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Tyralynn Frazier April 11, 2014

The Social Production of Reproductive Health Disparities

By

Tyralynn Frazier

M.A., Emory University, 2009

Advisor: Carol Worthman, PhD

An abstract of
A dissertation submitted to the Faculty of the
James T. Laney School of Graduate Studies of Emory University
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Abstract

The Social Production of Reproductive Health Disparities

By Tyralynn Frazier

This dissertation study was driven by the research question: "Are reproductive health beliefs and behaviors shaped by categories of race and/or class?" In this work, I put into practice methods from both anthropology and epidemiology, ranging from cultural consensus analysis and QAP regression analysis to ethnographic observations. I found that neither race nor class were culturally distinct categories in the domain of healthy pregnancy behaviors and beliefs. What did matter in influencing patterns of belief were close relationships.

I conducted this study on a sample of women between the ages of 18-35 in Atlanta, GA. Among this sample, having a bad relationship with one's father influenced the cultural model of health a woman holds. Having a good relationship with one's mother predicted one's ability to do what they think is important during pregnancy. Feeling connected with one's community and not being obese going into pregnancy also predicted this. Having a good relationship with one's mother also predicted the amount of stressors one encountered during pregnancy. Having a good relationship with one's partner also predicted this. Finally, all of these associations exist even when compared against a number of demographic, physical, and behavioral context factors including race. I hope to use these findings to further support the inclusion of social and anthropological theory into the development of complex epidemiological models in order to better understand disparities in health behaviors, beliefs, and outcomes.

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Dedication

I would like to dedicate this dissertation to my father, Dr. Charles Frazier. Dad, you are a trail blazer in your own right. Over 40 years ago you moved to North Carolina and became the first Black nephrologist in a southern state. You faced hurdles I cannot imagine, and the struggles you confronted will have long lasting effects in the opportunities and positive health outcomes your children and your children's children have been afforded. Thank you dad.

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CHAPTER 1

Introduction

The overarching goal of this dissertation is to understand how behaviors, beliefs, and stress exposure influence the reproductive health "risk environment" at the intersection of race and class. Using domain analysis methods, cultural consensus modeling, ethnographic observation, and a number of other mixed qualitative/quantitative techniques, I aim to embed empirical objectives into a broader theoretical argument that questions categories of race and class. The goal of each chapter is as follows:

Chapter 1: Introduction. This chapter gives a background summary of the work driving this dissertation, and a summary of the goals for each chapter.

Chapter 2: Birth, Sex, and the Body of Black Women: A Short History. The goals of this section are first, to review how Black women's bodies have been engaged in reproductive health discourses throughout history; second, to use this review to understand why reproductive health discourses are the way they are today; and third, to set up justification for my emphasis on inclusion of social theory in medical and public health studies of reproductive health and inequity.

Chapter 3: Overall Methods Description. This chapter details all of the methods engaged during the course of this dissertation work.

Chapter 4: Cultural Consensus Modeling of Pregnancy Behaviors and Beliefs. This is the first data-driven chapter. This chapter details the primary cultural consensus study performed.

Objective 1: To elicit items in the cultural domain defined by "what constitutes a healthy pregnancy," and to determine whether items in this domain differ by race and

class.

Hypothesis 1*:* Consensus exists by race/class categories in the domain of healthy pregnancy behaviors and beliefs.

Hypothesis 2*:* Variations in patterns of competency in the domain of healthy pregnancy behaviors and beliefs are associated with environmental factors that constrain access to information.

Chapter 5: Is there a Cultural Burden of Race that Makes Pregnancy More Risky for Black Women? This is the second data-driven chapter. The primary goals of this aspect of the study are as follows: 1) to use cultural consensus modeling to better understand patterns of cohesion often assumed in models of race and reproductive health, 2) to examine how cultural competence is related to self-identified categories of race, and 3) to consider other factors within the reproductive health environment that may bridge the relationship between the generally agreed upon cultural models, and an individual's ability to enact that model.

Chapter 6: Integrating Biological Embedding and Social Production Theory. The goal of this chapter is to review the biological literature that supports the social production theory introduced in Chapter 2.

Chapter 7: Birthing Black Mothers: How Race Shapes Childbirth as a Rite of Passage. Everything up to this point in the dissertation has been either empirically driven, or a theoretical framing was used to support the empirical approach. In this chapter, I loosen the empirical reins and discuss, from an ethnographic perspective, the experience of Black motherhood production that I observed during the course of my field work. The "Birthing Motherhood" perspective has been often used. I intentionally

employ this familiar phrase to quickly focus the reader on how the dynamics of race within the birthing process can influence the biocultural processes of motherhood production.

Chapter 8: Conclusion. In this section, I summarize the concluding points of each chapter. I include a brief global discussion of these conclusions, and present future directions that are bred from these concluding ideas.

Background

Race, as a socially constructed category, comes with a myriad of social meanings and experiences. In Chapter 2, I to go into detail about the historical production of racial disparities in reproductive health, and subsequently, in Chapter 7, this line of inquiry is continued with a discussion about present-day conditions of reproduction that support both bias against Black women and poor health for Black women. Here, I present the overall framework for understanding how social meanings and experiences relate to the production of racial disparities in health.

Race, as a systematic way of looking at, perceiving, and interpreting reality (Gravlee, 2009), is inherently biocultural, and results from cultural histories that have influenced current patterns of both biological outcomes and behaviors. Categories of Blackness and Whiteness have had, and continue to have social, political (Favor, 1999), and biological power in America; but representations of Blackness and Whiteness, who identifies with these representations, and how that identity is defined and experienced, are all contested categories that fluctuate with the tides of various social dynamics. Race is fluid in representation, but resilient in locus. This creates a sort of static fluidity in which race is constantly used in the same way, referred to as meaningfully bound, and

represented in medical and public health literature over and over again with assumptions of a shared and unchanging sense of concrete boundedness. But, within the lived experiences of race, representations and realities are ever-changing. This creates a paradox of race, a contradictory reality of living in an immutable category that elastically adjusts to mutable social-material circumstances. Furthermore, throughout fluctuations in meaning and representation, race has consistently mapped onto inequity and reproductive health disparity, attesting to the power of race as an explanatory category for health outcomes. There is a static consistency to race as a thing, even though the actual experience of race is not static at all.

The public health literatures document both the use of racial categories, and the effects of the race paradox on production of health disparities. Black women who do not smoke have about the same risk of pre-term delivery as non-Hispanic White women who do (Holzman, et al., 2009). The noted disparities do not appear to be simply the outcomes of economics; Black women earning incomes greater than $30,000 per year have a 48% *greater* incidence of pre-term birth than do White women earning less than $10,000 per year (Singh, 1995). College-educated Black women have a 25% *higher* incidence of pre-term births than White women with less than a high school education (Ashton, 2008). Repeated analyses have demonstrated that these disparities in pre-term birth do not reflect measured economic, or educational differences between Black and White women (Geronimus, et al., 2001). This racial reality puts epidemiologists and biomedical scientists in a difficult situation because a definition of race, in practice, is elusive; yet, individuals who define themselves as Black have considerably more difficulties with their reproductive health than those who consider themselves White.

The result of the persistent but equivocal use of race is that the March of Dimes, the Centers for Disease Control and Prevention (CDC), and a number of publications on pre-term birth outcomes list race as a singular risk factor, but neither the definition nor the meaning of race to these agencies is explained (CDC, 2013; Ashton, 2008). What is left of examined is the notion that race might or might not constitute an embodied experience or set of experiences. The notion of embodiment engaged here comes from Bourdieu's (1984) theory that conditions within one's environment over time contributes to their present day state of being. According to Bourdieu (1984), "cognitive structures...are internalized, 'embodied' social structures," becoming a natural entity to the individual. This perspective on embodiment suggests that embodiment is the deep internalization of experiences practiced over time, and over the course of development until they seem "normal." Margaret Lock (1993, 2001) expands this theory of embodiment through the concept of "local biologies." Margaret Lock first proposed the concept of "local biologies" in reference to the medicalization of female health processes. This term refers to the body, not as materially universal, but as an expression of interactions within local and historical environments, with society and with political variables.

In this study, I attempt to examine how the embodied experience of race and racial disparities in health is a result of bodies interacting with social structures to produce local biologies that can impact health outcomes. Through this process, I also attempt to address two major tensions within the health disparities literature. First is the ambiguity in how race is understood and used, coupled with the persistent observation that health disparities significantly fall along racial lines to create perceptions that race is

in and of itself a risk factor of poor health. In the reproductive health literature, it is often listed alongside very biologically grounded risk factors. This fuels the tense relationship between race-and-biology versus race-as-social product, and limits what can be said about race because this misguided dichotomy is so influenced by historical contexts that have manipulated the use of race. It becomes difficult to move past some of these constructed meanings towards real contribution. The second tension is fueled by the unspoken assumption that race is a culturally salient unit that carries with it a shared burden of experience. Countering this are voices within humanistic studies that argue for race as a heterogeneous set of experiences within the broader reality of American culture. The incorporation of heterogeneity in the use of race has permeated sociological and anthropological studies, but has been more limited within racial disparities literature in public health and biomedicine. The absences of incorporating this racial heterogeneity of experiences and outcomes leaves room for assumptions about race as culturally salient. After discussing these tensions, I attempt to address them in Chapters 4, 5, and 6 by putting race into question as a singularly cohesive category with respect to health behaviors and beliefs; and second, by including race among a number of other contextual factors from the humanistic literature. Our goal is to begin understanding that race is not insignificant, but neither is it wholly, singularly, and principally punitive.

In order to understand health outcome production, we must understand the component parts that make up the patterns of that production within one's environment (Figure 1.1). Figure 1.1 is a summary of how we currently understand the relationship between present day social environments that are a product of histories of racial divisions and health outcomes. These are complex relationships, but the causal pathway to

production takes on diagrammatic simplicity when we think about how the levels at which effects occur are related. We start with the observation that there are social environments that exist because of racial and racist histories in American that laid the foundation for its production. In Figure 1.1, I list these social environments, informed by the social determinants literature. It is important to remember that the relationship between social contexts, in this case racially mediated social contexts, and health outcomes begin with understanding the social environment into which a body is born. Proportionally, but not absolutely, Figure 1.1 illustrates that more Black women live with poverty (Macartney, Bishaw, & Fontenot, 2013), live in food deserts (neighborhoods that are predominantly African American have fewer supermarkets relative to White neighborhoods (Powell, Slater, Mirtcheva, Bao, & Chaloupka, 2007; Berg & Murdoch, 2008; Dutko, Ver Ploeg, & Farrigan, 2012), live with the reality of biased doctor interactions (Benkert, Peters, Clark, & Foster, 2006), live with limitations in the quality of available reproductive health services, live with limitations in the accessibility of available choices in care, and live with limitations in the quality of support around parenting once the child is born (Smedley, Stith, & Nelson, 2003). Disparities in these experiences are associated with poorer reproductive and child health outcomes as well. But these are not conditions inherent to being Black. There is the individual body within these environments that is central to health production.

On the other side of this diagram, Figure 1.2 illustrates the behavioral risk literature, which tells us a mixture of things. Minority populations are not necessarily engaging in across-the-board riskier behaviors (black women do not smoke more than white women) (Goldenberg, Robert, et al., 1996). However recovery from or accessing

support with those behaviors is more challenging for black women. Black women who do smoke have a harder time quitting (Ockene, Judith, et al., 2002). Minority populations are at greater risk of being overweight or obese, of having hypertensive disorder, of having gestational diabetes, and of undergoing Cesarean deliveries even when controlling for these other behavioral factors (Bryant, Worjoloh, et al., 2010). Black women tend to delay prenatal care (Kotelchuck, 1994). Black women who have increased perceptions of racial discrimination have higher levels of stress load (Pascoe & Richman, 2009). Black women who do suffer from addictions have lower rates of successful recovery (Jacobsen, Jerry, et al., 2007). Social support systems that Black women are able to access might arguably be less dense and diverse (more work is needed on this) (Pattillo, 2013). One argument that I make in chapter 7 is that Black women who engage the medical system might defer to the authority of medical interventions while holding a mistrust of the practitioner further influencing their stress load. Risk of intimate partner violence increases during pregnancy and it has been suggested that poor Black women are at higher risk during pregnancy (Palmetto, Niki, et al., 2013). This risk environment describes behavioral outcomes that are associated with poor reproductive health, most with preterm birth.

Between environments and behaviors, Figure 1.3 takes us to individual perceptions. Again, these are processes that impact all individuals, but race is a context in which there seems to be a disproportionally stronger impact for some of these elements. There are number of candidate processes that contribute to differences in individual perceptions in experience, particularly when we look at cultural studies or Black feminist literature. For example, more negative social messaging that can be stereotypical in

nature (Steele, 2011; Walton & Cohen, 2011; Stevenson, Reed, Bodison, & Bishop, 1997), stereotypical assumptions of early attachment and parenting experiences (Chapman, Thandeka, et al., 2013) that do not represent real racial differences (Dexter, Casey, et al., 2013) in these might also have a health impact. Early attachment patterns with care givers, emotional regulatory patterns that develop very early in life, and self-expectations that come from this complex interplay between the individual and the environment in which they develop (Lupien, McEwen, Gunnar, & Heim, 2009) could hypothetically impact adult reproductive health.

