient bodily knowledge to not see a doctor. Women who want a negative and get a negative may, in some instances, change their contraceptive use or change the nature of their relationships, but the testing is rarely talked about with a medical professional, when we can imagine a different world in which these women would be getting holistic care for sexual and mental health.

In all the scenarios except for "pregnancy scares," the home pregnancy test functions as a bridge or pathway to the medical system. For some women, it is even a barrier to entry to the medical system. This system works well for doctors because they only see women with conditions deemed medical and for whom doctors can bill -- pregnancy and infertility. Home pregnancy testing does not remove doctors from the pregnancy testing network, rather, it cuts the women out of the medical system who doctors do not want to see anyway.

Women go to doctors for information and for choices, as well as a medical diagnosis that comes with authority and knowledge. Women want both a confirmation of their pregnancy -- an official diagnosis -- but also to know what actions to take and how to best manage their body during that time. Women often get provided with information in a respectful manner that they may not have received fifty years ago.

The women's health movement sought for women to have autonomy, control, and knowledge of their own bodies, and instead of getting respect and care from doctors, they could take control into their own hands. The home pregnancy test in America today does not provide freedom from doctors as sought by the women's health movement, and indeed could be viewed

as a gatekeeping and sorting tool for doctors as much as for women. Women and families have a moment of privacy away from doctors, but then if they suspect that they are pregnant or infertile they go immediately to a doctor. Rather than the locus of information, control, and surveillance to women, it still resides in large part with the medical system, and women have accepted that ass the norm

The women's health movement's goal to put medical technologies into women's hands aligned with regulatory lag of the era and the technological changes of the pregnancy test to make it available to laypeople over the counter. It is useful to compare what Margaret Mead wrote in 1974 about the speculum, "men began taking over obstetrics and they invented a tool that allowed them to look inside women. You could call this progress, except that when women tried to look inside themselves, this was called practicing without a license" (Mead 1974:6). There was no unified revolt of the medical system against home pregnancy tests in the late 1970s, and women who diagnose their pregnancies (or lack thereof) at home do not consider themselves to be doing medical work or practicing medicine without a license. Diana Scully, a medical sociologist who studied the education of obstetricians and gynecologists in the early 1970s, explained, "A successful challenge to medical authority requires a redistribution of medical knowledge from the exclusive domain of certified experts to patients themselves." (1980: 252). Amazingly, even though the test is identical to the one conducted by medical professionals, it does not challenge their jurisdiction or expertise. As this analysis shows, in the case of home pregnancy tests, women are not free from medical authority at all. In most cases, aside from a moment of privacy, they generally do not want to be. The medical landscape has changed to such an extent that the women I interviewed, many of whom self-identified as feminists, did not view doctors or the medical system with blanket skepticism.

Moreover, the women's health movement did achieve great success in that it improved the medical system dramatically and many women want its services. As Sandra Morgen writes,

> Now she has the right to gather information and resources to make her own decisions about her sexuality, her reproductive life and health, even her treatment for breast cancer. Not all women want to exercise that right. But the commitment of the women's health movement to autonomy and informed consent has transformed health care in this country for women (and for men) (2002:11).

At the same time, women and their partners are extremely glad to have the home pregnancy test. When I asked interviewees to imagine a time in which they would have to go to a medical provider for a pregnancy test, and whether they would want that system back, the answer was a resounding "No." Users, nonusers, and doctors all preferred the current system to the old one. Irma explained,

> So I feel that the test does give you that kind of freedom to discover this by yourself or with whoever you want to and to disclose it or not, the information, to whoever you want to, and not having to see another person and go through -- I mean seeing a doctor is a little bit more invasive. The fact that you can do something like that in your own bathroom is pretty amazing.

Users told me that they could not live without over-the-counter pregnancy tests, medical providers said their clinics would be overrun, and both users and their partners said it would not be as special to find out this information in a medical setting with another person delivering the news. Colin, a medical researcher who used to conduct pregnancy tests when he worked in the ER, said, "That would be hugely problematic."

What women get from doctors today is *medical diagnosis, information, and choice*. What women can get at home -- by themselves (Chapter 2), with a partner (Chapter 3), or others -- is *social diagnosis* and *care*. The pressure and the power of social diagnosis, at which point a woman wants *care*, has been moved home and is now a role sometimes occupied by partners (see Chapter 3). In the case of home pregnancy tests today, what happens at home is not a medical event. What we learn from women, their partners, and doctors in tandem is that women are relying primarily on themselves for care (Chapter 2), and partners and medical providers are seen as a bonus. Partners, in many instances, are trying to care in care-ing relationships (Chapter 3). Examining Annemarie Mol's argument for a logic of care, we see that women often neither expect nor receive care from medical providers -- this, they do for themselves, or they ask for people who otherwise care about them to do this work.

To bring into relief this segregation of social diagnosis and care from medical diagnosis and choice in the case of home pregnancy testing, it is useful to look at another diagnostic test in which doctors are expected to provide a bit of both: the ultrasound. One doctor compared what it must have been like before home pregnancy tests to the current role of telling a patient about an ultrasound:

> I imagine it would have been . . . giving the doctors probably a lot more power, by, like, hearing those words. And I feel like now I have this power. . . when I am doing the first ultrasound for someone who is pregnant. Like, the way that person -- like, my patients will stare at me, you know? Like, even if I'm not looking at them, I just feel their eyes and, like, watching the facial expressions to see what I see.

What this example illustrates is that an initial diagnosis, whether social or medical, carries significant emotional and social weight and requires special attention and thoughtfulness, that is, care. In the case of doctors who are delivering an initial pregnancy diagnosis, such as doctors in the ER, they understood their role to include both medical diagnosis and care. When Mindy described her role as a mediator between a patient and a parent or a patient and a boyfriend, this social role is care.

This shows that many doctors still enjoy providing care, even though it is not necessarily expected of them. Several doctors said providing care was the most rewarding aspect of their job, and they were eager to provide it, just like Dr. Guttmacher did in the 1960s. While women are relying on themselves, their partners, and other pre-existing networks for care, they are turning to their doctors for choice.

American women today are eager for medical diagnoses, information, and choice from doctors. They want to be responsible people and make responsible informed decisions about their own lives, and to do so, this often requires going to a doctor. But typically women do not seek comfort and care from a person with medical expertise. Of course women want care, but instead of seeking it from doctors, they are getting it from themselves, partners, and others. Activists in the health movement sought autonomy, choice, respect, and care, all away from the traditional health system, because they could not get these things there. Now, women have an opportunity to provide care for themselves at home, and in many relationships, they are getting care from their partners who is eager to provide it. There is no generalized revolt against doctors -- autonomy, information, and choice are all expected, in many cases mandated by law, and are typically provided, within the traditional healthcare system.

