

IS THE EMBODIED PREGNANCY STILL RELEVANT? UNCERTAINTY,
EMBODIMENT AND TECHNOLOGY IN 21ST-CENTURY PREGNANCY

by

Catherine Imperatore
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Committee:

Frank D. Jacobs

Director

Shannon W. Carey

A. J. Ben

A. J. Ben

Department Chairperson

Jamie S. Cooper

Dean, College of Humanities
and Social Sciences

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Catherine Imperatore
Bachelor of Arts
Virginia Polytechnic Institute and State University, 2003

Director: Mark D. Jacobs, Professor
Sociology

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LIST OF ABBREVIATIONS

In-vitro fertilization..... IVF
What to Expect When You're Expecting..... *WTE*

ABSTRACT

IS THE EMBODIED PREGNANCY STILL RELEVANT? UNCERTAINTY,
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Catherine Imperatore, MA

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Thesis Director: Dr. Mark D. Jacobs

Mothering begins at conception and is considered essential to womanhood, while the physical challenges and joys of pregnancy are perceived as natural and inevitable. How well this fits with a woman's lived experience of conception and pregnancy changes her relationship to uncertainty and risk, technical and embodied expertise, and reflexivity and resistance during pregnancy. Despite the focus in sociological research on technology that separates the fetus from the mother, I found from my research strong contra-indications against a totalizing disembodiment and a continuing attention paid to older uncertainties that have characterized pregnancy historically. Embodiment and technology exist alongside each other in modern pregnancy, and mutually reinforce the expectation of maternal-fetal bonding and the need for responsibly managing uncertainty. Pregnancy as a lived physical state continues to be central to the notion of mothering and womanhood.

INTRODUCTION

Mothering begins at conception and is considered essential to womanhood, while the physical challenges and joys of pregnancy are perceived as natural and inevitable. How well this fits with a woman's lived experience of conception and pregnancy changes her relationship to uncertainty and risk, technical and embodied expertise, and reflexivity and resistance during pregnancy. Despite the focus in sociological research on technology that separates the fetus from the mother, I found from my research strong contra-indications against a totalizing disembodiment and a continuing attention paid to older uncertainties that have characterized pregnancy historically.

Recent research on pregnancy has focused on the prevalence of risk assessment and reflexivity in pregnancy discourse and in women's lived experiences, within the context of the risk society (Armstrong 2003; Lupton 1999b; Rothman 2014; Mitchell 2010; Markens, Browner and Press 1997; Markens, Browner and Press 1999; Burton-Jeangros 2011; Burton-Jeangros et al. 2013; Searle 1996; Possamai-Inesedy 2005; Possamai-Inesedy 2006; Weir 2006; Hallgrimsdottir and Benner 2013; McDonald, Amir and Davey 2011; Ivry 2007; Gardner 1994; Sevón 2007). In particular, researchers have examined prenatal testing, reproductive technologies and other 20th-century scientific developments in relation to risk and the fetus's disembodiment from the pregnant mother.

With the attention on new reproductive technologies and the risks they embody, both pregnancy discourse and research about pregnancy risk rarely focus on the generalized uncertainty of pregnancy or on obscured risks, which are rooted in the embodied experience of pregnancy, and differentiate these from defined risks typically created or identified by technology. While technological risks are certainly a feature of modern pregnancy, in focusing on these to the exclusion of more familiar embodied risks, researchers and theorists may overlook these embodied concerns of pregnant women and how embodied and technological aspects of pregnancy interact with and mutually reinforce each other.

Through my interviews with seven first- and second-time mothers in the Washington, DC area (as well as one mother of five); my analysis of online pregnancy discussion boards TheBump.com and BabyCenter.com; and my reading of *What to Expect When You're Expecting*, other modern and historical pregnancy manuals and pregnancy blogs, I demonstrate how the overall state of uncertainty characteristic of pregnancy as well as obscured risks, founded in embodiment, are as critical to understanding pregnancy as more modern, technological and defined risks. I also investigate two differing orientations toward pregnancy, founded in differing relationships to the uncertainty of pregnancy, defined risks, and experiential and medical expertise, as well as the role the embodiment of pregnancy plays in strategies of reflexive risk assessment.

Although a pregnant woman's relative state of embodiment alters her relationship to uncertainty and risk, embodied uncertainty is still fundamental to the experience of

pregnancy, despite the prevalence of reproductive and surveillance technologies.

Embodiment and technology currently exist alongside each other in modern pregnancy, and mutually reinforce the expectation of maternal-fetal bonding and the need for responsibly managing uncertainty. Pregnancy as a lived physical state continues to be central to the notion of mothering and womanhood.

PREGNANCY, RISK AND EMBODIMENT: THE LITERATURE

Risk Society

Ulrich Beck (1992) and Anthony Giddens (1990, 1991, 1994) are preeminent among theorists who have proposed that modernity is characterized by a risk society, in which individuals and institutions constantly assess risk reflexively within a paradigm of scientific expertise that is both accepted and challenged.

The risk conscious, according to Beck, have a complicated relationship with scientific expertise. They are “both critical and credulous of science. A solid background of faith in science is part of the paradoxical basic equipment of the critique of modernization” (Beck 1992:72). Giddens also addresses the proliferation of abstract expert systems and technical knowledge as well as the sometimes ambiguous trust relationship between the experts and the laity. Through reflexivity, “an indefinite number of spaces between lay belief and practice and the sphere of abstract systems are opened up” (Giddens 1991:139). Class is a determinant in one’s comfort with assessing risk and ability to access resources to avoid or mitigate risk (Beck 1992; Lupton 2012). The exercise of reflexivity opens the door to treating the self as a project, which can be shaped actively, even daily, through expertise accessed and subsequent decisions (Giddens 1991).

Taking a view that not only is knowledge about risk a social phenomenon but also that risk itself is culturally constructed are Douglas and Wildavsky (1982) and Fox

(1999). The latter asserts that hazards, which are the undesirable outcomes to which risks are presumed to lead, are defined retroactively by moral judgments made about perceived risky behaviors. This highlights the underlying moral dimension of risk assessment, a key element in pregnancy discourse.

As Miller (2007) points out, reflexivity and risk consciousness are particularly salient at key moments, such as pregnancy. Pregnant women have demonstrated a high degree of conscious risk assessment, reflexively seeking out and comparing sources of expertise, although class again plays a role (Lupton 2012). Risk messages are also shared and absorbed socially. For instance, many lay people vaguely know that something is considered risky but do not know the exact data to support this. They rely on expert systems to be the keepers of this knowledge, while acting within a system of “shared assumptions, values and practices” (Lash as cited in Lupton and Tulloch 2002:319). The women I interviewed demonstrated both more and less conscious strategies for risk assessment.

Risk and Uncertainty

An unresolved point in the risk discourse, and one that I will address, is the difference—if one exists—between risk and uncertainty. While Giddens often use these terms interchangeably, the simple definition, as used in game theory, economics and genetics (based on Frank Knight’s definition from the 1920s), is that risk is when one does not know an individual outcome but does know the distribution of possible outcomes, while uncertainty is when one knows neither the individual outcome nor the likelihood of an outcome. Others refer to risk as a subset of uncertainty that is calculable,

and to uncertainty as the type of dangers and unknowns in earlier phases of history, pre-dating the risk society (Zinn 2008 as cited in Burton-Jeangros et al. 2013; Bernstein 1996 as cited in Burton-Jeangros et al. 2013). Boholm argues for a continuum of uncertainty from “a bounded set of possible consequences” on one end to “an open-ended field of unpredicted possibilities” on the other (2003:167).

In addition, a key difference between the usage of the terms risk and uncertainty in lay discourse is their differing connotations. Beck called risks accumulated “bads,” in comparison to the “goods” accumulated in class society (the state prior to the risk society). Uncertainty wears a more positive aspect than risk, potentially resulting in positive outcomes, while ideas of “good risk” are rarely invoked (Boholm 2003; Lupton 1999).

This thesis will take the position that uncertainty is a broad concept, encompassing specific risks and hazards, and that pregnancy is characterized by a state of uncertainty, rooted in questions of embodiment. Lupton relates the questions that a pregnant woman may ask herself about her relationship to her fetus: “Where do I, the woman, begin, and it, the fetus, end? How much control do I have (if any) over this fetus as it grows inside my body? How much does it have over me?” (1999:78). These questions, and the uncertainty they speak to, are at the basis of the embodied uncertainty of pregnancy.

Prenatal Management and Discourse Over Time

While it has reached new levels and is now especially reliant on medical expertise, pregnancy management and the uncertainty to which such oversight responds

have been a feature of pregnancy historically and across cultures (Oakley 1984; Hallgrimsdottir and Benner 2013; Franklin 1995; Helman as cited in McDonald et al. 2011; Davis-Floyd and Georges 1996; Markens et al. 1997). Guidelines for pregnancy management have been historically shared among female peers, and women have also gone to midwives, doctors or healers for help diagnosing pregnancy or to cope with symptoms, illness or hemorrhaging. They also have had access, with growing rates of literacy, to pregnancy manuals increasingly written for the laywoman (Weiss-Amer 1993; Eccles 1982). The intensity of pregnancy oversight and who is responsible for directing changes in how pregnancy is managed has moved from a community of women peers to a male-driven medical system, although recently more women-centric models of care have re-emerged, but pregnancy management is not new (Leavitt 1986).