Furthermore, emotional patterning related to carrying the weight of the world, "sojourner syndrome," and emotional self-regulation have been used to describe Black women (Mullings, 2005). Maladaptive expectations of self, theories exist such that it seems normal to take on the weight of the world without asking for help and the "strong black woman" archetype (Brown, 2012). These are contributions from the humanistic and social theory literature that has explored the heterogeneity of the black female experience. I suggest that when trying to understand race and health we must look to ways in which the experience of race can impact health from some of these humanistic perspectives. By focusing on this entry point where social environment meets individual perceptions we can address ambiguities of what race means and in doing so begin to better understand the heterogeneity within this category.

One problem is that by focusing so consistently on race, it is actually difficult to say if these internalizations of the social environment are part of the embodiment of being Black, or if other groupings that are ignored are more significant. In general, internalizing stereotypes can be stressful beyond race (Steele, 2011). I am suggesting that the result of

ignoring the factors associated with racial embodiment, and over-essentializing all observed differences as caused by race, prevents us from understanding nuances within the environment in which an individual develops, and how that environment contributes to circumstances like poverty and lack of quality child care "getting under the skin" to promote health outcomes such as pre-term birth. How do I reconcile this tension between the over-essentialization of race verses the over-trivialization of race?

As an example of the importance of these issues in understanding and ameliorating health disparities, consider the association of Black race and bacterial infections in pregnancy. Black women are at higher risk for bacterial infections associated with increased pre-term birth risk (Allsworth & Peipert, 2007). Stress (Nansel, et al., 2006), the number of partners (Barbone, Austin, Louv, & Alexander, 1990), access to and trust in the medical system (Haggerty & Ness, 2006) are just a few factors that also impact risk of infection, and they are all factors that have been influenced by multi-level social factors associated with the inequities of race. Authoritative voices within the medical community acknowledge that multi-level social factors such as poverty and exposure to racial biases make up the inequities that drive racial disparities in reproductive health (Bryant, Worjoloh, Caughey, & Washington, 2010). But, as we see in Figure 1.4, in reproductive health care, the woman, with all of her internalized perceptions and behaviors, can get blurred out and the individual, defined as Black, becomes the focus. Blackness, as associated with the social environments defined above, becomes susceptible to more stereotypical, overly general, or under-analyzed community level outcomes. In Figure 1.4, I am illustrating that the "Black body" seen as a product of disadvantaged social environments results in stereotypes about these communities.

These stereotypes can be implicit or explicit but non-the-less damaging (Steele, 2011). This undefined grouping creates "they" categories. I say this intentionally because we know that referring to a racial group as "they" does indeed have racist undertones because it is an over-generalized grouping. We also know that blurring out the individual leaves the door open for stereotyping. Stereotypes like "they" devalue or do not care about their neighborhood (Hawkins, 2001; Anderson, 1992), "their" bodies are naturally different (Henderson, 2010), "they" are at higher risk and need intervention, or "they" are less attentive and cannot care as well for their children (Berger, McDoniel, & Paxson, 2006) already exist within America society. Figure 1.5 illustrates my argument that not incorporating the individual within the causal pathway from environment to outcome contributes to the persistence of racial and class disparities in negative social environments, because it is through the authority of scientific or empirical understanding that effective interventions are produced and funded. But, the presence of authoritative studies linking race to these outcomes in a society where race is stereotyped leaves the understanding of race vague or ambiguous, so it really does not debunk or address the stereotypes. This becomes a cycle of reinforcement via the absence of information, or the presence of overly vague information that can be used to make assumptions about racially different social environments. The reality of race is that there is a lot about the experience of race that the public health and medical communities do not understand. In Figure 1.6, I illustrate that we have begun to look at how stress differentially impacts an individual at different stages in development. What are the stressors in which race causes an individual to be exposed to at different developmental stages, and how might this exposure impact adult health outcomes?

Like the ebb and flow of tide waters, race changes but predictably endures (i.e., is re-produced), and racial tensions oscillate with political unrest and economic distress. The tidal gauge of economic distress predicts the water level of racial tension from a distance, over a period of time (Becker, 1971). What is ignored is the individual variation embedded within these political economies that both shape, and are shaped by, the broader structures around them. In short, what is ignored is the individual. How does the "noun" of an individual's race, the identity "I am," act as a verb within that individual's body? Why is this important? It is important because individual biologies of health and illness are being produced in the context of the fluid resilience of race in America.

What is the mechanism for understanding these racially contextualized biologies? These discussions can begin by looking back through time. History can help us understand the production of local biologies, health outcomes, and health disparities by increasing our understanding of the social dynamics at play within the environment one experiences. The figures presented in this section illustrate that the relationship between race and health is really a discussion about the relationship between social inequity, the biological impact of that inequity on the individual, and ways that inequity can loop back into the production of further inequity if it remains under-examined.

The reality is that within the social environment, racial disparities exist in many dimensions of life, and they all have an impact at the individual level. Economic inequity and poverty have an embodied impact on a woman's health. Environmental quality disparities exist, such as limited access to nutritious food or food in general, higher exposure to environmental toxins, or environments with higher rates of crime (Krieger, 2005). Medical care disparities exist such that doctor-patient interactions are shaped by

mistrust (Smedley, Stith, & Nelson, 2003). Medical access disparities exist such that health deserts occur where quality health care is far away, or difficult to gain access to. There are also disparities in health-related services not covered by insurance that impact the quality of a women's reproductive health experience (doula, water birth, etc.). Finally, among social safety net recipients, disparities exist (Schneider, Zaslasky, & Epstein, 2002). This is about the non-medical component of health production, comprising those things that help us feel connected in the way that feels good. All of these disparities are the products of events over the course of history that have brought us to our present day.

Oftentimes, focusing on outcomes leads to an understanding of difference with no real understanding of the substantive causes of those differences. This is a form of the ecologic fallacy that results in misclassification of the individual, and in failing to measure the experiences that promote such outcomes (Figure 1.4). The dynamics of race have a generalizing and naturalizing component whereby we assume "Black people do" or "White people do." Based on the above discussion, it is my argument that community level outcomes become associated with racial groups such that assumptions about value placed on neighborhood environments are made, and perceptions that bodies are "naturally different" are developed. This creates a context vulnerable to increased bias and increased assumptions about the need for intervention and, in some cases, increased justifications for patronizing behaviors by voices of authority that further decrease the emotional safety and support for the new mother and the new family (Figure 1.3).

Much of this work supports the idea that when we look from an historical perspective, we find that race and health associations are a way of understanding social

inequity and health production. Many thinkers have connected racial inequity with broader social realities such as the prison industrial complex (Alexander, 2012), disparities in employment (Williams & Collins, 2001), disparities in single parenthood (McLanahan & Percheski, Family Structure and the Reproduction of Inequalities, 2008), and many other undervalued factors that re-inscribe the problem of race. Based on previous incarceration rates between 1974 and 2001, the Bureau of Justice Statistics (2003) has predicted that 33% (1 in 3) of young Black males can expect to go to prison. In a recent public speech, Dr. Angela Davis further added that 20-30% of young Black men are, or have been, in jail, and 70% of Black mothers are single mothers (Davis, 2009). Americans live in a system that incarcerates Black men disproportionately, and normalizes Black single motherhood. What is emerging within this picture is a social context in which individual risk factors for pre-term birth outcomes are being compounded by multiple social factors to create a unique category of risk called race. For example, the establishment of home ownership and access to property rights reflects, in part, freedoms and limitations in individual capital. But racial identity has historically dictated who has access to property. Whiteness served as a guarantee against slavery: even poor Whites had property rights in their racial identity. Although the institution that established such privilege is gone, the inertia created by histories of White privilege has impacted patterns of gentrification, racial flight, and personal capital throughout American history (Fullilove, 2005). Such multifaceted influence means that the material deposition of property ownership and racial identity, once supported by laws, now persists in where one lives and buys a home. Where one buys a home is an indicator of short-term stress and long-term health outcomes, access to quality food, access to quality

education, and general feelings of safety and well-being (Aneshensel, 2008). These patterns of influence contribute to an entrenched and inert structure of inequity that, over time, becomes normalized.

I cannot stop at race when I get to the level of the individual because it is not "race" that comes into the reproductive health clinic, it is a complex individual who has an embodied racial experience. I also cannot assume one's visual appearance is an indication of how that individual has embodied race. Race, as an endpoint risk factor, reinforces assumptions about negative social environments and experiences that, in turn, reinforce biases that support the continuation of assumptions of and encounters with race. With other pre-term birth risk factors, such as infections, I might be able to say that the cause of this pre-term delivery is, for example, bacterial vaginosis, and address the biological problem. Race is not an infection, though. I cannot say "the cause of the pre-term birth is Blackness." Race is not a treatable or manageable "risk." It is the embodiment of race as it relates to reproductive health that should be the target of intervention. To this end, I must focus on intersecting points where the private space of the individual and all the truth that individual carries will encounter the social sphere, with all of its racially mediated patterns of inequity. This is where health disparities are produced, and race emerges as a cause of poor reproductive health.

Anthropologists and epidemiologists who have examined the psychosocial nature of racial disparities, specifically in reproductive health, often converge on the conclusion that internalized racism over the life course, and not a single racist act, seems to be a factor in the production of these disparities (Dressler, et al., 2005; Geronimus, et al., 2006; Hogue & Bremner, 2005). Mothers' reports of experiencing racial discrimination

are associated with lower birth-weight babies (Collins, et al., 2000), and these feelings influence trust in health care providers (Benkert, et al., 2006). Such trends occur irrespective of socioeconomic status or level of education. Gravlee et al.'s (2005) work on skin color and blood pressure illustrates the point that processes such as social classification mediate the relationship between skin color and blood pressure. In his work, he found that differences in blood pressure were related to ascribed color rather than visible skin pigmentation based on reflectometry. More recently, Gravlee and others have advanced a strong evidence-based argument that health inequalities are more likely related to sociocultural factors shaped by race than by underlying genetics alone (Gravlee, et al., 2008). Even when underlying genetics were found to differ by race, it has been shown that it is really the environment in which those genes exist that is most important in determining if negative behaviors such as alcoholism are actually expressed (Brody, Beach, Philibert, Chen, & Murry, 2009).

Social determinants theorists such as Krieger and Williams, and medical anthropologists such as Dressler, Gravlee, Hruschka, and many others laid the ground work for the ideas presented here. Beginning with Krieger's (2005) introduction of the importance of using multi-level, socially integrated modeling to understand complex association such as racial disparities, social production theory starts with a framework of the socially integrated individual. Dressler et al. (2005) first suggested the use of the structural-constructivist framework as one perspective of building a more empirical understanding of what race is, and how racial differences in health outcomes are produced. Constructivism, from this perspective, refers to the generation of knowledge and meaning built through experiences in the world; mental states or schemes are made

of thoughts, feelings, and judgments people hold as they encounter social structures. These structures are the material resources to which individuals have access. The power to access these resources has a lot to do with the type and amount of capital an individual has (Bourdieu P. , 1984), including economic capital, social capital, intellectual capital, political capital, and so on. Capital is used to exert influence and power within an individual's immediate environment. At the intersection of constructed meaning and objective social structures sits an individual with biologies that develop in the context of forming constructed meanings. Thus, as defined by Margaret Lock (1993), biologies also respond to the structures in which constructed meaning is embedded. This is one way of understanding how social embodiment impacts individual biologies.

From this perspective, empirical questions about the relationship between individual experiences must focus on how individual biologies are produced in the context of social realities, and how these social realities influence the production of these biologies (Lock, 1993). More concisely, empirical studies need to intentionally take on the cultural constructivist approach in order to produce knowledge about race and racial health disparities that can be incorporated in an impactful way. This means that social theory offers an essential value to empirically framed questions within public health and medicine because social theory offers a way of empirically incorporating cultural and social nuance. The social theory perspective used in this work is called The Social Production Theory. Derived from a structural-constructivist point of view, social production theory says that social determinants of reproductive health are working together to create a category of risk called race, and now beginning with this category, I need to understand how it is functioning to produce disparities.

Unfortunately, the above nuance gets completely lost if I hold to the particularized notion that race alone is inarguably bound, a natural category. When medical, biomedical, and epidemiological publications continue to have a limited understanding of how race functions at an individual level to produce the patterns of racial health disparities observed today, this inextricable boundedness is passively reinforced. Race and ethnicity are rarely defined in journal articles (Gravlee & Sweet, 2008), and even when race and ethnicity are defined, they and their constituent categories are rarely explained in any depth (Williams, 1994). Such limited treatment constrains our understanding of the relationship among biology, race, and the political economy, and leaves room for vagueness and over-generalization.