Chapter 5: She'd better not be pregnant

"You just wonder about, like, simple tests that we do have that are under-utilized and then abused in other settings, so." Chantal, MD, 33

"[T]he new technology, especially fertility control, may be used against them to reinforce the entrenched system of exploitation." Shulamith Firestone (1970:11)

"Don't be a child! Now get on your knees and pray that God makes you worthy in some way." Mrs. Waterford, *The Handmaid's Tale* (2017, television adaptation)

"If it does not track bloody footprints across your desk, it is probably not about women." Catharine MacKinnon (1987:9)

The Story of Lee

In January 1997, Lee[23], 17, was on the varsity high school swim team at a high school in Pennsylvania. Her swim coaches, Michael and Kim, noticed that her swimming performance was lagging.[24] Showing fatigue and taking frequent bathroom breaks, they began to suspect that she was pregnant. Coach Michael approached her to discuss a possible pregnancy; Lee refused to discuss it. Coach Kim approached her, but she refused to discuss it. Lee's friends on the swim team even approached, but she told them that it was impossible that she was pregnant. Later, Lee explained, "I was sick of people like talking to me about pregnancy tests; and if I was pregnant, it's none of their business."

Several of the teammate's mothers began speaking to Coach Michael and the school guidance counselor about Lee's possible pregnancy. One of the mothers, Lynn, suggested to

[23] Though the original case and appeal are public records and parties in litigation are frequently named in academic literature, here I have changed names to shield individuals from Google hits. In the era of search, it is incumbent upon writers to stop publishing the names of victims.

[24] 225 F.3d 290 (3rd Circ. 2000); 1998 U.S. Dist. LEXIS 16439 (E.Pa. 1998).

Coach Michael that Lee should take a pregnancy test. Lynn purchased an over-the-counter pregnancy test, gave it to Coach Michael, and he reimbursed her and kept it at the school.

Coach Michael gave the test to two of Lee's teammates, Abby and Kathy, and encouraged them to get Lee to take it. They tried multiple times, but Lee refused.

Lee then wrote a letter to Coach Michael stating that he had no right to make her take a pregnancy test because she had no pregnancy symptoms and was a virgin. Kathy approached Lee again, and said that if she refused to take the test, Coach Michael would take her out of the relay. Lee eventually relented and agreed to take the test. Abby, Kathy, and another teammate, Sara, went to the locker room with Lee to take the pregnancy test. She took the test, and it appeared to be positive. The girls went to the parking lot, got money from their parents, and bought two more pregnancy tests from a store. Lee took them both, and they appeared to be negative. Around this time Coach Michael asked a volunteer coach, who was also a doctor, if a swimmer could compete while pregnant, and the doctor said yes.

Lee went home that evening and told her mother, Joan, who was quite upset about what had occurred that day. The next morning, Abby and her mother provided a fourth pregnancy test which Lee took in the locker room, and which appeared negative.

Introduction

Lee's story may be surprising but it is not unique. In a search of published court decisions, hundreds of cases revealed stories of women being pressured or forced to take or undergo pregnancy tests. Many women were minors, were being abused, or were in state-controlled institutions like prisons and border crossings. The variety of places that pregnancy tests are taken and administered is startling, and it rendered starkly clear the well-known limitation of qualitative interviewing. The women subjected to pregnancy testing in the court

cases all had one thing in common: they were in positions of subordination. These are not women who would likely volunteer their traumatic stories to a social scientist.

In Lee's case, two swimming coaches, a guidance counselor, and three teammates colluded to convince Lee to take a pregnancy test so that they could have knowledge of what was going on in her uterus. A third swimming coach acknowledged swimming was not harmful during pregnancy.[25] Lee's belief was that her body was not their business, and it is likely she feared the social consequences of a revelation of pregnancy and sexual activity. Nevertheless, her teammates' *mothers* -- not just women, but women who had most likely been pregnant themselves -- urged this surveillance upon Lee, to be exercised through the male Coach Michael in the school's locker room, while she was being observed by other female swimmers.

Arguably, Coach Michael and the mothers were trying to care for Lee when they relentlessly urged the home pregnancy test upon her. But regardless of the questionable ethics of care-cum-surveillance, we see that a social network of individuals is always waiting in the wings to monitor and control women, their bodies, and their sexuality. The home pregnancy test, in Lee's case, merely facilitated that which has existed in other eras in other guises.

This revelation about pregnancy tests is remarkable because pregnancy tests leaving doctor's offices and going home was supposed to render them "private" and give women "control," and from my interviews with users, this remains the standard narrative. Previously, women had to undergo the embarrassing experience of seeing a doctor, often male, who would test them and deliver the news of pregnancy. The opportunity to take the test at home, by oneself, appeared "liberating." At least it would appear that way if we were to believe the tenets of second wave liberal feminism and the promises of technological innovation. The concept of a

[25] Ironically, physical activity is recommended in all but some high risk pregnancies, and many women enjoy swimming because it relieves the pressure of their own body weight.

home pregnancy test, viewed from these vantage point of classical liberalism, provides nothing but benefits.

But it is naive to think that affording women the *technological* privacy rights of (some) men could ever be so easy. The *legal* privacy women have garnered -- through hard-fought battles -- is, at best, mediated by doctors, medical institutions, and various courts and other adjudicators. Cases such as *Griswold v. Connecticut* and *Roe v. Wade* are rightly celebrated, but when read with a sociological imagination, the explicit connections between women, doctors, and the state in the surveillance of women's bodies becomes more apparent.

Regarding *personal* privacy, women cohabitate with family and friends and co-exist in a larger social world in which privacy and the classical liberal values of individualism and autonomy are seen as barriers to relationships that provide mutual benefits, particularly when these values are asserted by women.[26] [27] As discussed in Chapter 3, many partners today want to participate fully in family life by taking on tasks and roles formerly reserved for women that support and care for all members of the family.

The pregnancy test became available for purchase and use by individual women outside of the immediate purview of medical professionals. But it must be placed in the larger context of women's social status and the failures of the past forty years. Liberal feminism failed to achieve equality for women -- women still frequently lack control over their own bodies and women still

[26] Privacy's applicability to women and their bodies becomes even less salient when women are pregnant. Legally, women's basic rights as humans begin to evaporate when she finds out she is pregnant. In social life, nary a pregnant woman has not received unwelcome commentary and fondling from complete strangers, let alone the unsolicited advice from romantic partners, other family, and other friends. Women's pedestal comes at a high cost, which is in this instance is her privacy, autonomy, and control over her own human body. Pregnant women, of course, do not have rights over their own bodies (de facto if not de jure), so the fiction of privacy during a state for which one has few rights is laughable.