Guidelines as to diet, exercise, bathing, sexual intercourse, excitements and more during pregnancy have been dispensed by an authority in text format throughout the ages, from ancient sources to medieval manuals for midwives, to the proliferation of lay manuals in the late 19th and early 20th centuries, to today's pregnancy bible, *What to Expect When You're Expecting*. The information in these manuals is reckoned to help control the uncertainty of pregnancy and to encourage the woman to engage in anticipatory socialization for this new period of her life (Deutsch et al. 1988).

Medieval texts on pregnancy, taking lessons from ancient Hindu, Greco-Roman and Arabic sources, described management for mother and child through diet, ventilation, light exercise, rest and moderating the pregnant woman's feelings and passions, similar to manuals from Tudor and Stuart England (Weiss-Amer 1993; Eccles 1982). North

American manuals from the 1880s to 1920s also focused on food and digestion, exercise and rest, bathing, appropriate relations with one's husband and mental regulation (Ballantyne 1914; Bishop 1910; Napheys 1890; Scovil 1896; Chavasse 1882; Johnson 1889; Slemons 1919).

Over time, pregnancy resources have increasingly communicated about risks by employing what Gardner (1994) terms a "rhetoric of fetal endangerment" that makes claims about causality, emphasizing how small actions can have magnified effects. In doing so, they establish pregnancy as the first phase in a lifetime of intensive mothering. The link between the growing child and the mother was implied in earlier pregnancy works but became more explicit in Victorian texts, primarily in relationship to "impressions" that the mother can make on the child; for instance, if she is frightened during pregnancy or craves a particular food that can then be blamed, in retrospect, for a marking on the child (craving strawberries leading to a strawberry birth mark).

The primacy of the physical link between mother and fetus has reached its apex with the most popular and best-selling pregnancy book of all time, *What to Expect When You're Expecting* (hereafter *WTE*, Murkoff and Mazel 2008). It tops the bestseller list in the paperback advice category, is one of USA Today's 25 most influential books of the past 25 years and is, according to its description, read by more than 90 percent of pregnant women who read a pregnancy book.

The book's copious recommendations on diet and lifestyle rely on the physical mother-fetal bond and the ideal mother's sense of responsibility for her baby. Murkoff and Mazel repeatedly emphasize how the pregnant woman's actions directly affect her

fetus; for instance, how alcohol enters the fetal bloodstream and that “when you smoke, your fetus is confined in a smoke-filled womb” (2008:72). While it is extremely popular, many women deliberately do not turn to this book, including several women with whom I spoke, owing to its reputation as being “scary” by focusing on complications and problematizing almost any food or activity that you could imagine as potentially risky for the fetus.

Despite certain specific recommendations and restrictions that are (sometimes comically and sometimes horrifyingly) no longer considered relevant in contemporary pregnancy discourse, including prohibitions against all sexual activity or riding in a carriage, pregnancy manuals of the past read in a very familiar way to any pregnant woman or woman preparing to conceive. They touch on similar topics of diet, exercise and symptoms in an effort to cope with the uncertainty of pregnancy and, especially in later centuries, employ similar language that speaks to the maternal-fetal link: “the influence which she exerts upon the future physical and, we may add, moral and intellectual condition of her offspring ... is of the greatest importance” (Johnson 1889:50).

Embodiment, Medicalization and Surveillance Technologies

My perspective on the relative consistency of pregnancy management over time is not to deny that pregnancy has become increasingly medicalized. The basis of the medicalization of pregnancy is “a professional claim to know what is going on inside the uterus better than the mother herself” (Oakley 1984:27). For instance, the authors of *WTE* recommend that readers always take questions or concerns to their prenatal practitioners.

This privileges medical expertise over a woman's embodied expertise, aided by a trust in the optic knowledge provided by ultrasound over haptic or embodied knowledge (Root and Browner 2001; Hockey and Draper 2005; Duden 1993).

As part of the medicalized discourse of pregnancy, modern technology for monitoring and surveilling pregnancy has been said to facilitate the disembodiment of the fetus from the mother (Martin 1987; Saetnan 2000; Mitchell and Georges 1998; Petchesky 1987; Becker 2000). Feminist theorists, building on Marxist thought, contend that pregnancy has been turned into a form of production in a highly medicalized society, in which women as low-skilled workers are overseen by medical managers in an increasingly rationalized process (Martin 1987; Rothman 2000 as cited in Taylor 2011). Petchesky (1987) emphasizes how technologies, primarily ultrasound, that allow one to visualize the fetus also construct it as an independent entity, disconnected from the mother, with its own subjectivity.

However, many women respond positively to prenatal technologies and other medical interventions, although their use of and reactions to screening vary by race, ethnicity, class, religiosity and other factors (Taylor 2000; Rapp 1998). Most of the women I interviewed used and placed some value on screening, while some also questioned its efficacy.

Embodied knowledge persists alongside biomedical knowledge in women's lived experiences of pregnancy (Root and Browner 2001; Lowe et al. 2009; Hockey and Draper 2005). The women I spoke to, as well as women using online pregnancy

communities, take cues from their own bodies and from other women's experiential knowledge, in addition to medical expertise.

Their experiences illustrate how embodiment is dynamic, interactionist and gendered (Neiterman 2012; Bailey 2001). In pregnancy, embodiment is particularly dynamic as the woman's body and her growing fetus go through numerous changes, contributing to new behaviors on her part in relation to her physical body and her baby, identity work as she navigates her new role and a plethora of reactions from others (Bailey 2001; Longhurst 2008; Thomson et al. 2011; Longhurst 2005 as cited in Neiterman 2012; Warren and Brewis 2004 as cited in Neiterman 2012). Indeed, it is difficult to see how a woman's embodied experience of pregnancy can ever be fully supplanted, for the woman physically experiences her pregnancy, from symptoms of morning sickness, bloating and hormonal fluctuations to her expanding belly and the sensations of the baby moving inside her. In contrast, any medical practitioner sees only a slice of the pregnancy.

Embodiment and technology mutually reinforce the expectation of maternal-fetal bonding and of responsibly managing uncertainty. The relationship between embodied and technological expertise is exemplified by the maternal-fetal link, which is considered so sensitive that women today are urged to, and often do, extensively gather information from experts, including doctors and pregnancy guides, as to the safest maternal behavior for the health of the fetus (Rothman 1986; Ivry 2007; Markens et al. 1997; McDonald et al. 2011). This perceived maternal-fetal link puts tremendous control into the hands of the

mother and her management of risk to ensure a healthy baby, but also subjects her to a medicalized scrutiny.

Gender, Intensive Mothering and Pregnancy as Master Status

Several researchers in recent years have described modern mothering as a particularly intensive activity focused on risk management and encouraged by the risk society (Hays 1996; Knaak 2010; Lee 2008).

Intensive mothering is also just that, mothering, rather than parenting: “Mothers know they do more of the child care, they know they do more of the worrying, and they know they are more competent than men when it comes to raising children. But many are not entirely sure why this is so” (Hays 1996:107). One’s identity as a mother and the practice of intensive mothering begin before a child is born through risk management during pregnancy and the related mental labor of processing information, planning and worrying, as well as the work of attending prenatal appointments (Armstrong 2003; Lupton 1999b; Rothman 2014; Mitchell 2010; Markens et al. 1997; Markens et al. 1999; Burton-Jeangros 2011; Burton-Jeangros et al. 2013; Searle 1996; Possamai-Inesedy 2005; Possamai-Inesedy 2006; Weir 2006; Hallgrimsdottir and Benner 2013; McDonald et al. 2011; Ivry 2007; Gardner 1994; Sevón 2007; Walzer 1996; DeVault 1991).

This speaks to an ongoing gender essentialism that says women are suited by nature for nurturing. Pregnancy is often used to support arguments of gender essentialism. It is probably the most potent display of one’s biological sex allowed in most public settings. How this interacts with one’s gender identity and body concept can contribute to a variety of responses on the part of the pregnant woman and others.

Individuals may feel more womanly while pregnant, or less sexual, or permitted to take up more space, or afraid of the potential leakiness of their bodies in a public space (Bailey 2001). During pregnancy, women (and those with non-binary gender identities and female reproductive systems) may “reflect or express” gender in various ways, but their pregnant bodies decisively cast them in the sex category of woman (West and Zimmerman 1987:127).

Armstrong (2003) describes how pregnancy becomes a “master status,” as theorized by Hughes and Goffman, or the most salient part of a woman’s social identity. This can easily be observed anytime a pregnant woman is in a social situation; the conversation revolves around her pregnancy, strangers may come up and touch her belly without invitation and her behavior is scrutinized. This scrutiny—and the encouragement from family and friends to be at her healthiest for the sake of the baby—deconstructs women’s bodies and holds them morally responsible for the health of their fetuses.

Gender, Risk and Social Control

Women are perceived as society’s risk managers. Their responsibility for assessing and addressing risk is apparent not only in pregnancy and motherhood, but also in the way women are expected to police their dress and their behavior in order to check male aggression. It is also present in women’s approaches to geographic mobility and negotiating pay raises (Uteng and Cresswell 2008; Leibbrandt and List 2012).