This vagueness can create an illusion of information that actually is not very informative. Vagueness or ambiguity, in our understanding of race, allows authoritative peer-reviewed publications to be interpreted with the same static fluidity that perpetuates the very system of race that persists without clear paths towards addressing racial disparities and disadvantages. For example, the 1993 Revitalization Act required that publicly funded research include women and minority subjects. In response, the National Institutes of Health (NIH) adopted the Office of Management and Budget [OMB] (1977) racial and ethnic categories initially defined for the census. In response to this, at a CDC workshop in 1993, it was stated that the directive “has no scientific basis and has institutionalized poorly conceived concepts and the misuse of race and ethnicity data in public health." In 2013, the OMB directive was still in place. These categories are used to document the existence of health disparities, but the limitations in what these categories mean have impeded our understanding of why disparities are so recalcitrant.

A consequence of this illusion of information is diminished efficacy in application. When I stop with race, instead of starting there, another consequence of racial vagueness is that it limits the flexibility and influence of the empirical literature on the social structures that contribute to the paradigm of racial health disparities. If I do not understand how race is acting within the context of these studies then, from an intervention perspective, patterns of health disparities can only be observed but elude change through effective intervention. This is important because in this era of translational research, where the bridge between basic science and its application in real world practice is being built, many of these publications have limited traction.

The fluidity of race and class experiences from generation to generation mean that members of the same family may differ by changes in socioeconomic status, how behaviors are valued, and the very power to access resources within the structures in which the family is embedded. This complicates what the bounded categories of race (or family) really mean. True, historical contexts have fostered current day social environments where embodied poverty, food deserts and nutritional knowledge, biased doctor interactions, quality of available care, accessibility of available choices, and quality of parenting and pregnancy support services are disproportionally negatively affecting Black populations. But there is a space between that complex historically-informed environment and that individual.

In Figure 1.1, I illustrate that there is an individual who is both receptive to and responsive to the environment they are in. In the center of the figure we have “allostatic burden” or load. Allostatic load is one of the well-developed mechanisms for understanding physiological response to environmental exposures. This term, coined by

McEwen and Steller (1993) describes how interactions between the immune system, the endocrine system, and other bodily systems change homeostatic set-points due to repeated and/or chronic exposure to environmental stressors. Allostatic load consists of a variety of biological measures of biological stress response activation. These combined measures have enabled many researchers to explore variations in the individual stress response in the context of shared ecological conditions (Bindon, et al., 1997; Crews, 2003; Jackson et al., 1996; McDade, 2001; Panter-Brick & Worthman, 1999).

In the context of the race environments, and in the context of individual perceptions, I am arguing that individual behaviors are driven by something within this space that impacts the interplay among allostatic load (costs of coping with stress: emotional, physical and metabolic), attempts to deal with, cope, or buffer the stress experienced from allostatic load (for example, Buffering hypothesis), and the health consequences that result from these attempts (for example, John Henryism). When we look globally at how we understand race and stress activation, one conclusion that I am proposing is that the physiological consequence of this search for balance likely depends on how perceptions developed early in life. What we need to better understand is how internalized stereotypes and social meaning, early attachment patterns, emotional regulatory patterns, and expectations of self are influenced by early life experiences because it is these factors that influence adult patterns of allostatic set points. Higher allostatic set points means a body is more susceptible to negative birth outcomes (Porges, 2006), as well as an individual at higher risk for engaging behaviors that create an individual more “at-risk” for pre-term birth (McEwen, 1998).

Taking this long view in the context of reproductive health suggests that we must

start with the female body even before reproduction occurs, in order to understand how social conditions influence reproductive health outcomes. In Figure 1.4, we illustrate this by showing that stress at different stages of development will have a different long-term influence on health outcomes (Hertzmen & Power, 2004; Hertzmen & Boyce, 2010). But, I must also bound the discussion or else there will be too much to talk about. In the context of the social production of reproductive health, I focus on the female body going into pregnancy until the birth. This dissertation concludes by asking: What are the environmental stressors that shape reproductive health starting before conception until birth?

From this perspective, stress load must not be assumed but explained. Furthermore, downstream stress outcomes must be understood with an eye towards the stress load component that is causing them. Though I do not measure its direction in this work, I am particularly interested in stress load because the way in which social context is most directly embodied is through the biological activation of the stress axis. Obesity, smoking, nutritional deficiency are all conditions that I do address in this work, and they are conditions that are either the product of, or produce, dis-regulated stress load (McEwen, 2000). They also can negatively impact not only birth outcomes, but perceptional health and pregnancy health, along with birth outcomes and trajectories of child development (Latendresse, 2010). These biological impacts are irrespective of the stressor that causes elevations in physiological stress load. The evidence clearly shows that outcome disparities in reproductive health exist by race, and that there is a socially produced component to race.

This is why race in interesting to study as a starting point. This is an obvious social context to begin with because it is clear that something is going on with race and reproductive health outcomes, however, understanding this link is complex. What I seek to comprehend in this study is how more contextualized components of race contribute to health production in the context of reproductive health. I have argued that race, as a culturally constructed concept, has both fluidity and resilience, and tracked examples demonstrating how race is fluid in representation, and resilient in locus. Moving forward, this introduction aims to define the Social Production Theory as a unified way of shifting racial disparities studies from focusing on race as a category of difference towards a focus on understanding racial differences as a product of socially embedded inequity.

In building the case for why models of health disparities and health, in general, must be more substantively informed by social theory, I look to Clyde Hertzman's (2013) theory of biological embedding This is his term for the mechanisms through which the social production of health disparities occur. In this chapter, I will present Hertzman's theory and the conditions under which these theoretical mechanisms of action are occurring. I will then incorporate Hertzman's ideas into the social production perspective to illustrate that social production theory is biologically plausible. Finally, I will discuss how the social production theory can, and should, be used in biological embedding studies as a way of understanding the "social" component of the embedding process. Ultimately, this perspective argues for more deliberate conversations across medical, biomedical, public health, and anthropological fields.

What is Biological Embedding?

According to Clyde Hertzman (2012), biological embedding occurs when these four conditions are met:

1) Condition 1: Experiences occur that impact humans in such a way that biological and developmental processes are changed. They "get under the skin."
2) Condition 2: Experiences can be systematically differentiated within social environments, and these systematically different experiences (particularly those felt during early development) can have an impact, systematically, on bio-developmental states.
3) Condition 3: The systematic conditions that create systematic differentiation are stable, and they can be long lasting.
4) Condition 4: The effects of these conditions can impact health, well-being, learning, and/or behavior over the life course and, under certain circumstances, across generations.

In presenting this perspective, Hertzman builds the case for biological embedding by beginning with animal models that support the above conditions. The primary model of action he presents is the LG-ABN paradigm from pre-clinical research with rodents. In mice, mothers demonstrate affection through licking, grooming and arch-backed nursing. The acronym for such displays of affection is LG-ABN (licking-grooming-arch-back nursing). There is a narrow window early in development where mice can receive high or low levels of such behavior, and the pattern of affection within this narrow window of days determines differences in HPA-axis function throughout the mouse's life. High

levels of LG-ABN are associated with an HPA-axis pattern such that baseline corticosterone levels are low, there is a rapid response to acute stress exposure and a rapid decline thereafter. Low LG-ABN is associated with wide-ranging responses that are typified by higher baseline levels and a more "blunted" response to stressful events.

There are also epigenetic mechanisms that impact, for example, the LG-ABN paradigm. The genes that are encoding glucocorticoid receptors (GR) are expressed differently depending on maternal LG-ABN behaviors. Low levels of LG-ABN are associated with the down-regulation of GR expression. This down-regulation leads to elevations in HPA reactivity expressed as more fearful and anxious behavior. Conversely, high LG-ABN was associated with down-regulation of HPA-reactivity. This was expressed in the mice as bolder, less fearful behavior. Their behavioral differences were persistent enough that they could be passed to the next generation literally from the inside and the outside (Diorio & Meaney, 2007; Weaver et al., 2004).

According to Hertzman (2012), the animal model meets the conditions in this way:

1) Condition 1: The effect occurs only by LG-ABN differences, and there is a critical window of days in which this effect occurs. This stimulus/deprivation model is clearly linked to patterning in a biological process.
2) Condition 2: The observation that HPA is changed in such a systematic way supports this condition.
3) Condition 3: High-LG-ABN pups have reduced total lifetime secretions of corticosterone compared to the low LG-ABN group.

4) Condition 4: Low LG-ABN pups demonstrate continued declines in their memory, cognitive processing, and learning abilities as they get older.

This example focuses on the HPA-axis biological pathway, but other systems and mechanisms can be affected in this embedding process. I will discuss in more detail about the HPA-axis, immune function, autonomic nervous system, social affiliation systems, prefrontal cortical development, and how processes that integrate the communication between various systems can be influenced by embedding mechanisms.

Generally, what is being observed is that maternal affection influences baby's development in such a way that the effect persists into adulthood and is generationally transferable. For example, not only is HPA-axis development affected by maternal attention, the subsequent maternal behaviors of those pups is influenced as well (Salmon & Shackelford, 2011). Gong et al. (2012) found that female mice exposed to chronic mild stress at 7 weeks had decreased neonatal offspring survival, lowered birth weight in offspring, decreased adult body weight in offspring, decreased memory performance in offspring, and higher levels of emotionality in offspring as adult mice. Such changes likely involve the production of, and receptor density for, stress hormones and oxytocin. Hippocampal volume and neurogenesis were reduced in the offspring of depressive dams whereas GR expression in the hippocampus was increased (Morley-Fletcher, Mairesse, & Maccari, 2013).

Maternal stress can have multiple pathways towards impacting child development. Maternal stress and depression, maternal stress and diet, maternal stress and exercise all have a prenatal impact on fetal development in such a way that the embedding conditions might be met (Boyce, Sokolowski, & Robinson, 2012). Postnatal

conditions associated with maternal stress can also have an embedding impact. Immune function is associated with low socio-economic status (SES). Cohen et al. (2006) obtained data from healthy adult volunteers on both childhood and adult SES before experimentally exposing them to a rhinovirus, and examining whether they developed a clinical cold. Employment in adulthood and parental home ownership in childhood predicted a lower likelihood of developing a cold after the viral exposure. These conditions suggest childhood susceptibilities that, when coupling the biological embedding approach with social production theory, could provide a powerful understanding of the direct ways in which embodied poverty might be acting on immunological and metabolic processes (Danese et al., 2009). Neurological processes, such as the co-impact of serotonin reuptake inhibitor antidepressants and prenatal maternal mood on developmental milestones related to language acquisition, and cardiovascular processes. The co-impact also impacted the social affiliation processes such as the effects of attachment security, and EEG activity on the acquisition of social skills (Almas et al., 2012).

Maternal diet is another route towards long-term impact that might be influencing the embedding process. Animal models have demonstrated that maternal diet has an influence on postnatal outcomes in offspring (Pasternak et al., 2013). More specifically, it has been observed that, in rat models, maternal diet may have *in utero* influences on fetal brain development (Halfon et al., 2014). Furthermore, linkages have been made between the development of metabolic syndrome and prenatal exposures to maternal obesity (time specific). Early life exposures to excess calories and limited activity (time dependent and socially structured) represent an endophenotype on the pathway toward emergence of

type II diabetes (Halfon et al., 2014), but there seem to be biological pathways following the biological embedding paradigm that might directly influence both of these endophenotypic representations.

Poor maternal nutrition, or a nutrient deficient diet, is also presumed to impact offspring health, and is a possible mechanism at work among very low SES populations. The Dutch famine that occurred during World War II has offered a natural experiment through which the effects of malnutrition have been studied. Babies born during the two years of the famine had poorer glucose tolerance as adults, than did those born in the years preceding or following the famine (Painter et al., 2008).

In early childhood, maternal physiological influences diminish when the child is weaned and thus biologically separated from the mother. But the environment the child is in can continue to have a biological embedding impact. For example, more exercise during childhood and adolescence seems to have a protective effect on bone health that can be maintained, and reinforced by the cumulative effect of exercise on bone health during later life. One thing to note is that this process is often discussed as timing sensitive. While windows do exist, the potential for reopening them has been explored (McEwen et al., 2009). In the next section, I will discuss the biological mechanisms susceptible to the embedding process.

What are the Candidate Mechanisms of Biological Embedding?

Candidate mechanisms supporting the embedding process are:

HPA-axis. Globally, HPA-axis activation is the biological action of the stress experience. In the LG-ABN example, pups experiencing low levels of affection during a critical window of development experienced cognitive and learning deficiencies that were

persistent. The link between affection and learning deficiencies is not completely clear, but one implication in humans is that increased levels of cortisol exposure are behaviorally expressed as more fearful and anxious behavior. In the fully developed brain, high anxiety states that persist lead to mental rumination and negative, preoccupying thoughts about the anxiety itself that consume some of the resources of working memory (p. 254); one of the key processes involved in learning (Romeo, 2013).