[27] Women, of course, value the social supports and care that information sharing can provide, or perhaps it is merely a coping mechanism for the surveillance.

are second class in both the (so-called) public and private spheres. Reflecting on these failures, we see a test moving from one locus of women's subordination, the doctor's office, to other loci of women's subordination like the home, the office, the school, and elsewhere. Relocating the test promised to afford women knowledge and control of their own bodies. But the entrenched situation of women's subordination not only resisted a technological fix, but in some instances merged with the technology to invent unforeseen new ways to contribute to her subordination.

Unmarked pathways

The home pregnancy test has been marketed, and commonly understood, as an empowering tool for girls and women. Using the test, women are able to know more about their own bodies, at an earlier date, and they can take control of that information. Some studies have questioned whether the information delivered is always a good thing (Layne 2009), but the common understanding as a liberating and information-delivering tool has never been questioned.

My interviews with women, their partners, and medical providers generated stories about the use and nonuse of pregnancy testing technology reveals a portrait of pregnancy test that is far more complex than the well-known narrative. To broaden my understanding of the pregnancy test further, given that I am an attorney, I decided to search published caselaw for pregnancy tests and perhaps find other aspects of pregnancy tests that may have gone unnoticed. What I discovered was chilling.

These cases I found, of course, not randomly distributed, representative of the overall use of the pregnancy test, or generalizable, so I am treating it like archival data and using it as an opportunity to exploit variation. They reveal what is, at minimum, a tail end of the distribution of widespread pregnancy test usage, not the tale we have been sold by pharmaceutical

companies. These are cases that have ended up in court, in which parties always adjudicate disputes. They are cases in which pregnancy may have been a factor, which always -- even out of court -- involves the subjection of a woman's body to biological and social forces frequently outside of her control. They are cases which have been published and catalogued in LexisNexis, representing a miniscule fraction of all cases, and usually only those which have been appealed at least once.

These cases may be rare, but there are clear benefits to using them to supplement a qualitative project. Most importantly, using these cases is a critical tool to understand the pregnancy test in American life because it reveals uses of the test that would otherwise be hidden from view[28]. Rape victims seldom volunteer to be interviewed by sociologists, and rapists never do, though we know they are both among us. Indeed, many of my interview subjects were eager to tell me joyful stories of positive pregnancy tests associated with the birth of their children, but they had rarely discussed their troubling experiences of pregnancy scares, miscarriages, and abortions. Even further outside of a qualitative sociologist's imaginary are organizations that impose pregnancy tests, like school districts and employers. These court cases provide a valuable window into a variety of uses of home pregnancy tests that would otherwise be extremely difficult to capture.

From a legal perspective, the court decisions published in LexisNexis are largely cases that have been appealed, meaning, they are cases that are not in courts of first impression -- the facts have been litigated and now the issues are matters of law. In almost all of the cases, pregnancy tests appear in the statement of facts laid out clearly and succinctly in the court's written decision. Of course, the "facts" as laid out in these court decisions have been shaped

[28] Amazingly, these hidden cases are in public record, while the less shocking narratives about pregnancy tests gathered from interviews are shielded by many layers of rules that govern human subjects research.

almost entirely by the structures and processes of the American legal system and cannot be taken as "truth."[29] A healthy dose of skepticism is always called for in regards to any legal document. That said, court decisions are no less reliable than other sociological sources of data such as personal accounts collected in interviews, responses given in surveys, so-called big data, or other forms of archival data.

Here, the number of cases I analyze, 1,409, renders the findings more than anecdotal. Moreover, in these cases, the women were almost always the victim or plaintiff, and the pregnancy test was frequently used as evidence of abuse or surveillance. Although there were cases in which a woman or a medical provider willfully conducted the test, a significant number of the cases revealed use and control by someone other than the girl or woman herself.

Within that broader pattern, several minor patterns emerged. I found cases of state control: women in custody at the border, women seeking immigration relief from a reproductively repressive regime, and women in prison. I found cases of organizational control: women in schools and jobs that imposed the tests, and organizations that use the tests as bait so that unknowing women are subjected to someone else's religious beliefs[30]. I found cases of interpersonal control: women being forced to take the tests by sexual partners. All of these cases are alarming and disturbing, but perhaps the most vile are the many cases of interpersonal control in which an adult has raped an adolescent or teenage girl and imposed the test upon her, presumably so that he is able to continue the abuse undiscovered. Revealed by these macro-, meso-, and micro-levels of pregnancy surveillance is that the pregnancy test's mobility outside of

[29] This point is obvious to attorneys, but not always to non-attorneys.

[30] Sociological research connecting the race, gender, and class hierarchies functioning at the meso-level of organizations strengthens the case for institutionalized biases that are better understood at the macro- and micro-levels (Jones 2017a; Jones 2017b).

a doctor's office not only enables it to enter the hands of women, but also enter the control of those in positions of power.

Technology studies

The pregnancy test being used against women rather than for women is initially startling, but it begs larger questions, among them serious questions about technologies. Cultural anthropologists and race scholars have long been attuned to the idea that technologies have different meanings and uses to different groups of people. Theorists like David Hess, focusing on how "nonexperts understand, reinterpret, and pose alternatives to the same knowledge and machines," often find "a very different view of what counts as valid knowledge of successful technology" (1995, 162). The ways that users who are outside of "centers" of invention reinvent and rethink technologies has been studied under the rhetoric of "appropriating technology" (Eglash 2004), though I would argue they can be thought of as types of "hackers"—those people that circumvent design barriers to customize technology for their own ends. Rather than the typical definition of "appropriation" in the social sciences (the use of knowledge, ideas, or artifacts of those with low social capital by those with high social capital), Eglash's model of appropriation follows the use of high status technologies by those with low social capital for their own purposes (2004). In the appropriation, users might change the semantics, the use, or even the structure of a technology.

The case of pregnancy tests in some ways resembles prior studies of appropriation, but in prior studies the technology has not been appropriated to be used specifically against its initially targeted user or beneficiary. In this way, pregnancy tests have something disturbing in common with tanks on the streets of Ferguson and other health and surveillance technologies initially labelled as protective of the population they are being used to suppress or monitor. Just like

DNA technologies, which in some instances can affirm individual and collective identities, the pregnancy test, and the information it contains, can get in the hands of state, organizational, and individual actors for use against the same groups of people that it can help (Nelson 2016). Technologies in the unintended or wrong hands find ways to be used and *ab*-used (sic) in ways that inventors and designers could never have imagined.

State surveillance

The most obviously macro form of surveillance that comes up in these cases is state surveillance. Several of the cases reveal that pregnancy testing is out of the control of women when they are in the custody of the state or under the strict reproductive surveillance of the state. This may seem obvious today, but before pregnancy testing, this was not the case. Instances of direct state pregnancy surveillance included women being held at US national borders, women in the criminal justice system, and Chinese women under the one-child policy.