As Phadke theorizes in relation to women in public spaces, women lack the “right to take risks” (2007:1510). Women’s bodies are expected to move quietly through space, with relative passivity, and to remain uncontaminated for the benefit of the men in their

lives (Uteng and Cresswell 2008; Phadke 2007). This passivity is apparent in ways that sexual intercourse and fertilization are described, with narratives of the highly mobile sperm swimming down to the receptive egg. It can also be challenged during pregnancy, when women variously express pleasure or discomfort as their growing bodies take up more space (Bailey 2001).

Pregnancy is a time when women are expected to be particularly vigilant about risk and responsive to expert assessment of risk. With the widely disseminated pregnancy risk discourse and its moral implications, scrutiny and judgment is something that pregnant women anticipate and often grow used to responding to or ignoring. They negotiate haptic knowledge, biomedical expertise and the judgment of medical practitioners, loved ones and strangers in relatively routine interactions.

More extremely, scrutiny of the pregnant body, aided by surveillance technology that enables the construction of the fetus as a separate entity, has contributed to the U.S. personhood movement. The personhood movement seeks to have embryos and fetuses legally defined as persons, which could have far-reaching consequences for women's access to contraception and abortion, as well as for the legal rights of pregnant women. Paltrow and Flavin (2013) report on more than 400 cases from 1973 to 2005 in which pregnancy was an important factor in attempted or actual incarceration (and the researchers believe this is an undercount), as well as more than 200 legal cases since 2005 that explicitly reference fetal rights.

The personhood movement is an extreme example of gendered differences in the subjectivity of the body, in which the male body is constructed as inviolate while

women's bodies, particularly women of color and women from lower socioeconomic strata, are perceived to belong to their fetuses and to be subject to external control (Bordo 2003). This denial of women's subjectivity and privileging of fetal subjectivity is facilitated by technological responses to the uncertainty characteristic of embodied pregnancy.

UNCERTAINTY, RISK AND EMBODIMENT: ANALYSIS OF INTERVIEWS AND DISCUSSION BOARDS

Through my interviews with seven first- and second-time middle-class mothers in the Washington, DC area; my analysis of online pregnancy discussion boards TheBump.com and BabyCenter.com; and my reading of *What to Expect When You're Expecting*, other modern and historical pregnancy manuals, I differentiate between obscured risks in pregnancy, rooted in embodiment, and defined risks typically created or identified by technology. I also illustrate two different orientations toward pregnancy, founded in differing relationships to the uncertainty of pregnancy, defined risks, and embodied and medical expertise.

Sample and Methods

I interviewed 10 women in the greater Washington, DC area between December 2013 and June 2014, but have focused this analysis on seven middle-class, first- or second-time mothers. The characteristics of my interviewees and the sampling techniques used are included in Appendix A, but it is important to note that the women I interviewed were primarily members of the professional middle class, and the way they interacted with expert systems and exercised reflexivity fit with a typically middle-class comfort with knowledge and expertise. My analysis used open and axial coding in a grounded theory approach, employing inductive and deductive reasoning.

In addition, I selectively applied codes to analyzing discourse from online pregnancy discussion boards at BabyCenter.com and TheBump.com. Like my interviewees, women who typically use these sources are middle class or affluent. More information is included in Appendix B.

My very small sample is missing many viewpoints: working-class and poor mothers, Latina mothers, LGBT mothers, transgender mothers. In addition, it is worthwhile to note that women who felt they were not good mothers, or had significant issues with pregnancy and motherhood, were unlikely to be willing to participate in my research. Therefore, a number of voices are not included.

Uncertainty: Fundamental Questions in a New Context

As McClive (2002) points out, pregnancy in the past was a state of uncertainty from conception straight through to childbirth. Today, uncertainty remains integral to pregnancy, despite the fact that medical practitioners underplay this innate uncertainty (Armstrong 2003; McClive 2002; Pilnick and Zayts 2014). Many questions that contemporary pregnant women ask would be recognizable to women of the past: Am I pregnant? Will my child be born healthy? What sex is my child? When will I go into labor and how much pain will it cause? What will my child be like as a person?

Some of the questions women ask can now be partially answered by technology, such as sex (which can often but not always be determined through ultrasound) or the timing of labor (which can be scheduled and induced). However, these predictions and plans can and sometimes do go awry.

Technology can also increase uncertainty through “probabilistic, ambiguous or uninterpretable results” (Teman, Ivry and Bernhardt 2011:70). One of the most common questions asked on the TheBump.com discussion board dedicated to first trimester issues, for instance, is “am I pregnant?” Typically, the poster will upload photos of a pregnancy test with a faint line and ask for help in interpreting the image.

Answers to the question “will I have a healthy child?” through prenatal testing are also fraught with ambiguity. Even with the most accurate non-invasive prenatal screening method available, a “positive” result only predicts a 1/100 to 1/300 chance of fetal abnormality (American Pregnancy Association N.d.). Women again turn to discussion boards for help interpreting sonograms and other tests, as they try to understand what the probabilities mean to their individual situations and question whether to pursue additional testing.

In addition, a hazard of pregnancy on which science has not been able to shed much light is miscarriage. As the *WTE* authors inform readers, miscarriage is a mysterious yet common event. The exact cause is usually uncertain, and it typically cannot be prevented. The symptoms of miscarriage can be similar to other early pregnancy or menstrual symptoms, further clouding the issue. At such moments, uncertainty dominates and science can do little to explain or help.

What Sex?: Uncertainty, Prediction and Joy

Uncertainty is not only about fear, but also opens up possibilities for joy. Speculating about and imagining the future child, including its sex and gender identity, is part of the fun of pregnancy.

In addition, pregnancy is full of moments in which the power of the oracle and older methods of prediction may come to the forefront (Giddens 1991). These instances are more likely to occur when the calculation of probabilities is difficult or impossible or leads to a 50/50 probability. For instance, people have long sought to predict the sex of a coming baby; if you hang a gold ring by a thread over your belly, it will swing differently if you're carrying a boy or girl, etc. Technology can eventually tell many mothers about their fetus's sex, but prediction is still a process in which women and others engage during the early months of pregnancy.

Several women I interviewed shared with me others' predictions and their own embodied predictions as to the sex of their babies. Walmart cashiers clustered around Colleen and told her "it's a boy because your belly button's poked out and you're showing in the front." Katherine thought she was having a girl the second time because she experienced very different symptoms than with her son, while Jenny "just knew," she told me, the sex of each of her babies. Many of the women I interviewed reveled in their own guesswork and appreciated the joy that others felt in making predictions. On discussion boards, women sometimes had fun with predicting sex as well, using a lighthearted tone to wonder if heartburn during pregnancy was a sign of the baby's sex.

Obscured and Defined Risks

I theorize that within the overall uncertainty of pregnancy, specific instances of potential risks lie on a continuum, similar to Boholm's, from a complete unknown and unknowable, or obscured risk, to a defined risk. Few, if any, activities actually reside squarely at these poles, but float along the continuum.

Toward the obscured risk pole, there is little knowledge of probabilities and the relationship between causal factors and hazards is unclear and can only be guessed at afterwards. In addition, obscured risks are often rooted in the embodied experience of pregnancy and tend to be framed similarly in both historical and contemporary accounts of pregnancy.

Toward the defined risk pole, there is presumed (if not actual) knowledge in scientific discourse of causal factors and probabilities, and risks are disseminated beforehand with reference to those probabilities (although the precise knowledge may be unknown to lay people). Additionally, defined risks are more often technologically derived and typically originate from sources external to the pregnant woman.

I also theorize that differentiating between obscured risks, rooted in embodiment, and defined risks typically created or identified by technology (what Giddens terms “manufactured uncertainty”) is key to understanding pregnancy because doing so exposes how “natural” or embodied aspects of pregnancy co-exist with more technological aspects. Research about pregnancy risk and popular pregnancy discourse rarely distinguish between the two, although one theorist that does so is Rothman (2014).

Physical Activity: An Obscured Risk

The women I interviewed all described, within the larger uncertainty that is pregnancy, examples of risks that fall under the heading of obscured risk. These obscured risks tend to have murky causal relationships to hazards and are intimately related to the woman’s body and the physicality of pregnancy, rather than originating from external factors. They also tend to be familiar to pregnancy across time.

A particularly important obscured risk in pregnancy discourse is physical activity. The appropriate amount and type of physical activity for pregnant women and its relationship to miscarriage has long been a topic for pregnancy management, and it is still included in modern pregnancy discourse. However, discursive guidelines for physical activity are vague and often contradictory (Root and Browner 2001). Some exercise is considered beneficial, but recommendations on exercise often read like “Goldilocks and the Three Bears,” in which there is a vague “just right” between too much and not enough exercise: “although long walks are injurious, she ought not to run into an opposite extreme” (Chavasse 1882:127). A century later, the *WTE* authors give similar recommendations of moderation in physical activity.

A lack of probabilities about the risk of physical activities and the unclear causal link between physical activity and miscarriage makes it an example of an obscured risk. While the *WTE* authors explicitly state that “miscarriage is not caused by exercise, sex, working hard, lifting heavy objects, ... a fall,” they also tell readers that a history of miscarriage is one of the risk factors that might lead a medical practitioner to restrict her pregnancy exercise regime (Murkoff and Mazel 2008:538). This echoes Ballantyne (1914), from a century earlier:

the violent kinds [of exercise], such as cycling, dancing and such games as tennis and hockey, are obviously unsuitable ... and are, indeed, dangerous in the early months by reason of the tendency they have to produce abortion [meaning miscarriage, or spontaneous abortion]... If the woman has in a previous pregnancy had a miscarriage, everything beyond the gentlest exercise is a danger (P. 195).