Working memory has been called the "chalkboard of the mind." It is the mental process involved when I say that I am "thinking about something." It allows us to reflect upon items perceived in the present and recalled from the past. When we consciously think of a problem or an event, working memory allows us to link together various representations and manipulate them in our mind. The product of such cognitive processing can then enter a more stable component, long-term memory. In some individuals with disorders of attention, working memory appears to be unable to handle as many items for as long as the working memory of non-disordered individuals. Imaging studies have supported this clinical finding by identifying abnormalities in the lateral prefrontal cortex, the site thought to be a primary mediator of working memory (Reyne, Chapman, Dougherty, & Confrey, 2011).

A broad understanding of the impact of persistent and unconstrained feelings of stress (i.e. HPA-axis activation) means a more narrowing of thought. This means that it is harder to think in nuance, and thinking becomes more categorical such as "X is good and Y is bad." This narrowing decreases cognitive flexibility. This is an understanding from the perspective of a mature brain. The impact of stress on the developing brain can be more poignant because there can be organizational impacts that persist, as seen in the

LG-ABN example in mice. HPA-activation might be working at many levels of development from *in utero* exposure, to elevations in HPA-axis activation, to adolescent elevations in HPA-axis activation that might further expose negative experiences that occurred earlier in childhood (Reyne, Chapman, Dougherty, & Confrey, 2011).

Autonomic Nervous System. The autonomic nervous system is another mechanism through which I can understand the process of biological embedding. This system is comprised of sympathetic and parasympathetic pathways. The parasympathetic system is associated with growth and restoration. The sympathetic nervous system is associated with metabolic changes to deal with challenges from the external environment (Mai & Paxinos, 2010). Sympathetic activation involves the withdrawal from social engagement, and the conservation of processes in order to mobilize a response. Parasympathetic activation is characterized by processes that support social engagement and extensions outward such as exploration and curiosity. The more easily one can shift from sympathetic activation to parasympathetic activation, the more quickly one can calm the physiological and mental processes associated with fear, anxiety and elevated mobilization responses. Stephen Porges (2011) discusses this level of control in terms of the polyvagal theory. According to Porges, one's ability to shift depends on one's vagal tone. Vagal tone is susceptible to the embedding process. In general, young children with a high vagal tone level present more positive psychophysiological, behavioral, and social performance, as well as predictive outcomes in mental, motor, and social skills. Heart rate variability has been linked to a wide array of variables, including: behavioral inhibition, sympathy, instrumental coping, attention, and temperament. While a higher vagal tone is typically indicative of more adaptive functioning, newborn infants with high

baseline levels of vagal tone were found to be highly reactive and irritable. By the age of five to six months, vagal tone was found to be positively related to interest and positive expressiveness, while negatively related to internalizing stress.

The Immune System. It is difficult to separate HPA-axis activity from stress-related immune activity because embedding mechanisms associated with immune activity are working in conjunction with HPA-activation. Early exposure to maltreatment or abusive conditions, on the HPA-axis side, creates a general blunting of cortisol secretions but a hyper-sensitivity of GR to the cortisol present. These conditions also create dysregulated immune functions such that inflammatory markers are elevated in adulthood in children exposed to maltreatment early in life (Ehlert, 2013). Interleukin (IL)-6 and C-reactive protein (CRP) have been shown to be significant indicators of the relationships between inflammation and maltreatment. In one study, maltreatment was measured at numerous time points between ages 1.5 and 8 years. Both Il-6 and CRP levels were measured at age 10 and CRP at age 15. At age 15, elevated CRP levels were strongly associated with exposure to maltreatment between 1.5 and 8 years (Slopen et al., 2013). Other studies have also shown that maltreatment early in life predicted elevated CRP levels during adulthood, even when controlling for low socio-economic status during childhood (Danese et al., 2009). In all of these examples, I see a latent impact where adolescence is a time of unmasking early childhood exposures.

This latent effect in the relationship between HPA-activation and immune function has also been demonstrated in connecting *in utero* events to adolescent outcomes. While the timing of exposure during development is critical, the pattern of exposure across development is critical as well. For example, prenatal activation of the

immune system in mouse models predisposed the growing fetus to hypersensitivity of the HPA activation only when postnatal stress was present. Furthermore, the prenatal immune activation strikingly elevated susceptibility alterations in the pubescent response to stress, creating a delay in the arrival of the impact that the environmental hit could have on the individual (Giovanoli et al., 2013).

Social Affiliation System. Discussing aspects of social affiliation that might be susceptible to biological embedding is difficult because this involves multiple overlapping processes. One example system is oxytocin. Oxytocin administration may increase sensitivity to social salience cues, and the interpretation of these cues may be influenced by contextual (i.e. presence of a stranger versus friend) or inter-individual factors (i.e. sex, attachment style, or the presence of psychiatric symptoms). When social cues in the environment are interpreted as "safe" oxytocin may promote prosociality, but when the social cues are interpreted as "unsafe" oxytocin may promote defensive and, in effect, "anti-social" emotions and behaviors. Likewise, oxytocin appears to promote such agonistic tendencies in individuals who are chronically predisposed to view the social milieu in uncertain and/or in negative terms (e.g., those with borderline personality disorder, severe attachment anxiety and/or childhood maltreatment) (Olff, et al., 2013).

One of the underlying mechanisms behind these stress regulatory findings appears to be that oxytocin has direct and indirect inhibitory effects on the (central) amygdala (LeDoux, 1994). In rats, it was shown that oxytocin-binding to its receptor in the amygdala inhibited activity of neural populations that project to hypothalamic and brainstem areas regulating peripheral stress and fear responses respectively (Huber et al., 2005; Viviani et al., 2011). The complexity of understanding biological embedding is that

candidate mechanisms, in some cases, interact with each other in varying ways and degrees to create poorer health. Such interactions can have compounding impacts on the individual.

Compounding Factors. An individual exposed to maltreatment in childhood might experience narrowing of thought, hyper-vigilance, and increased anxiety over their life course. This means increased exposure to cortisol and/or blunted response but hyper reactivity of the GR. This individual has a decreased ability to turn off the HPA-axis response, or to shift from sympathetic to parasympathetic activity. This means difficulty shifting from mobilization behaviors driven by fear and inward focus to outward extending, curiosity, interest in exploring, and increased access to the processes foundational to learning, such as working memory. These individuals also likely have elevated inflammation throughout their body, increasing their risk of cardiovascular and other inflammatory related diseases. In general, such persons go through life literally seeing through the lens of decreased sense of safety, whether the world is actually unsafe or not. This creates a mismatch where the environmental demands placed on the individual's cognitive system and his or her current cognitive flexibility might be driving one's experience of diminished capacity or ability within that environment (Reyne, Chapman, Dougherty, & Confrey, 2011).

From this perspective, childhood and early development is a time of resilience-resource allocation. Compassionate, supportive and emotionally responsive environments build up resilience reserves, while non-responsive, abusive and/or "unsafe" environments deplete resilience reserves. During the tumultuous adolescent transition, when emotional resilience is called on if the reserves are there, then one can more quickly engage the shift

away from mobilization towards a base line that assumes the world is basically safe. If there are no reserves, then one is unable to adapt to the emotional environment, and this inability inhibits one's capacity to adapt to the functional or cognitive demands of any particular task. From this perspective, students with poor cognitive abilities have a narrower range of adaptability (Reyne, Chapman, Dougherty, & Confrey, 2011). More generally, beyond adolescent years into adulthood, higher anxiety and reactivity, elevated blood pressure, narrower cognitive flexibility, higher inflammatory response to stress, and decreased seeking out behaviors occur in various ways and to varying degrees depending on the individual.

Embodied poverty, food deserts, biased doctor interactions, quality of available care, accessibility of care, and quality of support services are all factors that take their toll on a woman's reproductive health system. These are the factors from which this dissertation commenced with because they contribute to racial inequities both in reproductive health, and in reproductive health outcomes. They are also factors through which processes of biological embedding might be working. Embodied poverty, for example, refers to the toll that the constellation of factors associated with poverty takes on the individual. Endemic unemployment, poor quality of education, and higher exposure to crime are all conditions that consistently relate to living in poverty in the U.S. The social reality of these conditions is that mothers feel less safe, have lower levels of access to materials needed to care for children, experience more strain, and are less stable. All of these conditions work together to create a context in which the mother is systematically more stressed. This leads to experiences that have the potential to impact developmental processes at the biological level of both the mother, via stress, and the

child, via maternal stress, and environmental conditions that reinforce “getting under the skin.” The social production paradigm is a way of operationalizing the relationship between social environments and the systematic presence of “under the skin” biological processes. Over the course of this dissertation, I will expand on these statements in more detail, and provide evidence and explanations for the bridging of the Social Production Theory and biological embedding.

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Figures and Table

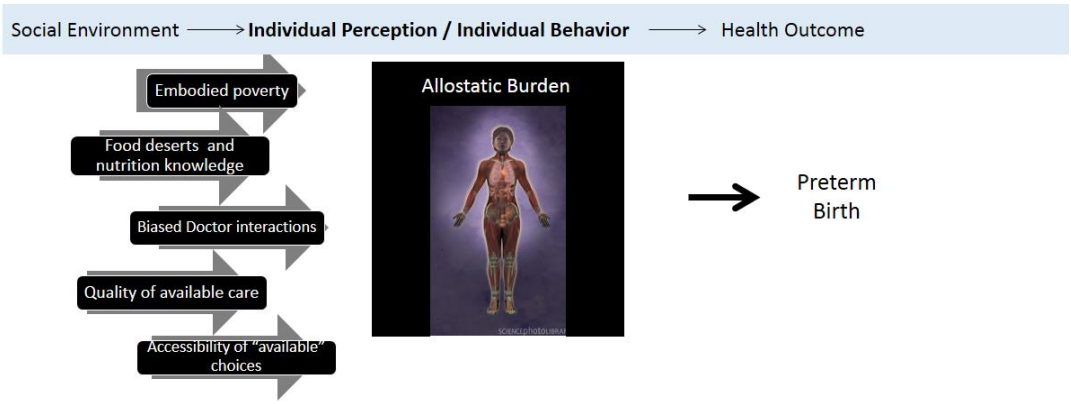

Figure 1.1. The Social Environment**.** Historical contexts have led to current day social environments where embodied poverty, food deserts and nutritional knowledge, biased doctor interactions, quality of available care, accessibility of available choices, and quality of parenting and pregnancy support services are disproportionally negatively affecting Black populations. These environmental exposures contribute to disparities in health outcomes such as pre-term birth.

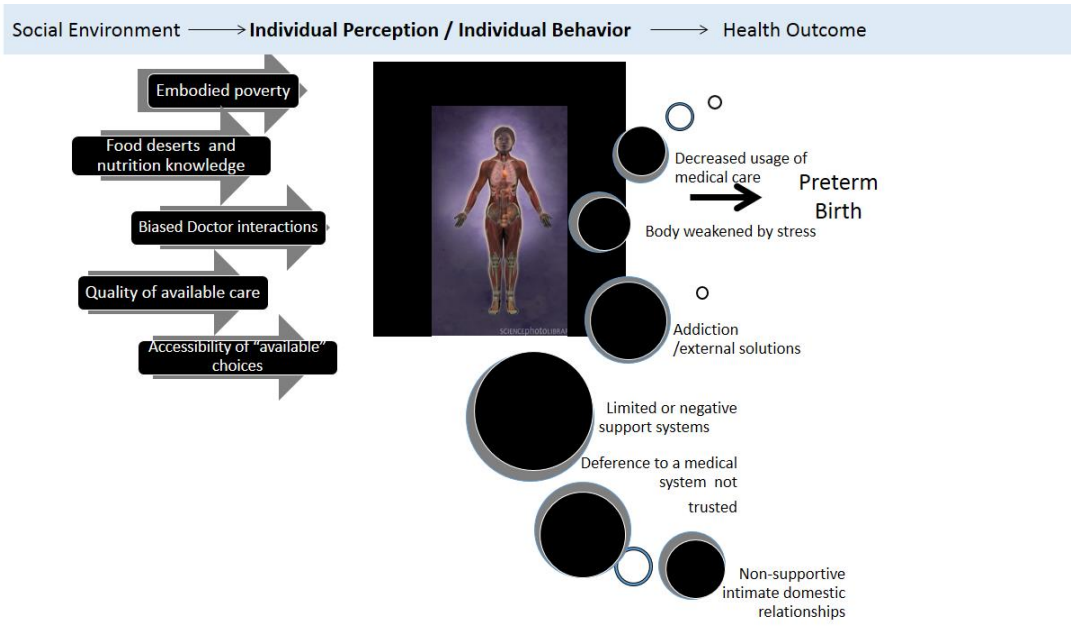

Figure 1.2. The Behavioral Risk Environment**.** This is a summary of the behavioral risk environment. Racial disparities in behavioral risks have complex patterns of presentation.