It is hard to immediately imagine the process by which women at a US border would be subjected to a pregnancy test. Recalling Chapter 4, medical providers and institutions who conduct diagnostic tests on women, like x-rays, universally pregnancy test women before conducting such tests. Women at US national borders who are suspected of drug smuggling can be subjected to x-rays, and so just like women who enter hospitals voluntarily for x-rays, women who are subjected to x-rays while in custody must submit to a pregnancy test first. The legal question in these cases was often whether the state violated Fourth Amendment protections, but for the purposes of this sociological examination, the interesting finding is that pregnancy tests in the hands of the state can be used as tools of surveillance against women under the medical-legal rhetoric of trying to prevent state liability for x-raying and potentially damaging a fetus.

An example of such a case is that of Katherine, who had just arrived at Chicago O'Hare from a vacation in Jamaica. Customs inspectors suspected that she was smuggling drugs, and they questioned her about her trip to Jamaica and the fact that she was traveling alone. They heard that Katherine had a hair salon and earned about $10,000 per year, which the customs officials used to call into question her ability to pay for her vacation. Customs officials initiated a pat down and said they felt a "bulge" in her crotch area. They asked if she was wearing a menstrual pad, and she said no, at which time they asked her to remove her pants and underwear so they could conduct a strip search. Upon finding nothing, they escorted her through the public terminal of O'Hare to a nearby hospital. At the hospital, she was required to sign a waiver to undergo a pregnancy test before getting an x-ray.[31] In Katherine's case, no drugs were found.

Similarly, Rose arrived at Los Angeles International Airport from Bogota and was suspected of drug smuggling, in particular, swallowing balloons filled with cocaine. She was questioned and her belongings were examined, but no drugs were found. She was detained incommunicado for somewhere between sixteen and twenty-four hours in a room with a bucket while border officials waited for her to pass a bowel movement. The officials then sought a court order to conduct a pregnancy test, an x-ray, and a rectal examination on Rose.[32] Rose was found to be not pregnant and carrying cocaine.

Another pattern of cases were those of women (and men) from China seeking asylum in the US due to the one-child policy. In the cases I found, the stories included imposed pregnancy tests by the Chinese state. These cases were on appeal, meaning, the lower court had denied their asylum for some reason (failure to prove one or more elements required, lack of credibility of a witness, etc.), and they were asking the Board of Immigration Appeals to consider the

[31] 2002 U.S. Dist. LEXIS 3831(2002)
[32] 473 US 531 (1985)

application again. In these cases, the applicant alleged the government imposed a pregnancy test either to find out if the individual was pregnant a first time or a second time against policy. In some cases, asylum was granted, in others, it was not. The legal determination about their eligibility for asylum is not the most important feature in this sociological analysis, rather, it is undisputed and notable that pregnancy tests are used to monitor women's reproduction by a major nation-state in the twenty-first century.

For instance, Li was opposed to the one-child policy since her own mother had been fined and forcibly sterilized. When Li turned 18 and received a notice to report for her first periodic pregnancy test, she ignored the notice. Five Fujian province family-planning officers came to her house, forcibly removed her to the family planning office, "and when she "refused to provide a urine sample there the staff yanked down her pants and forced or tried to force urine from her. What exactly they did and whether they succeeded in obtaining urine is unclear."[33]

Similarly Chen, after overstaying a legal visa, had two US-born children. She and her husband petitioned for asylum and withholding of removal because they feared that the Chinese authorities would punish them for having a second child, including potentially fines, imprisonment, and forced sterilization, as well as persecution for their belief and practice of Christianity. Evidence submitted by Chen and her husband included Congressional reports on their home province, Fujian, documenting forced pregnancy tests and sterilizations as well as other coercive and punitive measures.[34]

In additions to patterns of border surveillance and Chinese state surveillance, the cases showed a pattern of pregnancy surveillance in the criminal justice system. In particular, there were women who used pregnancy tests at some stage of incarceration, either upon request or in

[33] QPL v. Holder, No. 09-3511 (7th Cir. 2010)
[34] Chen et alia v. Holder (4th Circuit 2014)

the course of medical treatment. Women can be pregnant in jail or prison, of course, because women can be pregnant anywhere. Some of these women were already pregnant when they were incarcerated, and some of them became pregnant while incarcerated. In several of these cases, women were suing in Section 1983 actions alleging violation of the Eighth Amendment prohibition of cruel and unusual punishment, although again, the point here is sociological -- pregnancy tests travel out of the control of women's hands and into the hands and control of the state via the criminal justice system. Like women at the border, women who are in state custody are under far greater control of the state than those outside of these spaces, and thus, any pregnancy testing occurring in the criminal justice system is outside of the imaginary of the standard home pregnancy test narrative.

One woman, Sue, was sentenced to three months in county jail and forty-eight months probation. As part of Sue's probation, she was prohibited from "engaging in any activity which has the reasonable potential to become pregnant," and she was required to submit to regular pregnancy testing. One of these pregnancy tests found that she was pregnant, and the state sought to revoke her probation for violation of its terms. She was sentenced to six years in prison.[35]

In another case, Star was arrested for drug possession and use and "was given a pregnancy test as part of the routine booking process." The test came back positive, and the state moved to remove her parental rights to the future child, arguing that she endangered her child and was an unfit parent. She argued that she had no knowledge of the pregnancy until her booking, that she did not intentionally harm the fetus, and her relatives were available and willing to care for the baby when born. Meanwhile, she enrolled in drug abuse counseling and

[35] 277 Ill. App. 3d 74 (1995)

parenting classes, and asked the court that upon release, she would be able to reunify with her child.[36]

In other cases, women in prison were denied access to regular health care and pregnancy tests, taking the test out of their hands in a different way. Women prisoners of the District of Columbia Department of Corrections sued the city for substantial changes in the prison system "in the areas of sexual harassment, obstetrics and gynecological care, and prison programs and opportunities." This case guaranteed, among many other protections, that women prisoners would be entitled to prenatal care upon receiving a positive pregnancy test.[37]

Pregnancy tests were also used against men in the criminal justice system, when their crimes had little to nothing to do with the pregnancy. Brent, a biological father, was aware of his girlfriend's positive pregnancy test and was subsequently incarcerated for something unrelated. His girlfriend put the child up for adoption, and the adoptive parents sued to terminate his parental rights. The court terminated his failure to show a commitment to parental responsibility as soon as he knew about the pregnancy. The "father's ability to demonstrate his commitment was impeded to a far greater extent by the predictable consequences of his own criminal activity. Under these circumstances, we hold that the father did not make a showing of commitment to his parental responsibilities sufficient to entitle him to a hearing on his fitness before his parental rights could be terminated."[38] Upon knowing the results of the positive home pregnancy test, Brent was to cease all criminal activity or potentially lose all parental rights to a future child.[39]

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[36] 2002 Cal. App. Unpub. LEXIS 3129 (2002)

[37] 877 F. Supp. 634; U.S. Dist. LEXIS 21779 (1994)

[38] 169 Cal. App. 4th 672; 87 Cal. Rptr. 3d 135; 2008 Cal. App. LEXIS 2446 (2008).