Exercise was related to a generalized anxiety about the riskiness of physical activities during pregnancy for the women I interviewed. Sophia, a triathlete, said “they

told me I couldn't run" with her twins, a prohibition she accepted without comment. Samantha's trainer also reduced the intensity of her exercises early in her pregnancy, more than Samantha herself would have done, reducing dumbbell weight and eliminating jump rope and jumping jacks. Madison, while laughing about her mother's attempts to keep her off her feet for the entire pregnancy, also expressed fear of heavy lifting and of falling on the ice, a fear that Samantha shared, causing her to text her midwife after a spill. Similarly, women on discussion boards also share concerns about heavy lifting and exercise.

Stress: An Obscured Risk With a Modern-day Twist

Historically, a woman's emotional and mental state in pregnancy has been considered a cause for concern and regulation. Anxiety, shocks or frights, and other negative emotions have been thought to "induce deformity or other abnormal development of the infant" (Napheys 1890:151). Pregnancy has been considered a time of mental unrest that can impact the baby (Bishop 1910; Ballantyne 1914).

Today, this language has shifted from talking about nerves or impressions to the language of stress. For instance, stress is a major topic in *The Mocha Manual* (2006) for African-American pregnant women. Author Kimberly Seals-Allers associates stress and institutionalized racism with the higher incidences of preterm labor and low birth weight for Black women across socioeconomic status. And according to *WTE*, while normal levels of stress are not harmful to the fetus, it could be problematic if stress leads to anxiety, sleeplessness or depression.

Some of the women I interviewed discussed the need to avoid stress, for themselves and their baby. Jenny was doing her best to manage the stress of an impending move during her second pregnancy, while Samantha talked about the importance of sleep in keeping stress at bay. Stress avoidance was key for Samantha, which was part of the reason she avoided prenatal testing, with its false positives and ambiguous results. Colleen was the most direct in referring to stress as harmful to the fetus, even marrying the older language of impressions with newer scientific terminology:

And as weird as it sounds, leaves like an impression on them somehow, either physically or, as weird as it sounds, I guess emotionally on them, because babies do react to stress. They do react to fear, like those hormones are coursing through your body, there is a biophysical-mental connection going on.

IVF: Risks Created Through Technology

In addition to these more familiar obscured risks, women also navigate a plethora of risks particular to newer technologies and scientific discourse from the mid 20th century onward. These defined risks have been identified or even created by scientific developments, are the subjects of some probabilistic knowledge and are predicted to lead, often through a complicated chain of presumed cause and effect, to hazardous outcomes. However, it's important to note that the term "defined" describes an orientation to these risks more than their objective reality. Knowledge of risk probabilities is not necessarily trustworthy, nor do laywomen always have the exact data about probabilities, often relying on vaguer conceptions of causality. These defined risks are what Giddens terms "manufactured uncertainty" (as noted before, Giddens does not usually differentiate between the terms risk and uncertainty), created by the proliferation of knowledge. They

also tend to originate in a cause external to the mother, although they impact the embodied experience.

In some instances, medical interventions themselves are now the perceived risk to be avoided (Rothman 2014). One risk that has been created by new technology is the risk that a fetus conceived through in-vitro fertilization (IVF) will develop more slowly than a “naturally” conceived fetus. This can result in low birth weight, which could result in further complications for a baby’s health (an example of how risks can chain together to lead to an ultimate hazard). In this instance, a technically derived risk leads to a more embodied risk.

The two women I interviewed who had conceived through IVF had both faced this risk. Madison, pregnant at the time we spoke, was concerned with fetal growth and gladly cooperated with enhanced monitoring. Sophia, who had conceived her twins through IVF, faced the hazardous fallout from this risk, when one of her twins was much smaller than the other at birth.

Contamination and Radiation: Environmental Risks

Other defined, scientifically driven risks occur in a familiar, embodied context—the regulation of women’s diet in pregnancy—but are informed by a modern environmental discourse of contamination by bacteria and toxins.

WTE and other sources of pregnancy discourse disseminate knowledge about many environmental risks, including risks from bacteria and toxins in food and personal care products. The guide recommends that women check their tap water with the EPA or health department, hold their cell phones away from their bellies and avoid a plethora of

foods that could carry listeria. This focus on dangers of which even an informed woman may know nothing is part of the reason for *WTE*'s reputation among some as too scary. It also illustrates the prevalence of newer technological risks in pregnancy discourse, although, as I have shown, other types of risk have not disappeared.

All of the women I interviewed showed some awareness of the risks of bacteria and toxins in foods, although some seemed more reflexive and knowledgeable than others. Samantha and Katherine, for instance, directly addressed listeria and environmental toxins in food as risky to pregnant women and fetuses. On the other hand, several of the other women I interviewed said they just knew not to eat certain foods such as deli meat, but did not indicate they knew the reason behind this recommendation (this accords with Lash, as cited in Lupton and Tulloch (2002), about risk assessment resting on shared assumptions, values and practices).

Women on TheBump.com and BabyCenter.com were also concerned with risks related to contaminated food and to taking medication and vitamins. For instance, posters often ask about the advisability of taking over-the-counter products such as antihistamines.

Embodied and Technical Knowledge

Embodied knowledge can be valued above and beyond other forms of information—or dismissed (Lowe et al. 2009). As Duden (1993) shares, in the past, the most certain sign of pregnancy and one that women had control over making public was the quickening, or first fetal movement; she quotes Samuel Pepys' diary from the 17th century, on the king's mistress crying out and announcing her quickening during a royal

dinner. In addition to announcing pregnancy, women could also hide early pregnancy symptoms and signs and seek to end pregnancies.

Almost all the women that I interviewed described feeling the baby move, and when they did so, the joy and excitement that such feelings brought. The knowledge that they were growing another life was part of their excitement, and even those who had more difficulty managing their symptoms or adjusting to their pregnant bodies described such feelings as a positive experience. The only woman who did not describe the quickening was just 17 weeks along and may not have experienced it yet.

In addition to the quickening, embodied knowledge can also be the source, as demonstrated earlier, of predictions about the baby's sex and can be used to question the baby's health (for instance, if a previously active fetus stops moving).

In contrast, visualizing technologies such as ultrasound have been considered key in disembodying the fetus from the woman's body, giving it an independent existence and privileging visual, medical expertise over the woman's embodied expertise. Yet women often find these technologies relieving, joyful and even empowering, seconding their own haptic knowledge. Knowledge gleaned through ultrasound and prenatal testing, such as the probability that one is having a healthy baby of a certain sex, may enable her imagination to create a personality for the coming child (Saetnan 2000; Ruddick 1995). Through ultrasound fathers are able to experience the fetus, too. Researchers have documented North American couples that have found ultrasound a positive, family-building experience, while some women have been found to have a higher attachment to

their fetuses after prenatal testing (Fink-Jensen 2009; Taylor 2000; Mercer 1995; Lupton 1999b).

Prenatal testing, when it can answer the question of whether a child will be healthy or not with a “yes!” (and a “yes” based on strong enough probabilities to inspire confidence), can lead to relief and joy. The women I interviewed primarily derived joy from ultrasound and fetal heart monitoring because it helped them imagine their child and bond with a husband or, in Sophia’s case, mother who accompanied them to these all-important prenatal visits. They described seeing the fetus on an ultrasound and hearing the fetal heartbeat as some of the most exciting moments of their pregnancies. Sophia, an IVF mother, told me that she “cherished” each ultrasound image. Some women were particularly excited about learning the baby’s sex; for instance, Jenny relished knowing the sex because it confirmed her prediction and so she could more easily imagine doing parent-child activities with her little boy-to-be.

These women perceived their haptic knowledge and technical knowledge as two sides of the same coin, two techniques for learning about their baby. The exception to this was Samantha, who had purposefully reclaimed uncertainty and asserted her embodied knowledge by refusing ultrasounds, a decision that her midwife approved. This was her way of coping with the manufactured uncertainty brought about by prenatal testing, with its false positives; Samantha, a Catholic, did not intend on having an abortion under any circumstance. Research has documented that women do reject testing because of the possibility it will lead to stress, further testing or a termination (Markens et al. 1999).

Now, the growth of online discussion boards gives embodied and experiential knowledge a wider forum. Women go online to ask whether others are experiencing the same symptoms they are, seeking knowledge and comfort from other women's experiences. Posters also ask how to tell a fetal kick and whether to be concerned if an active fetus has stopped moving.

Yet while the existence of such forums seems to privilege embodied and experiential knowledge, biomedical knowledge is a frequent topic. Often help is needed in interpreting difficult-to-understand test results or seemingly contradictory recommendations about risk from medical practitioners. Women share their own experiences in response, but they also often advise the questioner to ask her medical practitioner or switch to another doctor if she disagrees with her or his approach to risk. This reflects how women try to unite their embodied knowledge together with biomedical norms and knowledge, synthesizing and negotiating different forms and sources of information (Root and Browner 2001).

Two Orientations of Pregnancy

While there were many similarities between the women I interviewed in questions they asked themselves about pregnancy and the obscured and defined risks they navigated, I found that they demonstrated one of two orientations toward pregnancy, founded in differing relationships to the uncertainty of pregnancy, defined risks, and embodied and medical expertise.