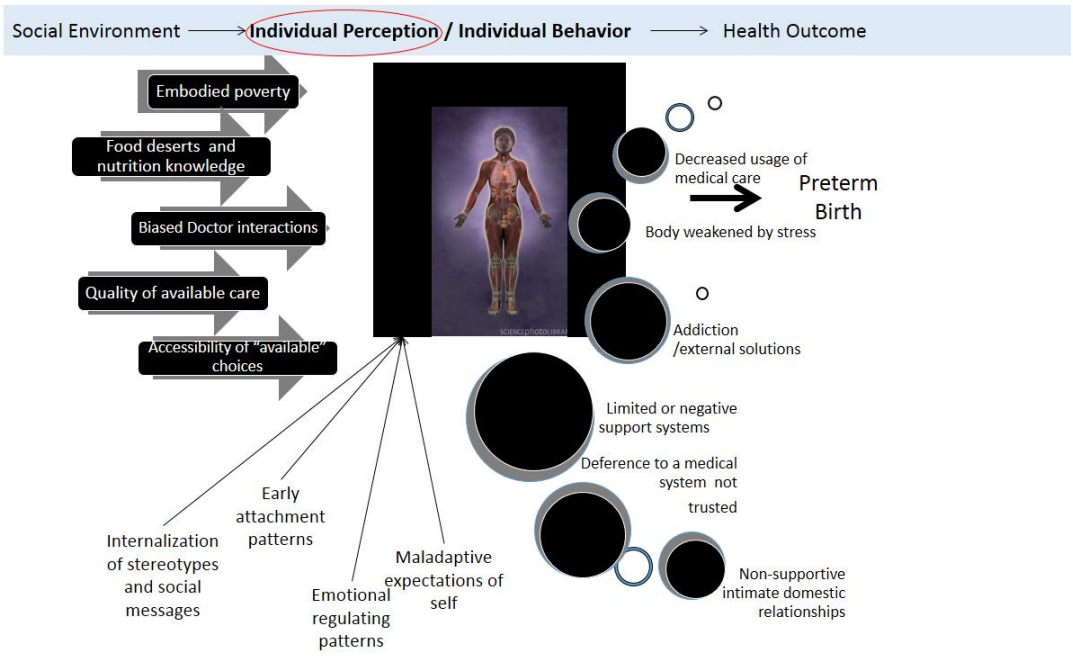

Figure 1.3. Individual Perceptions**.** This is a summary of topics that help us understand how individual perceptions might be shaped. These have been explored across a number of humanistic disciplines, and such explorations are worth considering within public health studies.

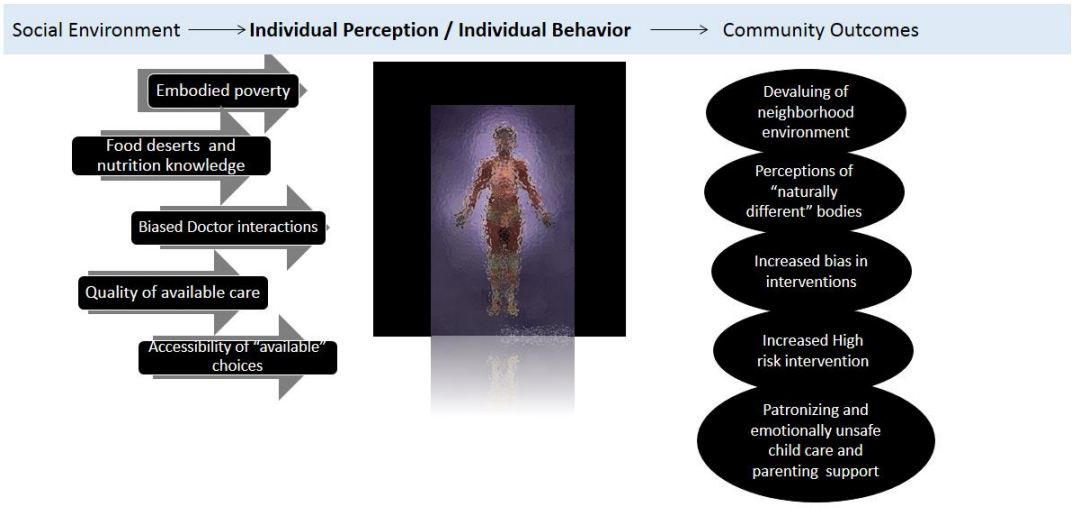

Figure 1.4. Decentralized Bodies**.** Persistent authoritative voices acknowledging disparities, but not actively engaging with the social context producing those disparities, while simultaneously focusing on disproportionalities in the biological outcomes can create a situation in which the individual gets blurred out. What is seen and experienced are the community outcomes above. This is generally known in the epidemiologic literature as the "ecologic fallacy," but its effect on interpretation of epidemiologic data on racial disparities is often overlooked.

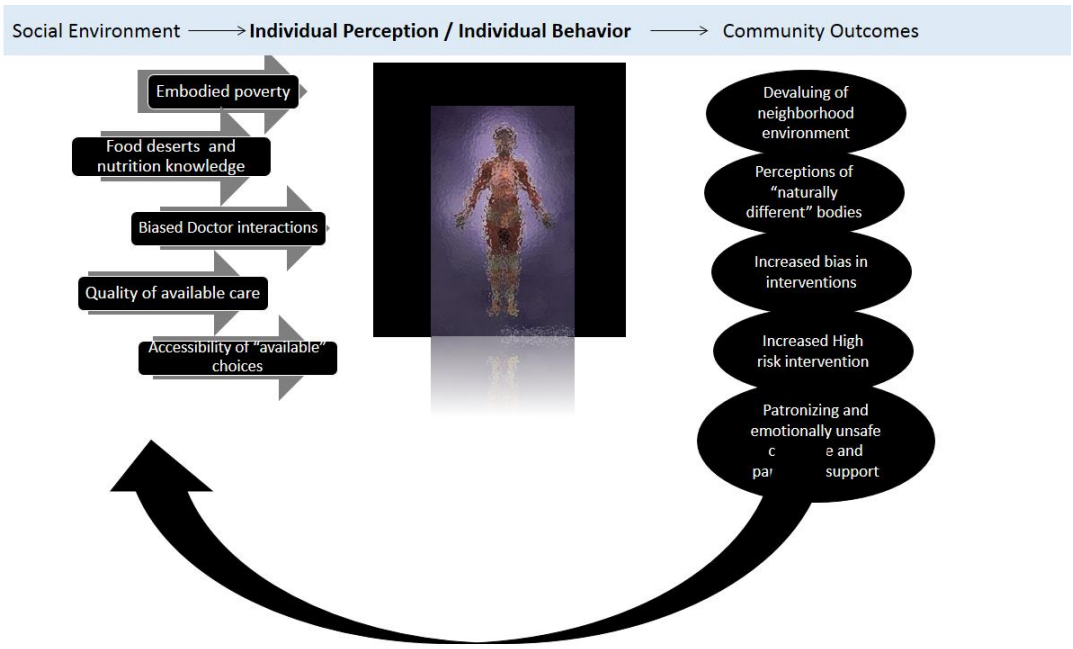

Figure 1.5. The Social Loop**.** These community outcomes feedback on the social environment, creating a feedback loop that in many ways are self-sustaining.

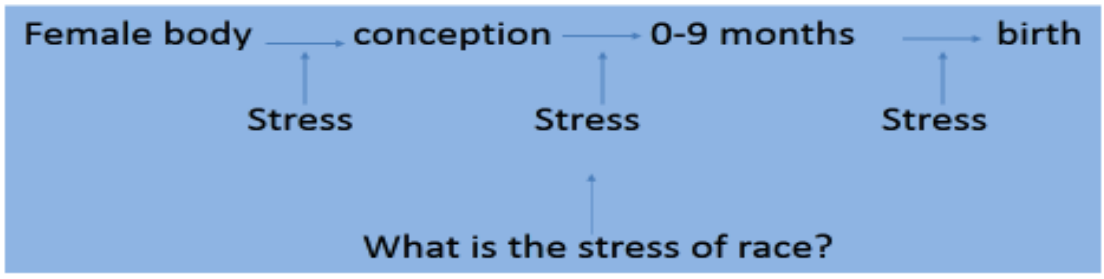

Figure 1.6. What is Race? What is special about the stress of race? Stress can impact the body, and that impact can be different depending on the developmental phase an individual is in.

CHAPTER 2

Birth, Sex, and the Body of Black Women: A Short History

Fighting for contested rights is a high-stakes game. Women's reproductive health has been heavily shaped by movements defined by this fight to protect the contested rights for reproductive control. But feminist movements in America, engaging in this fight amidst a country entangled in its own nationalist and civil rights struggles over the course of the twentieth century, sometimes clashed with the voiced needs coming from feminist communities of color. Much of this clash in the reproductive health discourse was driven by multiple levels of divergence in need between Black and White feminists. These divergences were not always fueled by absolute disagreement but they were fueled by an urgency to defend against this ever constant presence of contestation, and the need to fight against forces threatening the reproductive freedoms of women through restrictions on abortion rights and contraceptive freedoms. This urgency has historically overshadowed the reproductive health needs that many women of color have had and continue to have.

The purpose of this study is to explore how women's reproductive health, and the problems defining reproductive health discourse have been shaped over the twentieth century. In doing this, I hope to trace how aspects of this history have contributed to current trends in reproductive health disparities by race in the United States. The complexities of this discussion are so much greater than can be condensed into a single chapter, but the goal here is not to be all-encompassing. The goal is to demonstrate that whoever controls the argument defining the major problems in reproductive health, and the most important paths towards solving these problems also controls the choices

available to women, as far as reproductive health care is concerned. The goal is also to begin to illustrate how the high-stakes game of defining claims within reproductive health discourse has not adequately allowed space to move the concerns that women of color hold from the margins, and into the center of the discourse on reproduction and reproductive health.

At the beginning of the 20th century, fundamentally, the tensions around "reproductive health," were driven by disagreements by the claim-makers about who had the right to define the problems and subsequent paths toward solutions to improving health outcomes such as infant mortality, whose claims on the problems were most important, and whose social processes towards addressing those problems were most legitimized (Hargraves, 1992). The centrality of the woman as a complex mix of influences integrating sexual decision-making with sexual freedom, reproductive responsibilities with reproductive rights, reproductive abilities with moral responsibility, and individual agency with federal control (Rosen, 2006) was devalued by the claim-makers who had the most sustained and influential voice in the debate, the medical community. In the context of reproductive health, the success of medical professionals in staking an early claim on defining the problems of reproductive health meant that other claims were either abdicated or marginalized.

In her exploration of the social production of infant mortality, Hargraves (1992) evaluated the claim-making process from the perspective of the medical profession, child welfare reformers consisting of charity and "benevolent" organizations, and neighborhood reform movements consisting of African-American women. The medical profession defined the problem of infant mortality as being caused by physiological

abnormalities within the mother. Child welfare reformers defined the cause of the problem as unhealthy social environments including unsanitary living conditions among America's immigrant population. Neighborhood reformers defined the cause of the problem as societal discrimination. "Indifference to their race's perceptions of what was needed in their communities, left them few choices but to save their own communities and care for the needs of people within the community. Emphasis was placed on developing and empowering the community to address their needs" (Hargraves, 1992, p. 5). Through her evaluation of primary source materials, Hargraves successfully argues that by the 1930s, the American Medical Association (AMA) had successfully pushed forward the institutionalization and medicalizing of reproductive health care. This perspective highlighted the medicalization and the treatment of the disease, not the treatment of the person. Prioritizing physiology above the life circumstances in which health was being produced seeded what I am referring to as decentralization.

Decentralization is defined as a devolution of the woman and her reproductive health as a whole product of her lived experiences, and a focus on the woman's body as most central to understanding her reproductive health. Decentralization and the lack of "the local" influencing the sustained and prioritized claim-makers, the medical community, made it difficult to address many of the concerns negatively impacting marginalized communities such as Black middle and lower class women. The idea of "the local" means the local environment in which a woman develops.

This dissertation focuses on the production of the environments of reproductive health in which Black women come to be adults. Social production theory suggests that reproductive health outcomes are a product of biologically embedded processes that

emerge from the intersection of experiences within the social environment that are susceptible to biological embedding processes, as well as the patterns of stress response that individual holds. An individual's social environment dictates what an individual is exposed to. Internal stress processes dictate how an individual reacts to what they are exposed to. The reproductive health care environment has been constructed, and continues to evolve through the relationship between claim-makers who shape the social environment of reproductive health and health care. In this study, we do not address the individual biological processes, however, we do address the construction of the social environment of reproductive health, and health care by examining processes that come to define those environments. By understanding this evolution, we can begin to understand why it is that racial disparities have been so persistent, even as our ability to address the medical problems of reproductive health have greatly improved over the twentieth century. At the epicenter of this discussion is the issue of choice.

Defining "Choice" Among Black Women

The choices Black women sought in the process of claiming what was important for reproductive health, over the course of the 20th century, were often placed at the margins of importance in the face of other claims. During the early part of the century, claims of neglect were made by the National Association of Colored Women's Clubs.

"Black women's claims were built on a communal interpretation of the interrelatedness of the whole that could not be successfully dis-aggregated by liberal individualism or reductionist medical science. Their claims were based on the relationship of health to education, social opportunities, moral character, cultural values and general social betterment" (Hargraves, 1992, p. 98).