[39] The negative social and psychological consequences of mass incarceration on the children of incarcerated parents are only beginning to be understood and appreciated (Wade and Ortiz 2017).

These instances of pregnancy test control by different state actors -- US customs and border officials, provincial Chinese family planning authorities, and actors within the US criminal justice system -- reveal that pregnancy tests can be applied or withheld at the discretion of the state in situations in which women's autonomy and control over their own bodies is legally subjected to state surveillance.

Organizational surveillance

In addition to state actors, there were also quasi-governmental and non-governmental organizational actors, such as schools, state agencies, and private organizations. Though these cases were in some cases quasi-state actors, they have more in common with private organizations because individuals were interacting with them primarily as students or employees rather than as citizens.

Public high schools are permitted to test students for some things under some circumstances, like testing for drug use by public high school athletes. In Lee's case, summarized earlier, a high school swimmer was forced to take a pregnancy test in the girls' locker room of her school by fellow athletes at the urging of their coach. In other cases, employers expected women to take pregnancy tests or disclose the results of the pregnancy test they took themselves. The common characteristic of these cases is that women did not volunteer to be pregnancy tested and were either pressured to take one or given one without their knowledge and consent.

Mary was called to her school's infirmary after her boyfriend and another student reported that they had both had sex with her recently and believed she was pregnant. She admitted to missing her period, but denied being pregnant. Though Mary admitted she was not physically forced to take a pregnancy test, in her deposition she said, "I felt forced to take [the

pregnancy test] so I took it. I didn't want to say 'no' because I didn't know what was going to happen if I said 'no.'" She feared she "was going to get in trouble" if she refused. The school claims that Mary was not forced to take the test and that the nurse and school officials merely solicited her feelings whether she wanted to take it or not. Mary ultimately agreed to a pregnancy test and was found to be not pregnant.[40] Like Lee the swimmer, Mary was subjected to pregnancy testing by a collusion of organizational power and individual interests. Schools are often quasi-state institutions and tend to serve minors, but other organizations conduct pregnancy tests on adult women.

LBL, a research institution operated by state and federal agencies, required employees to undergo employment examinations, and without employees' knowledge or consent, "tested their blood and urine for intimate medical conditions - namely, syphilis, sickle cell trait, and pregnancy." Present and former employees pursued several causes of action including violations of their state and federal privacy rights.[41] Interestingly, pregnancy in this case is tied to two seemingly unrelated conditions: syphilis, a sexually transmitted infection, and sickle cell trait, an inherited genetic condition common among African Americans. How and why the employer chose these three conditions to target for surveillance is not discussed in the case, but one could speculate that employers both did not want to cover the costs of medical treatment and believed the affected groups would not be in positions to fight back.

In another employment lawsuit, Alisa applied for a job with a state transportation authority that required all employees to undergo a physical examination to determine their fitness. If employees were determined to be unfit, they were expected to undergo a remedial

[40] Villanueva v. SMSI School District (2007)
[41] 145 Conn. App. 54 (2013)

fitness program. As part of the initial physical examination, the transportation authority required all women to take a pregnancy test purportedly because, if they failed, they would need to first consult a physician. Alisa sued, claiming the mandatory pregnancy test violated her right to privacy.[42] In both Alisa's case and the case of the LBL employees, employees believed it was not an employer's right to know whether or not they were pregnant and that this information fell within the scope of their privacy rights. From a sociological point of view, it is interesting not only that an employer has access to pregnancy testing technology, but also that it is in their interest to use it on women and that it is believed to be legally and socially acceptable to do so.

Other somewhat different organizational actors that came up several times in the cases were "pregnancy crisis centers" -- essentially anti-abortion counseling centers that do not provide medical services and merely seek to dissuade women from seeking an abortion. In the cases, the centers were in litigation with local authorities who sought to restrict their services in one or more ways by local ordinance, typically requiring them to post signs delineating what type of services were actually provided at the center. These centers typically use free home pregnancy tests -- to be taken at the center -- as bait to get women to come into the center. Women who would get a positive on the test would then be given anti-abortion counseling. An excerpt from one case explains how pregnancy tests were used as a lure:

> "Maryland Crisis Pregnancy Centers attract clients with their advertisements offering free pregnancy tests and "pregnancy options counseling." This is a very appealing offer for women in a vulnerable time in their lives. After providing free urine pregnancy tests (the kind available at any drug store), women are counseled with only negative information about the option of abortion. They are given

42 902 F. Supp. 533 (1995)

> wildly inaccurate information about the physical and mental health risks associated with abortion, and informed only about the joys of parenting and adoption. If a client continues to consider abortion, she is given false information about abortion service availability and encouraged to delay her decision. CPCs that offer ultrasounds and [sexually transmitted infection] testing are able to delay clients further through appointment wait times, while also gaining a sense of authority and credibility in their client's eyes as a medical service provider. However, CPCs are not medical centers. They are operated by volunteers who are, in general, poorly trained in women's reproductive health issues and well trained in anti-choice propaganda."[43]

In this case, the pregnancy test is not being used on women who are already members or employees of the organization, but rather as a means to gain their participation. What this case has in common with Lee and Mary, the students, and Alisa and LBL, the employees, is that the organization sought to use the pregnancy test and the information it could reveal for its own ends, whether or not those ends were in line with the desires of the woman who was potentially pregnant. Organizational pregnancy testing, like state pregnancy testing, was not foreseen when the pregnancy test went *in vitro* and thus became mobile outside of a doctor's office.

Interpersonal surveillance

The use of mobile pregnancy tests by state and organizational actors flies in the face of claims that the pregnancy test is a liberating tool for women that puts knowledge and control into their hands. The initial claims of the home pregnancy test were that women could be outside of the surveillance of individual male doctors, they could use it to take control of their own

[43] Greater Baltimore Center for Pregnancy Concerns v. Mayor and City Council of Baltimore (2013)

reproduction and knowledge of their body. Implicit in these claims are assumptions that a woman is able to be alone, that decisions about her body are ultimately hers to make, and that women's homes are safer spaces than a doctor's office. After reading examples of state and organizational actors using their power to apply surveillance technology on women, it may come as no surprise that individual abusers are also capable of such actions.