Partially Disembodied, Risk-Intensive Pregnancy Led by Technical Expertise

Two of the women I interviewed exemplified a pattern of pregnancy that I term “partially disembodied, risk-intensive pregnancy led by technical expertise.”

Sophia and Madison had both begun their journeys to their first and only pregnancies with fertility challenges. After they did not conceive through intercourse, Madison and her husband chose IVF instead of adoption in order to still have an embodied experience of carrying a genetic child. Sophia, because of an inherited infertility issue and her lack of a partner, went straight to IVF using sperm donation. She did not express regret about needing IVF, but indicated that “natural” conception would be ideal. These women’s partially disembodied conception, aided by technology, was not a preferred choice for either.

Both also had to face risks and hazards as part of their use of IVF technology. In Madison’s case, the risk of slower fetal development than with a “naturally” conceived baby led to intensive monitoring, while Sophia’s doctors had failed to effectively monitor her twins’ growth, contributing to their dramatically different birth weights.

Sophia and Madison asserted the expertise of doctors over their own expertise or women’s experiential knowledge in general. For Sophia, a nurse herself, it was natural to trust in the medical paradigm. Even after the mistakes made by her obstetrician, she still expressed confidence in medical expertise. Madison also saw no reason not to “defer to them [doctors], they’re the experts.” The medicalized model of pregnancy is dominant, so one can’t read too much into this. But perhaps these women did not feel a strong sense of

their own embodied expertise, owing to their infertility, and were therefore more likely to subscribe to the medical system that had helped them conceive much-wanted babies.

This reliance on medical experts may also result from the fact that with an IVF pregnancy, options grounded in women's expertise, such as going to a midwife or giving birth at home, were less available to them; they were classified as "high risk," though neither used that term. The decisions they made prior to conceiving were the first of many steps down a medicalized path (Becker 2000).

Sophia and Madison were happy to follow their medical practitioners' lead on risk assessment as they faced both obscured and defined risk. For instance, both easily accepted restrictions on food and exercise. Madison describes deferring to her doctor on caffeine consumption:

I like strong coffee. So I really struggle with that. But then when my OB was like, 'oh, 1-2 cups of coffee a day,' I was like 'yes!' So I'm back on caffeinated coffee, so it's not an issue now. I have like one mug in the morning and then I'm fine. So I had to, I did cut back on that because I just wasn't sure until she kind of gave me the go-ahead.

This is not to deny that Madison and Sophia exercised reflexivity in order to manage risk, making choices about their sources of information and their prenatal practitioners. For instance, Madison was one of the women who eschewed *WTE* as too scary, in favor of other texts, while both shunned online pregnancy communities as sources of information. However, neither explicitly questioned the medical establishment or the dominant discourse.

Technology was a source of joy and relief to both, along with but moreso than the embodied experience of kicks and flutters. Sophia, as noted earlier, was delighted with

her ultrasounds. She had created a book of ultrasound photos and had ordered a fetal heart monitor for home use. She also found joy through feeling connected to her babies and reading and singing to them. Still, in response to my question about the most exciting moments of pregnancy, she mentioned ultrasounds only. Madison's moments of joy were purely of the technological variety; at 17 weeks, she may not have felt the baby move yet. She did describe herself as happy to be able to carry her child. Both women seemed to appreciate that, through IVF, they could have an embodied experience of pregnancy, but were more supported by the confidence that came from technological knowledge.

Both were also accepting of prenatal testing. Madison described good news as a relief, while bad news would at least have helped her prepare for the challenges of raising a baby with a condition like Down's syndrome. She was particularly comfortable, among the women I interviewed, talking about probabilities and risk factors, such as her age (38). She also appreciated a straight-shooter doctor who told her upfront about the probabilities her fetus would have an abnormality.

In addition, both Madison and Sophia learned about their baby's sex through ultrasonography, which is common for women across both styles of pregnancy. However, neither woman described engaging in any guesswork or prediction about their baby's gender based on their own or other women's embodied experience.

This reliance on external, technological knowledge about pregnancy is key to Madison and Sophia's state of partial disembodiment. Without putting it in so many words, Madison seemed to realize this relative disembodiment, as she described her

anxiety about not experiencing morning sickness, which appeared to signify a lack of proof within her body about the pregnancy:

I feel like I missed out but fortunately, really, I didn't have any morning sickness. And I kept asking my doctor, like, 'is something wrong with me?' because I read that you should be sick, like if you're sick that's good, that means that things are working out.

The perceived un-naturalness of their pregnancies did not escape either woman.

Sophia was terrified to tell her father and others about her pregnancy because of her state as a single woman and her IVF conception, and was pleasantly surprised to find joy and not judgment. Madison was also concerned about people gossiping about how "Madison couldn't get pregnant on her own," so she and her husband were keeping the IVF a secret.

These two women felt empowered by a highly technological framework of pregnancy, but also faced risks created by the very technology they used to conceive, that partially disembodied their experience and focused their trust on medical expertise. One consequence may have been a lack of pregnancy documentation: Sophia had so much superstitious dread that something would go wrong that she had no photos taken of her during pregnancy until 15 minutes before she went to the hospital for her scheduled C-section (a medically intensive delivery method common for IVF pregnancies).

Embodied Pregnancy Through Reclaiming Uncertainty and Women's Expertise

The five other first- and second-time mothers that I interviewed had a more embodied experience of pregnancy, although not without technological influence, as they reclaimed uncertainty and women's expertise.

These women consciously reclaimed several aspects of the uncertainty of pregnancy, exercising their choice about what expert knowledge to turn to, often relying more on women's expertise and less-managed models of care through midwives than on an obstetricians' care. They also demonstrated more discomfort when encountering the medical model of pregnancy, experiencing a loss of control in these situations.

All five women conceived "naturally," and two were pleasantly surprised by how quickly they conceived after they began trying. In a more purposeful reclamation of uncertainty, all five women chose unmedicated, vaginal delivery (although not all were able to realize these plans). Several also chose to work with midwives and/or doulas, rather than or in addition to obstetricians. In this way, they asserted their belief in their own ability to labor and in woman-based care. Samantha went even farther, planning a homebirth.

A few of these women did initially choose obstetricians for their prenatal care, but had difficulty coping with a perceived lack of control. Jenny said she felt powerless with her obstetrician for her first pregnancy, and was distressed by the contradictory information she received from different practitioners in the same office. Mia also found that her doctor the first time treated her like "cattle," pushing her through appointments and warning her against unmedicated childbirth. She wished they could have given her "a vote of confidence, at least try to support me." Both Jenny and Mia had switched or were planning to switch providers for their second pregnancies.

Colleen was particularly troubled by uncertainty manufactured by her practitioner and her corresponding lack of control over the situation. She had several additional

anatomy scans, scheduled for her without her consent or input, toward the end of her pregnancy because of practitioner error and what she saw as fear mongering.

Several of these embodied women, like their more technologically influenced peers, also found joy through technology, particularly when it came to finding out the sex of their babies. Others failed to mention ultrasounds and related technology when I asked them about exciting moments in pregnancy, referring instead to their feelings of joy at “feeling the little one inside.” As Colleen said:

I’m gonna miss having the baby here ... Feeling the baby move all the time, just ... I don’t know. The baby’s a baby, the baby’s in there [laughs], the baby’s real, like, this is happening, this is a miracle, you know. It’s awesome.

In addition, while these women for the most part did partake in prenatal testing, they were ambivalent about it, citing the possibility of false positives and their commitment to having their child, regardless of abnormalities. Samantha even went so far as to eschew all ultrasounds, a decision her midwife supported. In this way, she also reclaimed the uncertainty of not knowing her baby’s sex, as did Colleen.

Despite their orientation toward accepting uncertainty, these embodied women were still diligent about assessing obscured risks such as exercise and stress, as well as defined risks. However, this assessment was often part of a reflexive questioning of their practitioners and the dominant pregnancy discourse, particularly in response to risks related to bacteria and toxins in foods and other products.

For instance, Samantha questioned the warnings to women to avoid soft cheeses, deli meat and sushi during pregnancy for fear of listeria contamination leading to food poisoning. She used statistics garnered from less common sources of information for her

risk assessment, concluding that the risks were very low and she would continue to eat these foods. Katherine read a book on toxins that changed her assessment of risk, but noted that she could not do much to respond (this corresponds with Beck's (1992) conclusion that catastrophic, environmental risks are unavoidable):

I also read a book about, you know, like what goes into my body, toxin that are everywhere, even in our drinking water, lawn pesticides and all that stuff. And I can't tell you that I changed my habits at all because we weren't using lawn pesticides and, like, most of the things didn't apply to us, and then a lot of things did apply to us but there was no avoiding them, like drinking water.

These five women demonstrated more reflexivity and more trust in their bodies than Madison and Sophia, as they reclaimed uncertainty and responded to both obscured and defined risks. They also demonstrated choices that fit within an ideological frame called a variety of names such as natural mothering or attachment parenting, which includes re-asserting women's power as mother and control of reproduction over the forces of medicalization (Bobel 2002).

The Dark Side: Struggling with Embodiment and Uncertainty

While I characterize her as having an embodied pregnancy through reclaiming uncertainty and women's expertise, Mia also described to me the dark side of pregnancy, as she suffered with prepartum depression. She struggled with the embodiment of pregnancy, including physical pain, a miscarriage scare and identity confusion.