Hargraves goes on to show that Black women's clubs' claims on how to understand the problem of infant mortality rates went largely ignored by both welfare movements headed by White women and the medical community. This early medical focus on abnormalities in the physiology of women is arguably problematic for Black women in particular because Black feminist thinkers such as Angela Davis, Bell Hooks, Alice Walker, and Audre Lorde have argued that the Black female body was already viewed through an abnormally focused lens (Collins, 2008). Rhetorical language such as the claims that the invisibility of the Black body in a White-dominated society creating a diminished and objectified being only seen through conceptions of sexual-subjection or social disparity and disadvantage (Mowatt & French, 2013) framed the Black feminist response to both White feminists and the medical establishment. In response to this position of the "objectified other," Black feminists worked to reclaim the Black female experience through insistence on self-definition, self-valuation, and the necessity for a Black female-centered analysis (Collins, 2008).

Through the residual impact of the racist science of eugenics, through the sexist reproductive restrictions called for by men in the Black nationalist movements, through marginalization of their own claims on reproductive health, through the White feminist criticisms of the sexist orientations of the civil rights movement, Black female bodies were dealt with as different, and the complexities of reproductive health took on this "Black body" dimension where sex and reproduction in the context of Blackness were used to support other's claims without addressing the claims Black women themselves are calling for (Overbeck, 2011)

When looking at how the debate on Black reproductive rights changed in the 1980s, as the Black women's movement gained momentum, we can see the results of the abdication of social construction of reproductive health claims in light of the medicalization of reproductive health. But, we also can see that, amidst the call for medical safety in the abortion debate, socially relevant processes remained marginalized partly because the stakes were so high. Protecting women against coat hanger abortions, and other dangerous situations engaged out of desperation is what was at stake for all women, not just White feminists (Hymowitz & Weissman, 1984). But the "pro-life" counter push was, and has always been, so great that the space to allocate time and resources to directives addressing Black women's concerns was a challenge. One could also argue that these choices were being made amidst a racially biased social back drop that made it easy to justify the lack of inclusion of the concerns of women of color. Below is a brief summary of this feminist evolution.

First wave feminism was focused on the promotion of gender equity in legal contracts by promoting equality in property rights, and political power through women's suffrage and the right to vote. With the passage of the Nineteenth Amendment to the United States Constitution (1919), which granted women the right to vote, first wave feminism began to evolve into second wave feminism. Gradually, as women began to shift into the work place and amidst the burgeoning post-WWII image of the nuclear family, a new feminist voice emerged that is often referred to as second wave feminism (Dicker, 2008).

Second wave feminism brought the issues of sexuality, family, the workplace, reproductive rights, and gender inequities to the forefront. This period lasted roughly

from the 1960s to the 1980s. Several events marked this shift. Approval by the Federal Drug Administration (FDA) of the oral contraceptive pill made available in 1961 (Hooks, 2000) enabled women to have careers without having to leave due to unexpectedly becoming pregnant. President Kennedy's Presidential Commission on the Status of Women chaired by Eleanor Roosevelt (Goldstein, 1982) reflected women's broadening social engagement, and the more central organization of women in political engagement. Betty Friedan's *The Feminine Mystique* dispelled the media image of women depicted and marketed in popular media (Father Knows Best and Leave it to Beaver and such (Cornell, 1998), stating that this was not a reflection of women's happiness but was rather degrading to women (Walters, 2005).

Before this second wave shift, women of color, though marginalized, continued to push for inclusion in the claim-making process of defining reproductive health. After the 1930s, the social processes through which women of color could mobilize were changing. By the 1940s, the organizational base of African-American women was shifting from decentralized neighborhood reform movements to more centralized and politically engaged organizations (Mathews-Gardner, 2010). Previously, local neighborhood clubs formed the basis for Black women to engage civic mobilization. As organizations such as the National Council of Negro Women (NCNW) moved towards centralized control (having a main office in Washington), there was a shift in who engaged among Black women (Mathews-Gardner, 2010), and it is possible that more middle-class and fewer lower-middle-class women were involved in the problem-framing process, but this is difficult to verify because these early records were not detailed. At the same time, working class Black women were decreasing their membership in neighborhood clubs,

and increasingly becoming engaged in Union activities that provided them with a space to get support for their demands of equality in the work place. This provided them a way of engaging in politics (Fehn, 1998). The general shift during this period is towards more centralization, more politically defined goals, and a decrease in the locally maintained organizational base. It would be interesting to better understand the role that class played in this shift because Union-based working women's organizations continued to be very locally driven, while organizations such as NCNW saw the need to be positioned in Washington to act on political opportunities to improve Black women's conditions quickly.

By the 1960s, Black feminists, heavily involved in community-based "people's movements" such as the Black Nationalists and Black Panther movements, criticized the sexism within claims that contraceptive control was a threat to the Black Power movement (Nelson, 2003). It has been argued that the voice of Black women as claim-makers was often lost, or went unrecognized by White feminists of the time as significantly shaping the reproductive rights movement (African American Women and Abortion, 2001). All women benefited from the push for reproductive control, but Black women who faced tensions were leaders such as Frances Beal, organizer for the Student Nonviolence Coordinating Committee's (SNCC) Black Women's Liberation Committee (BWLC), "denounced the sexism of Black Nationalist men and argued that Black women required voluntary fertility control" (Nelson, 2003, p. 62), while also acknowledging that their experience with fertility control were dissimilar from that of White women.

The experiences diverged because women of color had to contend with the uncomfortable resonance of the relationship between the eugenic assertions of the early

1920s and its application to race. Eugenics was heavily criticized by many in the scientific community after World War II, but notable figures persisted in their involvement in favoring eugenics. In 1963, biologists and Nobel laureates Hermann Muller, Joshua Lederberg, and Francis Crick all spoke at a national conference strongly in favor of eugenics (Bashford & Levine, 2012). The association between eugenics and the racism that fueled racial violence (lynching and grave injustices enacted on Black men and women that were left unaddressed) created fear of efforts that promoted racial cleansing (Waldrep, 2006). This relationship between eugenic fears and reproductive control was not being addressed by White feminists. Sterilization was an important fertility control option for many.

> In a letter appearing in the Boston Female Liberation Newsletter, a woman discussed her campaign to make sterilization available on demand. She declared that, as with abortion, 'Sterilization is a right that must not be denied to anyone desiring it, whether that person has ten children or none at all.' While her assertion made sense to women who wanted to end their capacity to reproduce, the letter-writer did not acknowledge the complexities of such a demand in the context in which some women were sterilized without their consent. (Nelson, 2003, pp. 74-75).

Black feminists critiqued that White feminists, while they did address working-class women's claim to birth control (Emma Goldmen and Margaret Sanger, for example), they did not address the uncomfortable perception that feminists were not actively distancing, and distinguishing the call for reproductive freedoms from eugenics and population control rhetoric that existed during this time (Nelson, 2003).

Over the course of the mid to late-20th century, participants in the claim-making process diversified considerably, and many were attempting to address the broader needs of women of color. A part of this diversification was the inclusion of women and minorities in to spheres of increased power. For example, Dr. Maritza Trias Rodriguez

was sensitive to the concerns of minority women because of the health discrimination she witnessed firsthand in Puerto Rico (Wilcox, 2002). She was a pediatrician and an activist for the protection of women against forced sterilization. In the early 1970s, she organized a group of New York health care workers for the Committee to End Sterilization Abuse. Continued pressure on the Department of Health and Human Services in New York pushed them to establish a moratorium on sterilization for women under 21 years of age, or those unable to provide legal consent, and a 72-hour waiting period between the signing of consent and the procedure (Kluchin, 2011). For women of color, reproductive health, choice, autonomy, and power were constrained by the reality that Medicaid paid 90% of the cost of sterilization procedures (Nelson, 2003); the medical community encouraged and supported these procedures (Solinger, 2005). To address this in New York, a written statement that women would not lose benefits if they refused sterilization was mandated; studies monitoring the compliance with this mandate by the American Civil Liberties Union (ACLU) and the Centers for Disease Control and Prevention in 1975 exposed widespread non-compliance with the guidelines (Solinger, 2005).

In response to this, Dr. Rodriquez-Trias and the members of the Campaign to End Sterilization Abuse (CESA) were called to serve as an advisory committee to establish a new set of guidelines for public hospitals. In 1975, the committee required a 30-day wait period from signing a contract to having the procedure, along with a requirement to offer counseling services provided in the language the women spoke. And, the counseling could not be given by the doctors themselves (Nelson, 2003 p.75).

> Even with these many successes, less fortunate and poorly educated women are still being denied the reproductive freedoms available to other women, and entitled to all. Dr. Rodriguez-Trias believes that although the organization of local groups has been effective in the sharing of information as well as in

> applying pressure to policy makers, only with raised consciousness, informed consent, and the existence and accessibility to real alternatives, can freedom of choice become a reality for all women.

Organizations fighting to amplify the voices of women of color did argue for the inclusion of sterilization issues into *Roe versus Wade* in 1973 but their voices got lost in the pro-life backlash, and the broader reproductive health needs of minority and poor women actually became criticized as a distraction from the fight to maintain abortion rights. In 1977, Dr. Rodriguez-Trias became active with the Committee for Abortion Rights and Against Sterilization Abuse (CARASA). Many feminists within this group saw sterilization abuse as less urgent in the face of the Hyde Amendment (Nelson, 2003) which banned Medicaid coverage of abortion. Internal criticisms arrowed by members of CARASA that focused on a "laundry-list" of demands, from safe work places to quality child-care, diluted the resources needed to protect contraceptive control (Nelson, 2003). Such persistent pressure against contraceptive control has been exponentially damaging to the concerns of minority women because it created this battlefield mentality where issues of "pregnancy disability payments, control of the birthing process, a safe workplace, free, quality child-care, free medical care, and income equality" became secondary within the reproductive rights movement because of the persistent assault on the very basic issue of reproductive control.

Today, with continued threats against abortion rights and contraceptive control, the tensions produced by the forced allocation of resources continue to marginalize the concerns of minority women. This does not mean that these concerns have gone completely unaddressed. The Black Women's Health Imperative (2014), Sistersong; Women of Color Reproductive Justice Collective (2014), and those within the public

health community (Hogue, Buehler, Strauss, & Smith, 1987; Schoenorf , Hogue, Kleinman, & Rowley, 1992; Liburd & Vinicor, 2003) have made declarations on racial bias and the unmet need to focus on social experiences within health care in general, and reproductive health care in particular. But, like rolling a boulder up hill, limitations in funding and marginalized interest have, until very recently, continued to threaten the inclusion of the claims that minority women have been pushing to include in the reproductive health discourse. Because these claims originate from disparities that minority women experience with their local environments, sidelining such claims limits the choices minority (particularly poor minority) women have to find solutions to such problems such as pregnancy disability payments, control of the birthing process, a safe workplace, free, quality child-care, free medical care, and income equality. This also means that these social-produced problems that fuel reproductive health disparities have continued to go unresolved.

Even today, there is a relevance to this argument. Between 2012 and 2013, I pushed to partner with feminist organizations throughout Atlanta, Georgia. Over the course of this time, we attempted to develop a strategy to provide prenatal care to impoverished women on Medicaid that integrated substance abuse assistance, domestic partner violence assistance, and parenting support assistance. This was a time when the assault on abortion rights became amplified to a level unseen since the 1970s. Again, the issue of resource allocation emerged. In one meeting with the program director at the Feminist Women's Center, she said that "we fully support this initiative but we just do not have the time, money or personal resources to address this right now." Anthropologist Leath Mullings and CDC Director Leadrus Liburd, have both started different programs

to directly address the needs of minority populations in the production of health disparities (Liburd & Vinicor, 2003; Mullings et al., 2001). But such initiatives are not nearly widespread enough, and today minority feminists still express similar frustrations as those of the past:

> Part of the problem is that Black women have been and still are treated as 'invited guests' in the reproductive rights movement . . . issues of access to abortion services, forced and coercive sterilization, reproductive tract infections (RTI's) and infant and maternal mortality and morbidity impact women of color, especially Black women, most severely. When Black women do come to the meeting, it is always a constant challenge to keep other reproductive health concerns on the table with the issue of abortion. The majority of Black women support the right to choose but have difficulty with abortion always front and center (Bond, 2001, p. 2).

The Woman-as-Person Push and the Public/Private Split

This environment of feminist critiques (Clark & Olesen, 1999) and minority response to critiques (Soling, 2007) was occurring amidst the production of works such as Emily Martin's (1987) work, *The Woman in the Body*. In this study, Martin conducts a critical analysis of the medical metaphors used to describe acts of reproduction, and concludes that:

> Most of these metaphors clearly relate to familiar forms of mass production, where value is placed on larger quantities and on efficiency of scale. In these terms, male production of sperm wins accolades for both quantity and continuity of production. Female production of eggs loses because it is understood as finished at birth, after which can follow only aging and degeneration. It is also because female ovulation is cyclic: occasional days of fertility are interrupted by weeks of infertility. In addition, females show a vivid sign of each failure to produce in the "waste product" or menstrual fluids (p. xxiv).