Indeed, the use of home pregnancy tests by sexual abusers was widespread in the cases. Of the 1409 cases that I examined, a random sample of 300 cases had 60 cases of rape or related offenses, the large majority of which had victims that were young women and girls under age 18 and as young as age 9.[44] The abusers in these cases took this purportedly liberating tool and used it on their victims so that they would be able to conceal the abuse and even continue it without discovery. Without changing a thing about the technology, they turned it into a technology of control.

The cases are terribly disturbing to read because they include details of intimate and often brutal sexual acts, typically committed by family members or close family friends, followed by the imposition of home pregnancy tests on the girl who was raped. Later, when the crimes are exposed and the men are being prosecuted for the crimes, the pregnancy test became part of the story of abuse, and in some cases, evidence that the abuse had occurred because it was proof of the sexual nature of the relationship.

Theresa testified that she was in kindergarten when her father started sexually molesting her. When she was twelve, he forced her to produce pornography using his computer and a webcam. After he insisted that she use a home pregnancy test, the rest of the family became

[44] The statistic of twenty percent is of course not intended to be generalizable, but rather, to show the widespread nature of this use of the home pregnancy test.

suspicious about his behavior, and she told them about the years of abuse she had suffered.[45] Theresa's case shows that a pregnancy test indicates sexual activity, and when insisted upon by an adult male, can be suggestive of sexual abuse.

In another case, Beth was fifteen when her mother's husband began touching her inappropriately while her mother was at work. The touching quickly escalated to forcible grabbing and various forcible sexual acts. Beth recounted dozens of such acts in detail to her mother, then later to investigators and at trial. Pregnancy tests were part of her harrowing story, excerpted here:

> Following the encounter at the base of her bed, the victim testified that the defendant became concerned that she might be pregnant because her period was late. The victim testified that the defendant gave her a pregnancy test. The defendant told her to tell her mother that she had been outside of the house when someone had come up behind her and raped her if the test revealed that she was pregnant. The victim testified that the defendant made her urinate on the pregnancy test. She testified that she accidentally dropped the test into the toilet when she finished, and the defendant responded by hitting her across the face. She testified the defendant told her he was going to go get another test, and did so. She testified that she also urinated on the second pregnancy test, and the test came back negative.
>
> She testified that after she finished the second test the defendant took her outside with him, put the pregnancy test in the pan, and lit it on fire. Afterward, the victim testified that the defendant took a shovel and buried the pregnancy test under the

[45] US v. Sanchez (2011)

> unfinished floor of a tack room inside an out-building on the family's premises. She testified that he did not explain why he buried the pregnancy test.[46]

Beth's case is an illustration that the home pregnancy test could be used as a source of information for an abuser and, even if negative, could be evidence of the abuse itself.

In another case, Sallie's adoptive father began raping her when she was fifteen while her mother was at work. Sallie recalled twenty-five unique instances at trial, aided by a calendar she had used to record the events on the days that they happened. She had asked her step-father to stop the abuse and be her "daddy" again, which he agreed, but the abuse resumed almost immediately. Pregnancy tests then enter Sallie's story and the court's decision:

> In March, 1993, because the victim was late for her period, the defendant purchased an over-the-counter pregnancy test kit. When the results were negative, the defendant celebrated with incest on the victim. Shortly after that, the victim told her guidance counselor in high school about the sex with her adoptive father.[47]

In Sallie's case, the pregnancy test was a source of information for her abuser, the information it contained was reason to continue the abuse, and a possible pregnancy may have even prompted Sallie to have the courage to report the abuse.

These examples of the interpersonal surveillance illustrate that the pregnancy test, once mobile outside of a doctor's office, could function in unforeseen ways, enabling serial rapists, particularly in familial settings, to monitor their victims fertility to hide and even continue the

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[46] 2012 Tenn. Crim. App. LEXIS 584 (2012)

[47] 1997 Tenn. Crim. App. LEXIS 1068

abuse. In a surprising turn, the pregnancy test can also function as physical evidence of a rape, like a used condom.

The politics of reproduction

When the home pregnancy test moved out of the space of the doctor's office and available over-the-counter, individual women were imagined to be the sole user of the test so that they could be "the first to know." As Chapter 2 explained, women are thankful to have this ability, particularly for its convenience, but also so they are able to have a moment by themselves or with partners, friends, or other family who will support them in the outcome.

The test's mobility outside of a doctor's office allowed it to travel, not only to women, but along other pathways of the human experience that were unforeseen by inventors, but are all too familiar to many women. Without changing the technology at all, it has been used to exercise the power of the state, of organizational actors, and of individuals over the reproductive and sexual lives of women. The tool, once imagined to be only liberating, was appropriated into a tool of coercion and surveillance, imposed or withheld depending on the interests of the actor in a position of power. Then, in some cases, the tool was transformed again, as evidence of persecution or sexual abuse in the eyes of the law, and indeed, the eyes of the state. The mobile pregnancy test creates the ability to impose a tighter regime of surveillance and control over women's reproductive and sexual bodies than would have been otherwise possible, by women or anyone else who gets their hands on it.

Conclusion: In Whose Hands?

"That element of tragedy which lies in the very fact of frequency, has not yet wrought itself into the coarse emotion of mankind; and perhaps our frames could hardly bear much of it. If we had a keen vision and feeling of all ordinary human life, it would be like hearing the grass grow and the squirrel's heartbeat, and we should die of that roar which lies on the other side of silence. As it is, the quickest of us walk about well wedded with stupidity." George Eliot (1871:198-199)

Feminist Promise

In 1973, Barbara Ehrenreich and Deirdre English published the most well-known pamphlet of the women's health movement, *Complaints and Disorders: The Sexual Politics of Sickness*. In it they argued that the medical system was a powerful tool of social control designed to keep women in a subordinate position to men through their dependence on doctors.

From Sister, *the Newspaper of the Los Angeles Women's Center (July 1973)*

After outlining how women were poorly treated by the medical system, in particular, divided by their class and racial positions, the authors urged feminists to engage with the self-help movement. "Self help, which emphasizes self-examination and self-knowledge, is an attempt to seize the technology without buying the ideology. Self help has no limits beyond those imposed by our imagination and our resources" (84). Appearing on the same page spread, a cartoon of Wonder Woman slashes her speculum at a man with an AMA badge and a stethoscope in his pocket, while around her lie several men with signs and books including "PRO LIE," "LAW," "FREUD" and indeed, "PLANNED

***ENTHOOD," presumably a priest, a psychiatrist, and an attorney. The message is clear -- move the technology into her hands and she will be free.

In the decade preceding this publication, pregnancy testing underwent at least two major transformations, from animals to test tubes, and from laboratories to lay people.

When Daniel Mishell, as a postdoctoral fellow, assisted Leif Wide and Karl Gemzell with their project in developing an *in vitro* pregnancy test, he said they all realized its potential. Upon returning to the US from Sweden, he worked to set up the test in his clinical lab with the assistance of his wife, a registered nurse.