Mia's challenges began during her second pregnancy, with a potential miscarriage, which she said "psychologically changes you." Brought face-to-face with the potentially tragic uncertainty of pregnancy, she turned to technological knowledge,

tracking her daughter's fetal development, willing her to stay in the womb (while also continuing to assert embodied expertise through her plans for unmedicated childbirth).

Mia's struggles during pregnancy were intimately related to her embodiment of pregnancy, to the physical act of carrying a child and the accompanying questioning and identity confusion. She found her physical symptoms very difficult to cope with, and described pregnancy in general as "taking a toll on you physically and emotionally." In addition, she alone among the women I interviewed described questioning her identity during pregnancy:

Pregnancy is so long, well I mean, it's 9-10 months but it feels so long that you start questioning like 'is this who I really am?' Or "am I going to go back to my normal self?" or 'am I gonna be like this forever?'

She believes that she had prepartum depression during this second pregnancy, a condition she knew nothing about before becoming aware of her own despair. She told a few friends, who were unsympathetic, and was too embarrassed to tell her doctor, but did find some comfort through the online discussion boards at BabyCenter.com. As a Catholic woman, she was determined to have more children, but she felt badly for not meeting the expectation of delight in pregnancy. To express the negative aspects of mothering is to break a strong taboo (Francis-Connolly 2014).

The online community of pregnant peers seems to be particularly important for women facing challenges or isolation during pregnancy (Evans, Donelle and Hume-Loveland 2012; Lowe et al. 2009). Mia turned to BabyCenter.com to check in and occasionally share her own stories about how "uncomfortable and miserable" she was. It

was a place where she could find sympathy and support at 2am from women going through similar experiences.

The other women I interviewed, who did not describe isolation or depression, agreed with the theory that online groups are more suited for women who are lonely or struggling. Jenny, who was turned off to online sources because of the horror stories shared, guessed “the women there might be kind of lonely” and need this form of support. Samantha described herself as wanting to tear her hair out because of the entitled attitudes expressed on forums, but countered that by referencing her “blessed experience” of being pregnant, with the implicit assumption that the women communicating online were not as lucky.

Soldiering through her pregnancy, Mia adopted an attitude of stoicism and a dark humor that Giddens calls the “cynical pessimism” response to risk (1990:136). She laughed at herself frequently in our interview, said that she chose unmedicated childbirth “because I hate myself” and humorously described her trials:

I felt like I could deal with like 3 or 4 symptoms at a time, like I could barely handle the tiredness but I could fudge my way through it. You know the acid reflux, okay. You take lots of Tums. Miscarriage scare, well, you push that down emotionally, but then you throw something like hemorrhoids on top of it and you’re like, ‘okay, I can’t even sit down now?’ Like, seriously [laughs].

Mia experienced a darker pregnancy than the other women I observed as she experienced prepartum depression, struggled with embodied uncertainty and felt guilty about those struggles during what is typically considered a joyous period.

Embodiment and Public Scrutiny

As demonstrated, physically carrying a pregnancy opens one to unique stresses, in addition to pleasures. Most of the women I interviewed found joy from the physical act of pregnancy, while coping with unpleasant symptoms. Several also told me about attention, both positive and negative, directed toward their pregnancies, particularly their pregnant bodies, reflecting how women's bodies are open to regulation and deconstruction.

The women I interviewed differed in how they felt about their pregnant shape. Jenny and Katherine did not feel great about their pregnant bodies, although they appreciated positive affirmation from their husbands and others. On the other hand, Samantha, who described herself as having extra weight beforehand, said it was nice for her weight to now be working in support of something (her growing baby). She speculated that women who had been more “petite” before pregnancy might find pregnancy weight gain more jarring (for research on this topic, see Bailey 2001).

Male coworkers were particularly guilty of reducing pregnant colleagues to their bodies, which the women felt had to be combatted delicately. Colleen used humor to warn her male colleagues to stop commenting on her girth, and Jenny to get her male coworkers to stop touching her belly unsolicited. Sophia, on the other hand, did not seem to mind coworkers teasing her about her body, perhaps because she was not the lone pregnant woman in her workplace.

Attention from strangers was a mixed bag. While Sophia perfected a glare to ward off those who looked ready to lay hands on her, several of the other women I interviewed enjoyed people's attention during pregnancy—at least to a point—and felt that that

attention was founded more in celebration and a desire to be part of the mystery and wonder of pregnancy than in judgment or reductionism. Mia described it as:

I see it more as they recognize that something amazing is happening and they kind of want to be a part of it. And um, and that's really beautiful and occasionally weird, especially if they don't take their hands off your belly and you're like 'okay, it's been there for a while now' [laughter]

Body commentary was similarly prevalent among women swapping stories on TheBump.com. In response to a discussion thread asking women to share the rudest comments or most bizarre advice they received while pregnant, the most common responses were related to the body. Most focused on weight gain, although several were directed at women who were perceived to be carrying small, such as “did you lose the baby?” or “you don't look as pregnant as you did yesterday.”

In addition to this scrutiny of the physique, pregnant women also face judgment about their behavior in relation to risk, founded on the moral weight given to risk assessment during pregnancy. Samantha, who adapted typical dietary guidelines based on alternate sources of information, told me how she encountered a cheesemonger at a market who refused to sell soft cheese (considered a listeria risk) to her. In addition, a tattoo artist friend who had been working on a tattoo for her pre-pregnancy would not finish it after learning she was pregnant. Others who hewed more closely to the accepted discourse rarely faced criticism, with the exception of Jenny, whose mostly male coworkers questioned her consumption of coffee. Luckily, none of the women I interviewed were subjected to any extreme attempts to control their behavior during pregnancy, which commonly impact more disadvantaged women.

These women also described family and friends, particularly husbands, encouraging them to be healthy and behave responsibly during pregnancy. Madison's husband asked if she was getting her leafy greens after reading in a pregnancy guide for dads that this was important, while Katherine's husband was concerned with her diet and exercise. Husbands also tended to make sure that women weren't carrying heavy loads, and to gently scold them if they did so, as part of encouraging responsible behavior.

REFLEXIVITY, ALTERNATIVE DISCOURSES AND STRATEGIES OF RESISTANCE

One's orientation to risk and expert systems is not pre-determined but cultivated reflexively, within a context of shared knowledge and values. Most of the women I interviewed tended to trust in both embodied and technological expertise and found ways to reclaim uncertainty, while Madison and Sophia had pregnancies that were partially disembodied and more reliant on medical expertise. This is similar to what Burton-Jeangros et al. (2013) found, that women fall on a spectrum based on their willingness and comfort with probabilistic thinking, from a subset of women who pursued all forms of testing in order to get as close to certainty as possible to women who preferred their subjective knowledge, the experiential knowledge of family and friends, and an acceptance of uncertainty.

In addition, the women I interviewed all exhibited some degree of reflexivity and comfort navigating expert systems. Social class modifies how people interact with expert systems, as has been documented in motherhood and pregnancy (Hays 1996; Lareau 2003; Lazarus 2009; Lupton 1999b). Middle-class people typically exhibit more confidence than poor and working-class people in interacting with experts and defying or pushing back against expertise, based on a comfort with acquiring, filtering and making judgments about knowledge. This comfort with knowledge and expert systems is particularly relevant to a burgeoning lay discourse of health that makes individuals

increasingly responsible for their health outcomes and speaks to societal expectations of having control over our own destinies (Prior 2003; Reinharz 1988).

Pregnant women, particularly the middle class and those with a more embodied experience of pregnancy, exercise their own reflexivity to assess and filter different sources of knowledge, negotiate guidelines and assert their own and other women's expertise. In this section, I will describe the sources of discourse and the strategies that support embodied risk assessment and the embracing of uncertainty.

Sources of Experiential Knowledge

In addition to medical expert knowledge, other women's experiences are a source of knowledge and support for pregnant women. All the women to whom I spoke, both those who had more embodied and less embodied experiences of pregnancy, had turned to their friends who were pregnant or have been pregnant for knowledge, asking questions and venting about symptoms. Jenny appreciated a heads-up about lesser-known symptoms from one of her friends, while even when her peers hadn't experienced similar symptoms, Katherine valued this source of knowledge and support. Colleen was glad to have a friend who was also a La Leche League facilitator and could discuss birthing and breastfeeding options.

In addition to in-person peers, Mia valued the support and knowledge of online communities. However, the uncurated expertise provided by online sources was filtered out by most of the women I interviewed. Several emphasized the wide range and conflicting nature of online information: "you can find anyone in your shoes, you know, supporting you in any way, which I don't think was always good," according to

Katherine. Madison echoed her: “And there’s so much conflicting information. You can read one article that says this, and then you can literally 2 minutes later find an article that says something completely different.” Jenny agreed: “you could find every answer you want, you know, good, bad, happy, sad.”

Experiential knowledge, when communicated via online discussion boards peopled by strangers, was not considered trustworthy by most of my interviewees. They exercised their reflexivity by filtering out these sources of information, preferring experiential knowledge from women they trusted and, because they did not totally shun the medical system, technical knowledge from prenatal practitioners. However, given the popularity of online pregnancy communities—BabyCenter.com reaches over 28 million people per month—the experiential knowledge of Internet strangers is obviously a valued commodity for many pregnant women when it comes to coping with the uncertainty of pregnancy.