This woman-as-person argument was a direct critique of views and practices in obstetrics and gynecology. She went on to demonstrate that these medical constructions of female physiology and reproductive function are conceptualized very differently by reproducing women themselves. Feminist voices did evolve into a push towards woman-as-person

perspectives in reproductive health, in response to the medical community's focus on woman-as-body. Seeing a woman-as-person in the reproductive health context meant seeing the entirety of reproductive health production, and the spaces in which that production occurs.

This understanding of reproductive health began very early with Margaret Sanger with her work to legalize contraception in the early part of the 20th century. Today, the integration of this understanding into both the reproductive health discourse and reproductive health care practices is, arguably, limited and sometimes lost in the wake of the high-stakes claims-making process. To understand this fully, Hargraves's analysis of claims needs to be made throughout the mid and later part of the 20th century. Given our above discussion, it seems that limitations in what White feminists included, and marginalization of what Black and Brown feminists called for, stilted the ability of the woman-as-person perspective from being a driving component of reproductive health care and choice. Another interesting point of exploration would be to understand the impact that the public health community has had in influencing the reproductive health experiences of minority women.

Clarke and Olesen (1999) suggested that the medicalized push of OB/GYN care was becoming an even stronger drive than what was being witnessed in the 1930s due to the hyper focus on the technological advances. During the 1990s, they called for the feminist movement to find more balance than opposition in addressing the agendas where women's health would be defined by moving forward. From their view point, up to the early nineties, feminists have succeeded in promoting increased attention to women's health, increases in female providers of care, and improved inclusion of women as

consumers of health care in policy venues. They have also had failures. They claim that increased biomedicalization of women's health (in line with the technology explosion from the 1980s on), essentialization of "women" and "men" that created false universals, and erased the within group differences rather than giving them any serious consideration, were failures that needed to be addressed as women's reproductive health was being re-envisioned during this time. They also claim that issues such as access to care became twisted into issues of "managed care" and "health care reform" but the essential problems of access and quality remained the same (Clark & Olesen, 1999).

This essentialization of the female combined with the increased biomedicalization of women's health relates to Martin's work which illustrated how hyper focus on the body and not the women inside the body creates a decentralization that can have a traumatic effect on women's experience of the birth process. In "Birth as a Rite of Passage," Davis-Floyd (1992) shows that many women have to go through a recovery process when they are treated dispassionately by the medical community. Decentralizing the woman from the body engaged in the act of pregnancy, and disconnecting from the private experiences defining a woman's relationship with the health of her body, dramatically and negatively influenced how a woman viewed and engaged with health practitioners. Martin's and Davis-Floyd's works were so widely popular and influential because they pulled reproductive health into the fold of the medical anthropological discourse that was developing a critical analysis of the interactions between medical services and the populations being served (Good, 2011). The idea that healthy pregnancy goes well beyond just the biomedical criteria for success such as maternal and infant survival or birth weight was emerging, but the obstetrics community was not really

listening because the focus was, and continues to be, outcome driven. What Martin and others were expressing was that the outcome of reproduction is more than just a baby, it is the production of a new life and its contexts: new baby, new mother, and new family. Sex lives, partner choices, family contexts, pregnancy care choices, and early childhood experiences, all contribute to reproductive health as women experience it.

What is seen next is a merging of Black women's claims with social epidemiological demonstrations by Kreiger, Williams, Hogue, Kramer, and many others that provided support for the causes of reproductive health disparities that sounded similar to the marginalized needs first put forth by Black women during the first part of the twentieth century. Following Hargraves' (1992) observations that the evolution of the claim-making process is central to understanding how health choices are negotiated, I am suggesting that such an understanding could be central to helping the public health community better understand and integrate how environments of health are constructed, and where biological embedding processes might be directly impacting outcomes. In the 1930s, White women involved in social reform movements abdicated their claims to medical professionals (Hargraves, 1992). The focus of these women's groups looked very much like the focus of public health goals today. What part did this abdication play in the translational impact that public health professionals have today? Is there tension between public health interests in the social construction of reproductive health and the medicalized focus of obstetrics practice, or are the lines between such claim makers harder to delineate today?

These are interesting questions to address, but what I am arguing here is that the seed that was planted in the early part of the 20th century which marginalized the

concerns of Black women, created the seeds of a public/private split in which the private debates and concerns that Black women negotiated are different from the public conversations that seem most accepted between them and their health care provider. The public/private interactions that women in general, and Black women in particular, have with regards to their reproductive health, creates a public space within a private body, in which obstetrics care, policies, procedures, and regulations, take agency of choice away from Black bodies because the focus is not on the claims they are professing as central to their health. Women's private choices in pregnancy and birth are shaped by responses to public policies that define the choices they have. There are also social negotiations such as when to have sex and with whom, when and if to have a baby, where to have a baby, how to approach prenatal care, and when and how major interventions are decided upon, all of which frame the contemporary dimensions of race and reproductive rights. Understanding this is a point of entry into comprehending the social environment in which Black women are embedded. It is not just about perceptions of racism. It is about more complex negotiations between their health, their environment and the health care system. While I focus on Black women, this speaks to all women in general.

Evolving Anthropological Views on Pregnancy and Reproductive Health

Voices framing the field of reproductive anthropology successfully illustrated that at the level of the individual, community engagement and support was an essential part of being human, and pregnancy, birth and early child development were times when that need was heightened (Konner, 2010). There is a biological relevance for this understanding within medical care because these are times when an individual is most at risk for death or injury, and it is this social reality that can prove most protection against

morbidity and mortality during reproduction for a number of different reasons (Trevathan, 1999).

Understanding socially embedded context as it contributes to reproductive health outcomes has been central to anthropological studies for a long time. Who do we have sex with, when and why? For example, libido studies, risk behavior studies, mate-guarding, sexual selection, "crack whore" behavior and patterns of promiscuity, STDS, and teen pregnancy have all been subjects of exploration associated with the selection of sexual partners (Ellison, 2001, 2003; Ginsburg & Rapp, 1995; Greenhalgh, 1995; Inhorn, 2006; Kligman, 1998; Kuh & Hardy, 2002; Scheper-Huges, 1993; Schooling et al., 2007; Solinger, 2005; Tremayne, 2001; Trevathan, 1999; Vitzthum, 2008).

In humans, sexual decisions happen within a social setting that has been historically produced, and can be socially situated. Darwin (1859) himself argued that mate choice is molded by the social environment. "It is certainly not true that there is in the mind of man any universal standard of beauty with respect to the human body" (Darwin, 1871, p. 890). Beauty, like other selection parameters is, arguably, a product of social embeddedness.

Over the next few paragraphs, I will present other anthropological voices contributing to our understanding of reproduction. We begin with Penn Handwerker who pushed for the inclusion of social theory into the reproductive domain with his assertion that reproduction fell within the domain of politics and power (Handwerker, 1990). Handwerker's review was not very cohesive, but it did offer very interesting and thought-provoking inquiries. For example, O'Neil and Kaufert (1990) presented the historical process of internal colonization in northern Canada in which Inuit cultural, economic, and

political autonomy was eroded. The fear of childbirth “risk” pushed Inuit women to southern hospitals to go through the birth process with no support and often alone. Losses of cultural skill by Inuit skilled birth attendance, and losses of social unity that usually came with birth were the victims of biomedical hegemony.

Ward (1990) also took an historical account of how factors throughout history have shaped urban Black adolescence in Louisiana. Ward observed many perspectives on "the problem" of teenage pregnancy (white males, white feminists, Black community, political liberals), but found little place where an emic understanding of Black adolescent experiences was being expressed that included what they were thinking and how they talk about their decisions. The social context of teen-age pregnancy was also explored in Lancaster and Hamburg’s (1986) edited volume on the subject. In Handwerker’s review, Bledsoe (1990) also challenged convention. She argued that this was not the way Africans do (or should) regulate family size. This work was a precursor to her 2002 ethnography which will be discussed later. These works continued the critique of medical and public health institutions and practices by demonstrating that reproduction had social, political, and moral dimensions that were not included in demographic explorations of reproductive behavior.

Davis-Floyd (1992) pulled this social theory perspective into the domain of birthing practices by engaging a symbolic anthropology approach to the analysis of birth. From this perspective, the “pregnancy/childbirth process” was interpreted “as a year-long initiatory rite of passage" (p. 305). Positive experiences were empowering and negative experiences were victimizing. Davis-Floyd outlined the nature of the process of reinterpretation through which those women who were traumatized by their birth

experiences—whose belief systems, in other words, were overthrown through the consistent application of obstetrical procedures to their labor and birth processes—seek to rewrite the message sent to them by the hospital rituals through narrative, through childbirth activism, and through subsequent births (p. 306).

In this work, the birth ritual was being centered on the woman's experience in order to explain how agency was lost during the process of giving birth, and regained through subsequent actions taken in the weeks, months and years after the child-birthing process had ended. It also illustrated that female agency was not central to the birthing practice (Davis-Floyd, 1992).

Scheper-Huges (1993) brought the era of hegemonic critique into the realm of western notions of motherhood and maternal bonding. She did seminal work in Brazil on the relationship between chronic child loss, poverty and a mother's ability to express maternal love. Around this time, more and more works emerged that contested the correctness of Western assumptions ranging from the biomedical constructions and experience of menopause (Lock, 1993) to the assumed universality of birthing practice (Jordan & Davis-Floyd, 1992; Lock, 1993). Inhorn's (1994) ethnographic work on infertility treatment in Egypt took this questioning a step further by exposing how the integration of Western biomedicine into non-biomedical settings could have negative health consequences for women seeking infertility treatment.

In all of these works, reproductive health took on a decidedly more nuanced and complex reality by incorporating the dimension of social or anthropological theory. These intellectual discourses ran parallel to political and medical discourses, and attempted to push the paradigm of reproductive health closer to women's actual experiences of

reproduction. Unfortunately, the presence of such voices did not mean that their findings were being introduced into reproductive health practices in America. Hence, an environment was created where the need was felt and acknowledged but left unmet. The disconnect between women's wants and needs during reproduction, and the medical community's priorities for increasingly medicalized birth, created for minority women private spaces of health negotiated with positive goals of wholeness, joy, safety/support, and community, but public spaces negotiated with the goals of correctness and adherence in the face of assumed incorrectness, burden, or ignorance. When wholeness is not found, joy becomes elusive, and if community is absent then pregnancy health is worse.

What About Motherhood?

During the 1990's, in line with the rise in criticism of the biomedicalization of women's health, feminist discourses on motherhood were asserting the distinction between the biology of motherhood, and the social production of motherhood. What was occurring was a "decomposition of biological motherhood, the medical, legal, and commercial development of reproduction" (Neyer & Bernardi, 2011, p.162). Neyer and Bernardi argue that this context of motherhood was creating a new type of control over female reproduction that extended beyond fertility control.

I am arguing that disconnecting medical discourses on the decentralized female body from women's lived experiences within reproduction led to the re-production of mothers who had split their public and private spaces of reproduction and motherhood. This meant that while reproductive health authors were bringing the birthing process into the discussion, and moving motherhood into political discourse, social experiences of discrimination and bias were creating a persistent thread in experience. This created

dissonance between public presentations of self-as-mother in accordance with public discourse, and private experiences of the challenges of motherhood associated with the challenges in social support necessary for a positive motherhood experience. It is possible that this split fueled motherhoods defined by isolation or alienation. In Sarah Blaffer Hrdy's (2011) *Mothers and Others*, she discusses the role of social context and "alloparenting" within human evolution. This work supports the argument that human cooperation, a fundamental part of being human, is grounded in cooperative breeding in which parenting responsibilities were spread throughout social networks of friends and relatives. The classic model of the nuclear family was not, according to Hrdy, how our ancestors experienced parenthood.

I am suggesting that this modern day nuclear family myth, even as it has evolved to include very diverse players from same-sex couples to interracial couples, promotes an accepted context of isolation, and these facades of "doing what is right and socially acceptable" might be masking one's true experience of really having no idea of what to do, or where to get the support that child-rearing demands. This is an area of study that I hope to continue to pursue.

What has been observed is that political lobbying groups such as *MomsRising.org* (2006) began to fight for introduction of motherhood issues that are a part of the social embedded argument. Their agenda has included pregnancy disability payments, control of the birthing process, a safe workplace, quality child-care, quality medical care, and income equality. All of these are issues that minority feminists fought to include decades before this movement began. This demonstrates that what women of color were, and continue to ask for today, are not concerns exclusively of minority populations; however,

they tend to be disproportionately negatively affected by societal constraints that limit access to these things. Also, when we think back to the locations in which women were receiving support in the early part of the century, we see that today a disconnect seems to continue to exist. Groups are acting at the national level, and are heavily involved in the politics of motherhood and reproduction. Within local communities, the local influences on reproductive health production still seem to have gone un-addressed. I believe that this is why, at this moment in time, we have national voices addressing issues that drive reproductive health inequities; however, local initiatives that really impact and engage the individual women within the context of reproduction and early parenting are harder to find. Understanding the nuance of these dynamics is another area for future study.