Carol Mishell recalled, "[T]here wasn't anybody to work in Dan's lab because he had no money, [LAUGH] nobody had money, so I volunteered, or he volunteered me for that. So I worked in the lab and did tests. . . . I diluted it from one to each row, diluted it, and then we waited to see what would happen" (Personal communications, 2014). The ability to test rapidly for pregnancy, even in a clinical lab, was a major shift from the prior *in vivo* tests on rabbits and toads, which Dr. Mishell recalled were rare and expensive. He explained the sea change,

> The need for it. I mean, gosh sakes, I got inundated. Telephone calls, to see if my wife's pregnant or something. I set this up and they wanted to know when they had a little bleeding whether they were going to have a miscarriage or not. It was unbelievable. You can't understand what it was like not to have this test, then to have it -- like an ultrasound. The residents today, they don't understand how we can practice without ultrasound to see inside the pelvis but this was, it just sort of changed the diagnostic capabilities of clinicians to have a rapid, accurate pregnancy test (Personal communications, 2014).

The right to patent the technology, held by Wide and Gemzell, was sold in 1962 to Organon, a major twentieth century pharmaceutical company in Oss, Netherlands that specialized in hormones. But the pregnancy test was still far from a simple device. As Maurius Tausk, the president of Organon, described in his book on the company,

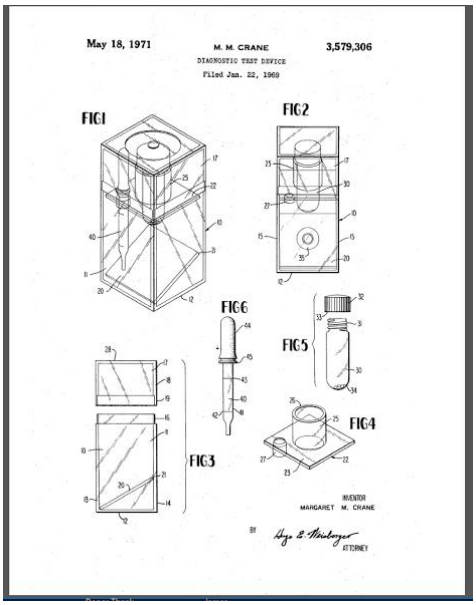
> [Leif] Wide took red blood cells from sheep and after a certain preparatory treatment covered them with a coating containing HCG. . . .When this experiment is performed with the urine of a pregnant woman, the agglutination of the red blood corpuscles is prevented because of the high concentration of HCG already excreted in the earliest stages of pregnancy. . . . as they slowly settle along the walls of the test-tube and near its hemispherical bottom, they form a dark ring.

Tausk immediately saw the marketing potential, "To make it easier to remember that the ring meant pregnancy, I suggested a slogan: 'I see a ring, girl, get your ring'" (1984:235-236).

Five years later, Meg Crane, a graphic designer freelancing for Organon in West Orange, New Jersey, walked through the laboratory as she frequently did, but this time she noticed something different.

> I went back to the laboratory for something, and I saw a row of test tubes, and they were in a rack, that was like, it had a built-in metal reflective surface at an angle underneath the test tubes. And somebody told me those were pregnancy tests, that when women left their urine with a doctor they would send them to this lab for testing. So they all had codes on them and all the rest. Looking I thought, oh my God, that looks so easy, cause all you needed was this test tube and a mirrored surface, and a woman could do that herself, it really happens so fast, I thought wow this -- And I realized, even later thinking about this, this was 1967,

and in those times. . . lots of women my age were concerned about getting pregnant because if you did you were in bad shape. So I think just seeing the possibility there that they could take the test themselves, because if you were single, you didn't want to go to a doctor and say you know, I think I might be pregnant. (Crane, personal communications, 2016.)



By 1969, Crane designed a kit that could be sold over-the-counter to women, sold her patent to Organon for $1, and began working to market the technology to consumers in Canada. As was described in Crane's patent, one object of the test was "to provide a test kit by means of which a woman can perform a test for the hormone of pregnancy within the privacy of her own home" (US Pat. No. 3,579,306).

In The Wild

Scholars in Science and Technology Studies have used the term "in the wild" to denote research that occurs out of the laboratory and in the everyday world (Hutchins 1995; Callon and Rabeharisoa 2003; Souza Leão and Eyal 2016). Consumer technologies, those devices that are available for purchase by the lay public, are often excellent cases to study because how they worked in laboratory conditions and who their intended consumers were do not always match where and how they settle (Akrich 1992; Cowan 1987). Following them around using approaches inspired by their "social life," coproduction, and actor-network theory offers us a window into not just a technology, but how power travels through social networks (Nelson 2016; Jasanoff 2004; Latour 2007; Foucault 1982).

The pregnancy test left the doctor's office and went out into the wild, where is became available to test not only a woman's relationship to her body, but available to test her relationships to other people, her society, and her nation. Rather than a static tool that took power from doctors and placed it in the hands of women, the pregnancy test functions on women's bodies differently in different contexts, relieving some pressures and adding others.

Chapter 2 analyzes how American women today are thankful to be able to conduct the test themselves before they go to a doctor. Their pregnancy intentions, closely tied to their ages and living situations, determine their experience with the tests. Rather than a predominant feeling of liberation, these "moral pioneers" (Rapp 2000) describe anxiety and shame about all aspects of the test, from purchase through disposal.

Chapter 3 explores the changing role of American partners in pregnancy determination. Partners in a significant number of cases of pregnancy testing are excluded from the process entirely. Their inclusion, for the feminist aims of equality, shared parenting, and mutual care, always seems tenuous. Partners experience pregnancy scares, abortions, and trying to conceive with their partners, albeit through their roles as supporting actors. A partner's inclusion in pregnancy testing is determined largely by whether or not a woman would receive more care with them or alone, and in some cases, whether she is trying to protect her partner's feelings.

Chapter 4 explains how home pregnancy tests function in the medical system, both to filter out the cases that doctors do not want to see and to organize the women they do want to see to appropriate providers. Though women value their moment alone, they still go to doctors for retesting and diagnosis. As Ehrenreich and English wrote in 1973,

> [T]he medical handling of pregnancy in our culture undoubtedly contributes to our anxieties about pregnancy, and anxiety can transform a minor discomfort into

> an urgent need for medical attention. The "need" is real enough at the time, but in a sense it is artificial, manufactured to enhance our dependency on the medical system. Or more commonly, our very ignorance of our bodies sometimes sends us in search of information and reassurance when no real care is necessary -- another case of manufactured dependency[48] (87)

In most cases, doctor-patient interactions are organized by a logic of choice, care having been distributed, for the most part, to partners and others outside of the medical space. In some situations, a logic of liability supersedes both choice and care.