Mommy Blogs, Experiential Knowledge and Risk Assessment

Another source of pregnancy discourse founded on experiential knowledge and women’s expertise is the mommy blog. These interactive, online resources are considered a more democratic form of media, requiring little in the way of financial resources to publish and resting on the embodied expertise of both the authors and those who share their own experiences in the comments section.

Pregnant Chicken was listed as a top pregnancy blog in 2013 by two sources and is the first Google search result for the phrase “pregnancy blog.” The author has developed her own online prenatal guide that in many ways echoes the dominant prenatal

discourse, but also differs from it in key ways. For instance, the author of *Pregnant Chicken* emphasizes the wide range of embodied experience that is normal in pregnancy more than other sources, as well as the challenges of one's pregnancy being treated as public property.

While the knowledge shared about obscured and defined risks is fairly similar to what is disseminated by *WTE* and other texts, she is also more likely to accept uncertainty by asserting that total risk avoidance is neither possible nor desirable for the mother's sanity. This has provoked strong responses. For instance, one blog post on the risks of eating soft cheeses while pregnant discusses the possibility of food poisoning from listeria, which the blogger states is serious and should be avoided. However, she concludes that since "the risk applies to the unpasteurized varieties and not the ones that you're most likely to find at your grocery store" in the U.S., women should feel free to eat cheese, after checking that it's pasteurized. Two respondents found her attitude irresponsible: one a microbiologist who felt she had minimized the risks from listeria and one who accused anyone who would run a risk of selfishness, the ultimate maternal no:

But there IS a risk & so why would you be so selfish to take it? Someone miscarried a few months ago from eating soft cheese.
<http://m.smh.com.au/national/health/soft-cheese-recalls-widen-after-two-deaths-linked-to-listeria-20130118-2czc8.html>. If you can't go without a few foods for 9 months then maybe you need to reassess your motivation for being a parent

Reflexivity in Relation to Embodiment

While pregnant women are largely responsive to prenatal discourse, they are not merely passive recipients of prenatal directives. They actively seek out recommendations by buying books and turning to other resources. They also exercise agency in relation to

the dominant discourse, referring to alternate sources of information such as others' embodied experience and modifying or ignoring recommendations (Markens et al. 1997; Hammer and Inglin 2014; Malenfant 2009; Song et al. 2012).

While I observed indications of reflexivity from all the women I interviewed—the many choices that pregnant women and those trying to conceive face make reflexivity mandatory—the women I characterize as experiencing embodied pregnancy through reclaiming uncertainty and women's expertise demonstrated a greater likelihood of accessing less common sources of information and, relatedly, a greater degree of reflexivity when it came to navigating behavioral guidelines meant to reduce risk.

In particular, Samantha and Katherine demonstrated this reflexivity with their choice of alternate reading material: what she described as “hippy, crunchy books” for Samantha and a book on toxins for Katherine. Samantha used information from the less typical sources of pregnancy discourse that she accessed to take a looser approach to listeria risk, similar to *Pregnant Chicken*.

Katherine and Samantha's choices demonstrate the confidence that more affluent women have in their own informed judgment, manifesting their privilege as women with cultural capital who, while facing the scrutiny that most pregnant women face, are better able to disarm pushy medical practitioners and critics than women from less advantaged backgrounds (Lazarus 2009; Reich 2014). They are also less likely to be subjected to extreme forms of social control during pregnancy.

Strategies for Negotiating and Responding to Discourse

So overwhelming are the messages of intensive mothering and pregnant women's responsibility to their fetuses that even women who consciously exercise agency in relation to dominant pregnancy discourse—by dismissing certain guidelines, for instance—tend to return to “more comfortable discursive positions” (Miller 2007:347). Several of the women I spoke with would follow up details on their prenatal risk assessment by stating that the end goal of a healthy baby was all that mattered. Even the highly reflexive Samantha, after explaining her plan to birth at home and her mother-in-law's fears about this decision, said that “of course it's our, it's our wish that everyone is healthy and happy, including me, including baby, so, um. Hopefully she realizes that.”

In addition, both women who consciously assess risk in alternative ways and those who engage in what is considered less-than-ideal behavior may seek to justify their decisions or lapses. The women I interviewed all engaged in what Copleton (2007) calls techniques of neutralization, as defined by Sykes and Matza: “specific verbal accounts that explain or rationalize norm violations” (2007:469). Copleton describes common techniques of neutralization offered by pregnant women, particularly denying that her actions have caused harm; condemning others or society at large for setting unrealistic expectations of pregnant women; and using the metaphor of the ledger, in which women balance ideal and less-than-ideal behaviors.

Many of the women I interviewed used one or more of these techniques to justify lapses or conscious decisions to ignore prohibitions. For instance, the ledger technique was used by Madison and Colleen, who referred to balancing their occasional digressions into sweets or fried foods with healthier eating, while Katherine, Jenny and Mia

condemned no one in particular, but asserted that their survival during pregnancy with a toddler to take care of was dependent on going easy on themselves.

Uncertainty and Risk over Multiple Pregnancies

Research has demonstrated that the experience of first-time pregnancy is qualitatively different from later experiences, accompanied by more anxiety and a higher level of attachment to the fetus (Searle 1996; Mercer 1995). I found that the second-time mothers I interviewed did not differ significantly from the first-time mothers in their attitudes toward uncertainty and risk. With a larger sample, these differences might have been more apparent.

However, I did find a strong outlier in Lucy, a mother of five I interviewed who demonstrated her own approach to risk, developed over her five pregnancies and founded in her experiential knowledge. Lucy trusted more in her embodied knowledge than women who had less experience of pregnancy and felt confident that she could discount some risks disseminated in the dominant pregnancy discourse.

Initially, Lucy told me, she strictly followed typical pregnancy guidelines, fearing a miscarriage around every corner. By the time we spoke, following the birth of her fifth child, she told me she disregarded a healthy diet during pregnancy, with the exception of watching her blood sugar and avoiding alcohol (she's a non-drinker generally). She described herself as eating hot dogs and junk food and drinking soda with no qualms. Using the denial of injury neutralization technique, based in her lived experience, she explained that her eating habits seemed to have no relationship to her children's relative states of health. For instance, she described her risk behavior as fairly consistent across

her third, fourth and fifth pregnancies; however, her fourth child was considered “normal” while her third had developmental delays and her fifth was born deaf.

Over the course of her pregnancies, Lucy learned that uncertainty could not be eliminated by risk management—God (Lucy is Catholic) and genetics play a role—and so she modified her approach to risk to focus on what she thought most important. Using her experiential knowledge, for instance, she chose to take steps to combat the risk of pre-term labor by voluntarily restricting her activities, without a doctor’s recommendation. Lucy took control of the rules, crafting her own based on her embodied experience.

NATURE AND EXTREME REPRODUCTIVE TECHNOLOGIES: IS EMBODIED PREGNANCY STILL RELEVANT?

Despite differences among women in their degree of embodiment during pregnancy, the extent of their reflexivity and their relationship to uncertainty and risk, the women I interviewed and observed interacting online demonstrated a preference for what is considered “natural” and embodied in pregnancy and childbirth.

The women I interviewed were similar in preferring, when possible, to have an embodied experience of pregnancy. It was important to Madison to carry her own baby; she and her husband turned to IVF before considering adoption seriously in order to have this experience. This is no contradiction: the attraction of IVF technology is the opportunity it gives women to gestate their own genetic children (Silva and Machado 2011; Becker 2000; Franklin 1995). In this instance, technology is used in service of embodiment, although women like Sophia and Madison experiencing an IVF pregnancy may not feel or act on that embodiment in the way that women do who conceive without medical intervention.

Samantha, who would like to pursue adoption for her future children, also wanted the experience of being pregnant for her first child and had fully embraced her embodied knowledge over medical expertise. Many of the women I spoke to, as noted earlier, derived joy from nurturing and feeling the baby inside. They also tended to choose unmedicated, vaginal childbirth as the “natural” and therefore better way to experience

childbirth. On the other hand, most of the women I interviewed accessed technologies that screen the fetus's health and visualize the fetus as a separate entity, most with joy although some with trepidation about ambiguous results.

Reproductive technology has been used to facilitate embodied pregnancy through such activities as prenatal screening and IVF, subjectifying the fetus in order to combat uncertainty. Embodiment and technology mutually reinforce the primacy of the maternal-fetal link and expectations placed on the mother. Both what is considered natural and what is considered technological are indispensable in modern pregnancy. The embodied experience of pregnancy is still very relevant.

Whether it will continue to be relevant is a valid question. Some current and future technologies go beyond visualizing the fetus as separate to more explicitly splitting the woman and fetus. This would seem to free women (or a particular woman) from the imperative and pain of pregnancy as well as from the uncertainty that accompanies this state.

However, it's not that simple. Surrogacy, when a woman other than the "legal" mother carries the fetus, is a complex scenario involving the cultural imperative of mothering and parenthood, infertility, kinship, consumerism and economic inequality (Hochschild 2012; Pande 2009 as cited in Hochschild 2012; Majumdar 2014; Thompson 2005). It is an economic transaction in which the birth mother is typically motivated by hardship to provide her alienated labor to create the baby product (Thompson 2005). The surrogacy relationship often creates anxiety, leading both women to engage in identity work and re-define pregnancy and mothering (Teman 2009).