Chapter 5 shows instances in which the pregnancy test is completely out of the control of the woman who was being tested. Cases of direct state surveillance, organizational surveillance, and individual surveillance show that the mobile tool can be used, not only by women for their own benefit, but by others who seek to use the information it contains to control their sexuality and reproduction.

By following the pregnancy test in the wild, we see not only Rose's self-managing subjects optimizing their biology to induce pregnancy, but also Robert's marginalized women who are more likely to be immigrants, poor, young, and women of color, being scrutinized under multiple gazes to ensure they are not pregnant (Rose and Novas 2005; Roberts 2009; Murphy 2011). Women no longer rely on the doctor for judgment, "the judges of normality are present everywhere" (Foucault 1977:304), but normality depends largely on who you are and what social position you occupy.

As a tool followed in the wild, the home pregnancy test can teach us a lot about human reproduction in our world. Similarly to how the CPR protocol is embedded in a life ethos and

[48] The same could be argued, not only about the medical system, but about pregnancy tests that promise early results.

"provide a contemporary means of coming to grips with death" (Timmermans 1996:786), pregnancy tests are embedded in a reproduction ethos and provide a contemporary means of coming to grips with women's subordination. Expanding our sample to include more people, not just those tests that were used by the right people at the right time who got the result they wanted, we see a bigger picture of human reproduction shaped by myriad inequalities, not the least of which is women's inequality. By studying the pregnancy test, we gain insight into where reproductive power lies, where it gets lodged, and where and how it shifts.

This test, purporting to be liberating would "give women a new power" -- but it didn't. Women still either wait for their period or go to the doctor to confirm whether they are pregnant or not. By moving the tool outside of the body and over-the-counter, it became transportable, it could be controlled by another person, an organization, or a nation-state to control a woman's body. Even though this tool exists, and in many cases, can be used by women to know more about their own bodies, the tool exists in a system that is saturated with patriarchy. As Catharine MacKinnon wrote in 1987, "Feminism has not changed the status of women,"[49] and as we can see from this research, neither has the home pregnancy test.

Reproduction and Biopower

Scholars interested in the subjection of women as a class have turned their attention to the many meso-level forms that it takes -- in various locales, to different groups of women differently, and even in the application of state policy. Yet, the broader debate about why women are the less privileged class worldwide remains undertheorized. Meanwhile, feminist theory has turned its attention to gender theory and the production and reproduction of gender.

[49] MacKinnon, Catharine A. Feminism Unmodified (1987: 2)

Gender research is critical to understanding women's subordinate status, but gender is not the only reason women are subordinate, nor is our reproductive capacity. Theorizing women's bodies has been all but killed by postmodernism, despite noble attempts to resurrect it like Butler's *Bodies That Matter* (1993). Nevertheless, women's sexual and reproductive bodies continue to be subjected to surveillance and abuse, and women's social movements to support and nourish our physical bodies live on in spaces that scholarship has left behind.

The bodies that matter to the reproduction of human society are women's, that is, society depends on their reproductive work to exist while people are constantly dying. The entire population of humans alive today will be wiped out within the next century or so, and for humanity to continue to exist, the entire population of humans must be reproduced. To date, this has only occurred in uteruses in people who usually identify as women, postmodernist qualms notwithstanding. As Shulamith Firestone wrote in 1970, "These biological contingencies of the human family cannot be covered over with anthropological sophistries" (9).

More pressing than the life and death of humanity, the economy requires the constant supply of humans for production and consumption. Through this lens, pregnancy tests are tools of subjectification that ensures for our markets the creation of future market actors: agents and actors that furnace its functions as its architects, producers, and consumers, i.e., *homo economicus*[50]. These devices assist in the making of self-policing reproductive subjects[51] who

[50] Though not discussing women's reproductive labour-power specifically, Marx wrote in *Capital*, "The owner of the labor-power is mortal. If then his appearance in the market is to be continuous, and the continuous conversion of money into capital assumes this, the seller of labour-power must perpetuate himself, "in the way that every living individual perpetuates himself, by procreation." The labor-power withdrawn from the market by wear and tear and death, must be continually replaced by, at the very least, an equal amount of fresh labour-power" (Marx [1863-1883] 1978: 340).

[51] Here I borrow Foucault's definition of subject, "This form of power applies itself to immediate everyday life which categorizes the individual, marks him by his own individuality, attaches him to his own identity, imposes a law of truth on him which he must recognize and which others have to recognize in him. It is a form of power which makes individuals subjects. There are two meanings of the word "subject": subject to someone else by control and

become a permanent productive class, that is, the reproductive class, and the control of others who are excluded from it.

With the growth of research about women's bodies, it is time to allow it back into social theory. Scholars studying the politics of reproduction and reproductive governance at the macro level, like Rayna Rapp, Dorothy Roberts, and Susan Greenhalgh, must be met with equally rigorous scholarship and theorizing at the micro level, understanding women's and men's personal and intimate reproductive lives in all aspects. We must understand how technologies that act on individual identities facilitate a compliance with the normative order on the individual level, working our bodies and our minds into systemic compliance with our biology, society, and nation. In other words, we must ask -- and answer -- what feminist scholars have been asking for a generation, why do women comply, or as others have argued, why do women "ever do anything but."[52]

Many women recall early pregnancy testing, in their own home, with excitement and even positive overtones. This observation is important not only because it validates many women's real and lived experiences of pregnancy testing, but also because it highlights what is counter-intuitive about the nature of human subjection -- it often includes combinations of legitimacy, compliance, and violence, all undergirded by a narrative that there is no possible alternative, as well as resistance.[53] The home pregnancy test, while obviously celebrated by many for its convenience and moment of privacy, is also a tool that distributes the visibility of

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dependence; and tied to his own identity by a conscience or self-knowledge. Both meanings suggest a form of power which subjugates and makes subject to." Foucault, *Beyond Structuralism and Hermeneutics*, (1982:781).

[52] Gerda Lerner, "Once we abandon the concept of women as historical victims, acted upon by violent men, inexplicable "forces," and societal institutions, we must explain the central puzzle--women's participation in the construction of the system that subordinates her." Gerda Lerner, *The Creation of Patriarchy* (YEAR:36), but see, Catharine MacKinnon, Feminism Unmodified (1987:61).

[53] See, e.g., Weber [1922] 1978; Eichmann 1961:117; Arendt [1963] 2006; Firestone 1970:3; MacKinnon 1987; Tilly 1991:594.

the complex subjection of women and their sexual and reproductive bodies. The technology of pregnancy tests continues to change, and just like other tests, it is becoming more molecularized and more public. It is critical that we remain alert to what's at stake in the use of these increasingly informative and invasive technologies.

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