For the legal mother, it may sound ideal to place the risks associated with pregnancy to a woman's health, her very life, her identity, her career and her relationships onto another person. However, the women I spoke to about surrogacy rejected it as unnatural, from Katherine, who said about surrogacy, "I don't dislike pregnancy that much" to Sophia's "hell, no!" They expressed their desire to attach to their fetus and fears about how well a surrogate would manage risks. As Madison said:

I would be calling that woman 20 times a day, [laughs] I would be their worst nightmare, so [laughs] it's better that I just obsess over myself, while I'm pregnant, versus someone else. Well, because you don't know what they're doing when you're not around, that would be very scary for me, yeah.

I also asked my interviewees, as a thought experiment, how they would feel if their husbands could carry their babies. Katherine said she would like for her husband to have the chance to be pregnant, not because it was hard on her, but because he would want the experience. Most women, however, were not in favor. Jenny thought it would be funny if her husband could gestate, but ultimately wanted that responsibility for herself. Colleen and Mia (despite the prepartum depression and challenges the latter faced during pregnancy) indicated that men carrying babies was just not the natural way. While Mia said they would have "10 kids" if her husband carried their children, she also stated "I don't know if I could be as emotionally supportive and physically supportive as he was [when she was pregnant], so I guess there's a rhyme and reason to it all." This speaks to the perceived inevitability of women nurturing fetuses and coping with the uncertainty of pregnancy.

To allege the inevitability of pregnancy and a preference for embodiment, within a context of rapidly expanding choices for conception and motherhood, is part of identity

work, what Giddens calls the self as “reflexive project” (Giddens 1991:32). Since pregnancy can now be (imperfectly) prevented, to choose to be pregnant says something about a woman’s priorities and goals. When technology enables different ways of becoming a mother, choices such as IVF or surrogacy also communicate a message. With an increasing array of choices comes moral claims-making, such as individuals who accuse women pursuing IVF of selfishness and ask “why not just adopt?” (a question that obscures the emotional, legal and financial challenges of contemporary adoption). The risk discourse of pregnancy is also soaked in moral claims-making about pregnant women’s choices and responsibility for the fetus.

This moral claims-making is not just exercised by those who eschew technology but also by those who support extreme reproductive technologies as a way to empower women and promote gender equality. As we come near to achieving ectogenesis, or gestation outside the body (scientists have recently grown a human embryo for 10 days in an artificial womb), ethicists have been debating whether ectogenesis is a worthy subject of scientific research (Istvan 2014). The more palatable reason for ectogenesis is to gestate premature babies who can no longer be gestated by their mothers, but it could also be used to free women entirely from gestation. Smajdor (2012) spells out the reasons in support of ectogenesis: the inherent gender inequality of pregnancy, the potential physical harms and risk of death, the social impacts of pregnancy on women’s careers and relationships, and physiological distress and identity confusion. In addition, with ectogenesis, the assumption is that a fetus grown in a lab will be in a more controlled

environment in which risks can be minimized, thereby combating the uncertainty of pregnancy.

However, social theorists also fear that ectogenesis will disempower women by strengthening fetal rights and undermining birth control and abortion rights; subjecting women who choose an embodied pregnancy to greater social control and opening them up to legal prosecution for their risk management choices; extending the imperative of parenting, by eliminating pregnancy and childbirth as reasons to avoid becoming a parent; and stripping women, particularly in societies that greatly value the childbearing role over women's other contributions, of power and position (Murphy 1989; Aristarkhova 2005).

At the moment, ectogenesis is some years away, and it will likely be used first in life-threatening situations. Indeed, it seems that newer reproductive technologies, such as IVF, are deployed more readily to help women embody pregnancy than to separate the body and the baby. As I write this, the first baby to be gestated in a womb donated from another woman and transplanted into the mother has just come into the world (Smith 2014). The current pregnancy discourse supports the womb as the fetus' natural habitat, made less mysterious through surveillance and monitoring. Technological capacity currently supports the perceived inevitability of the embodied pregnancy; it also, by enhancing the subjectivity of the fetus, emphasizes and facilitates risk management to combat uncertainty. Whether one goal will outweigh the other remains to be seen.

Women who are re-asserting their control over reproduction against the forces of medicalization are responding to both the alleged naturalness of embodied pregnancy and

to the fear of disembodiment and disempowerment. This perspective is exemplified by several of the women I interviewed who were reclaiming uncertainty and the expertise of their own bodies and of other women's experience. Not only do these women prefer to fully, physically experience their pregnancy, embrace uncertainty and accept responsibility for risks, they also make moral claims that their bond with their fetuses is good for mother and baby and are conflicted about prenatal testing.

While this reassertion of women's power and knowledge may be a welcome counterbalance to excessive medicalization, an "us v. them" mentality about nature and technology in pregnancy is not particularly realistic, given the technological interventions that many women access, nor is it expressive of the variety of experiences and perspectives that women bring to this debate (Aristarkhova 2005). Indeed, IVF, in which technology enables embodiment, is an example of how deeply intertwined are these two aspects of modern pregnancy. While technology is a major factor in pregnancy today, the embodied uncertainty of pregnancy is far from irrelevant for many women. Pregnancy as a lived physical state is still central to the notion of mothering and womanhood.

APPENDIX A. SAMPLING PROCEDURE AND INTERVIEWEE DEMOGRAPHICS

I interviewed 10 women between December 2013 and June 2014. Recruitment was initiated through my personal social networks, both online and in-person, and through a birthing center in Washington, DC, that is part of a national network of community health centers funded in part by the federal government to make sure that high-quality health care is available to everyone (although I did not use the interviews obtained through the latter source in my analysis). Snowball sampling was used after the initial recruitment.

Each woman I interviewed was pregnant at the time or had been pregnant within 2.5 years prior to the interview. I did not directly ask women about their household income or other markers of class, but assessed it from their educational attainment, housing situation, employment and other factors. I did not directly ask women about their race but assessed it visually and from their responses:

- Mia was a White, college-educated and middle-class woman aged 30, with two children, a 22-month-old boy and a 2-month-old girl. She stayed at home with her children and was married. She had been a youth minister before her first child was born.
- Madison was a 38-year-old, White, college-educated and middle-class woman in her first pregnancy. She was married and employed as a social worker.

- Samantha was a 25-year-old, White, married and middle-class woman in her first pregnancy who was employed as an auction appraiser and had a master's degree.
- Colleen was a 31-year-old, White, college-educated and middle-class woman in her first pregnancy who was married and employed as a manager at an educational nonprofit.
- Jenny was a 29-year-old woman in her second pregnancy. She was White, married and middle-class, with a 3.5-year-old daughter. She worked part-time in furniture and interior design.
- Sophia was a 32-year-old mother of twins, who were two and a half. She was White and middle class, and employed as a nurse. She had been single at the time of conception and was single at the time of our interview.
- Katherine was a White, middle-class 27-year-old woman with a 15-month-old boy and pregnant with her second, a girl. She stayed at home with her son, but had been employed as a music teacher before her first pregnancy.
- Lucy was a White/Asian-American, college-educated, middle-class woman aged 34 with five children. Her youngest was 9 months old and her oldest 10. She stayed at home with her children and was married. She had been a teacher and worked occasionally as an organizing consultant.

Three of the women I interviewed were practicing Catholics, two were practicing Anglicans and one was a practicing Baptist. The other either had no particular faith or we did not discuss their faith. The fairly high percentage of women who were Catholic or

Anglican, larger than the percentage of the U.S. population, was owing to snowball sampling. These faiths tend to teach that having children is the purpose of marriage and a sacred duty; therefore, my interviewees tended, probably more than the average woman, to embody this viewpoint.

My interview questionnaire touched on many aspects of the pregnancy experience. I was generally able to ask most or all of my prepared questions in interviews. I also frequently diverged from the prepared list based on interviewees' responses, which often suggested additional lines of questioning.

Following these interviews, I went through a process of open coding to identify broad pregnancy-related topics. This was followed by another round of open coding that focused on processes exhibited by my interviewees, such as when they made remarks justifying their risk assessment choices. I then re-coded the interviews to enrich these broad topic and process categories with properties and context, developing more complex codes, which I used to selectively code pregnancy texts, mommy blogs and discussion boards. Finally, I axially coded the interviews, which uncovered the two orientations toward pregnancy. Throughout, I used a combination of inductive and deductive reasoning, founded in a grounded theory perspective.

APPENDIX B. DISCUSSION BOARD DEMOGRAPHICS

For TheBump.com, published demographics skew toward women with household incomes well above the national average. In addition, women using TheBump.com are highly likely to be married, employed, homeowners and college graduates (TheBump N.d.).

For BabyCenter.com, demographic information was unavailable. However, research has indicated that those with household incomes over \$75,000 and a college or advanced degree are more likely to use the Internet to access health information (Fox and Duggan 2013).

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BIOGRAPHY

Catherine Imperatore was born in New York but raised and educated below the Mason-Dixon Line. She graduated from Thomas Jefferson High School for Science and Technology in Annandale, Virginia, in 1998. Catherine received her Bachelor of Arts in English from Virginia Polytechnic Institute and State University in 2003, and is currently employed working with publications, research and data at the Association for Career and Technical Education in Alexandria, Virginia.