Going back to our historical overview, power dynamics are central to the discussion of motherhood production. Davis-Floyd and others moved our understanding of power dynamics forward by exploring the authoritative knowledge through which reproductive health dynamics were reinforced. They looked at authoritative knowledge (AK) within the hierarchy of the delivery room. Woman's knowledge of her body was suppressed in the presence of obstetrical knowledge obtained through fetal monitoring. Trevathan (1999) suggested that there was a long history of transfer of authoritative knowledge from parturient to attendant. She claimed that in early human populations birth was more successful if it was not done alone. Having a birth attendant became more crucial with the events of human encephalization, or the increase in the complexity and relative size of the human brain. This expansion collided with pelvic constraints from bipedalism and resulted in a difficult, prolonged birth process. Trevathan expanded on this in her later work titled *Evolutionary Obstetrics* (1999). Sargent and Bascope, in

Davis-Floyd and Sargent's (1997) edited volume, argued that authoritative knowledge was an integral part of the authoritative culture of physicians and midwives that existed prior to the medical events. In the Jamaican health system, which had little money for technological advances, these authors observed that the "cultural authority of biomedicine may persist even without the technology that once defined it" (p. 35). Davis-Floyd's (1992) earlier work on the ritual practice of birth discussed this in detail. Medical school was seen as a contemporary rite of passage through which medical practitioners themselves were socialized into the technocratic model. This was what perpetuated the system.

What this work helped us to understand is that race and class are conditions that exacerbate the depth of disconnect between private spaces and public forces that impact what is possible within those private spaces, because the social forces supporting inequity within the race and class contexts directly disrupt the possibility for a more supportive reproductive health context. This relationship between private spaces and public forces lays the foundation for the theoretical social production paradigm. Derived from a structural-constructivist point of view, social production theory says that social determinants of reproductive health are working together to create a category of risk called race, and now beginning with this category, we need to understand how it is functioning to produce disparities. From the perspective of motherhood, it is not becoming a mother that is inherently isolating (on the contrary in many cases), but the structural realities in which one enters into motherhood can force a context where private spaces must be kept hidden to protect against judgment. The pressures for concealment reinforce a sense of isolation that extends the public/private splits established during

reproduction, and that reinforces isolation . . . the very thing that can make mothering so hard.

How Do You Counter Decentralization?

The public/private split is the result of continued decentralization in reproductive health care. I hypothesize that the best way to counter decentralization is to include socially relevant contexts. The public/private tension discussed above reinforced the minimization of motherhood because much that was needed for pregnancy but left out of pregnancy care by the authoritative decentralization of the women at the center of the birthing event (i.e., community engagement during pregnancy, birthing attendance for the mother not just the child, and attention to the relevance of the mother's experience) was also needed in some form for motherhood production beyond the birth event.

By the mid-nineties, anthropology had proven itself to be an integral part of understanding trends in reproductive behaviors. To this end, Greenhalgh (1995) published an edited volume that took Handwerker's (1986) critique of the demographic transition theory to the next level. Handwerker was critiquing the demographic transition view that modern population change moved along a continuum from high birth and death rates of traditional societies to low birth and death rates, such as the ones found in industrialized societies. This early compilation linked macro and micro level dimensions of human reproduction in an attempt to articulate variations in micro-level phenomena, and to understand how micro-level phenomena produced macro-level changes. For example, Brainard and Overfield tracked changes in Western Alaskan Eskimo fertility between 1945 and 1974. Finding that adoption of family planning services was not accompanied by fertility transition directly challenged classic demographic transition

theory (Greenhalgh, 1995). Alexander went on to show that population growth in Japan was not the result of the need for an increased labor force, which was popularly assumed and accepted, but instead was due to reduction in breastfeeding duration due to the increased labor demands and changes in women's labor activities (Greenhalgh, 1995).

Greenhalgh (1995) further added the notion that an historical perspective was critical for understanding fertility trends because it took so long for trends to emerge, and gender played an important role in such trends because women were, and continue to be social actors. Under systems of oppression, women responded by making decisions that impacted fertility behaviors. Examples of how the feminist historical perspectives extended our understanding of behavior in the context of demographic studies included Fuchs and Moch's historical investigation of poor women's networks in Paris. During the fin-de-siecle, women in Paris had resources and social networks that masked the potentially negative effects of poverty (In Greenhalgh, 1995). In Greenhalgh's edited volume, Bledsoe offered one of the first clearly articulated calls for the need to integrate other actors as central characters in the production of reproductive acts and decision-making. She focused on socially constructed characteristics of family, and the different values women placed on different children. "The more complicated message from viewing families as socially constructed is that demographic phenomena such as fertility, marriage, divorce, and child mortality cannot be considered in isolation from each other or in simple causal relations to a proximate-determinates framework" (In Greenhalgh, 1995, p. 152). Children act as symbols of culture that influence how adults relate to each other (Greenhalgh 1995). Bledsoe's voice is reflecting the larger social call in the third

wave of feminist thinking which, during the mid-nineties, advocated for the complexities of the female experience (Solinger, 2005).

These notions of integrating other actors, and contextualizing fertility trends, were also significantly influenced by reproductive ecologists who engaged the understanding of reproductive biology from these more integrated and multidimensional perspectives. For example, reproductive ecological factors traditionally engaged through female models of reproductive ecology, included behaviors that impact ovulatory function, gestation, and fetal development (Ellison, 2001). These models were beginning to be engaged in the context of male trade-off as well. Females' energetics, influenced by nutrition and dietary intake, physiological activity, and psychosocial stresses, were still the primary focus because they were shown to play an essential role in the production of ovarian variation (Vitzthum, 2008). Males were not directly involved in the growing baby; ecological factors involved in energetic trade-offs, therefore, tended to focus on factors that affected male activities surrounding the reproductive event such as the availability of mates and competitive interactions to "win" mates. Nutrition, physical activity and metabolic energetics were also factors, but only to the extent that they impact libido and sperm production; and possibly testosterone production (Ellison 2001).

Many of the critical perspectives driving reproductive anthropology were also pushing forward our understanding of women's behaviors in the context of social and medical systems, and shedding light on past assumptions about why women do what they do. From biological anthropology to medical anthropology, several lines of inquiry supported this push. This bio-anthropological arm of reproductive anthropology—the field of reproductive ecology—began with Konner and Worthman's (1980) seminal work

which found that among the Kung hunter-gatherers (a non-concepting, non-abstinent population), interbirth spacing was primarily controlled by breastfeeding practices. This work followed and countered Nancy Howell's (1979) proposal that the time between births was dictated by the relationship between female fecundity and female nutritional status. This field has primarily been dominated by models of female reproductive responsivity to environmental conditions. Though male models do exist, female models dominate the field, and many of these models engage the analytical framework of life-history theory (Vitzthum, 2008). In 1954, Lack first described life-history theory saying that given parental resources, selection favors that combination of offspring number and size that maximizes the number of offspring reaching reproductive maturity (Johnson, 2004).

Medical anthropologists also contributed to this push. Ginsburg and Rapp's (1995) edited volume was the first to shift the focus towards what they call "transnational inequalities on which reproductive practices, policies, and politics increasingly depend" (p. I). In Ginsburg and Rapp's (1995) review, Anagnost offers an example of the conflict between State-constructed ideals and personal desires through the exploration of China's one child policy as a response to modern China's past population growth. In this context, having one child is a "sign of the modern" for both the state and the general population. But Anagnost found that people do want to have big families (Ginsburg & Rapp, 1995).

Gertrude Fraser's exploration of "euphemized violence" occurring in the silencing of the negative emotional impact of China's one child policy demonstrates when the complexities of women's lives are erased from the conversation of reproduction, and simply addressed as "normal" everyday life, then motivations, actions, and suppressions

that underlay that "normal" aspect of life go unseen. This, she argues is central to the production of inequalities and disparities in reproduction (In Ginsburg & Rapp, 1995, p. 4). Another interesting example of how power dynamics shape personal and political conceptions, and productions of reproductive behaviors is Ward's ethnography of low income African-American mothers. In the course of debate over Welfare reform, this population of women were characterized as lazy, undisciplined, and unmotivated "breeders" who use up federal and state recourses by abusing the welfare system (Ginsburg & Rapp, 1995). These same women are being used to meet the childcare needs of women who are in higher economic positions. This observation puts into question what defines an appropriate parent, and how these definitions are stratified by race and class.

Incorporating social theory within the reproductive health discourse created a contextual understanding of women's actual experiences. For Black and brown women, this is particularly important so that we do not continue to reify false assumptions about race and/or class. By continuing to place the individual at the intersection of collective cultural construction and social structure, we can understand the biologies of race being produced.

In the context of the evolution of the field of reproductive anthropology, driven by ecologists and medical anthropologists, culturally and biologically defined understandings of the complexity of reproduction, and the central agency of females within reproduction became clear. Other actors besides women also were recognized as playing key roles in reproductive health. But, a centralizing counter force to female

decentralization was responding to the medical decentralization of women within the context of reproduction.

At the end of the 20th century, Clarke and Olesen (1999) took stock of the field of women's health which is heavily represented by works in reproductive anthropology. This work brings cohesion to the relationship between feminist theory, social theory, and reproductive anthropology. "We seek to again rupture increasingly biomedicalized frameworks of women's health, as feminists have notably ruptured these in the past, and to revision—and thus, to re-theorize—women, health and healing. Re-visioning means letting go of how we have seen in order to construct new perceptions" (p. 3).

Work by various women's health organizations throughout the 20th century led to the 1990s successes in increased attention to women's health, increase in female providers of care, and improved inclusion of women as consumers of health care in policy venues. However, the feminist movement also resulted in failures such as increased biomedicalization of women's health (in line with the technology explosion from the 1980s onward), and essentialization of "women" and "men" that create distorted universals and erase the within group differences rather than effectively identifying and addressing them (Solinger, 2005). Here is where social histories collide with the production of racial disparities in reproductive health.

Understanding race, class, and the production of reproductive health disparities took on a decidedly different tone after the turn of the 21st century. Social determinant studies linked reproduction directly to environmental and social conditions that impacted energetics. These associations statistically grounded our understanding of embodied environments in the context of race and class. While increasing our explanatory

understanding of racial inequity, Blackness also was being essentialized as a real, coherent, and a bounded phenomenon because of the repeated association of this category with many negative outcomes. What has been excluded are the lived experiences of being Black or poor in the context of these disparities. The limitations in our understanding of how health disparities are grounded more substantively in lived experiences of race reinforced the public/private split that both centralizes the Black body as important, but decentralizes the Black experience as an important component of health production. This creates a double-edged decentralization for Black women: one in which color is elevated above person, and the other more general experience of woman-as-body as seen above in woman-as-person.

To this point, I have given ample examples of how reproductive health is a socially constructed phenomenon. I have also talked about how the perspective of "sex and babies" in the context of reproductive health is too limiting. The goal of this dissertation is to illustrate how social theory can offer more nuanced, dynamic models for the study of reproduction in the medical, biomedical and public health arenas. This nuance is the *modus operandi* of social theorists, particularly those working within reproductive health studies. But these humanistic voices have not always been privileged in the face of "empirically driven" medicine. It is time for this to change. Social theory provides depth of understanding, and a new era in social theory is emerging in which many of these complex understandings can be incorporated into empirically driven contexts. The beauty of this is a rich depth of understanding from a public health initiatives perspective: however, more needs to be done to refine these approaches so that the full breath of its explanatory power can be realized.

The work presented here attempts to incorporate Bourdieu's (1977) understanding of embodied environments in order to better understand how, functionally, the private space within individuals becomes defined by racial category, and how interactions with the public world reinforce the truth of such constructed concepts. Solinger (2005), in her book, *Pregnancy and Power: A Short History of Reproductive Politics in America*, said that, "for women of color, reproduction is about the negative consequences of misguided public/private interactions" (p. 78). Over the course of this work, I take the structural-constructivist perspective to build the social production theory using reproductive health as an explanatory model.

Contextualizing the gendered environment of reproduction, from conception to motherhood production within this perspective of race, reveals racial disparities in the structure of environments. For example, neighborhood levels of racial segregation and social support are associated with giving birth to lower birth weight children (Buka, Brennan, Rich-Edwards, Raudenbush, & Earls, 2002). Minority populations are more likely to live in environments that contribute to greater risk of being overweight or obese, and obesity increases the risk of pre-term birth, fetal death, gestational diabetes, Cesarean delivery, and fetal growth restriction for Black women (Bryant, et al., 2010). Feelings of racial prejudice in a mother are associated with low birth-weight babies (Collins, et al., 2000), and these feelings influence a woman's trust in health care providers, which in turn will influence her future health care seeking behaviors (Dale, et al., 2010). Obesity, delayed prenatal care, practitioner bias, and perceived racism have all been found to be associated with pre-term birth outcomes. Without assuming that association equals

causation, we look at these environmental inequities by race as a starting point for examining the contexts in which disparities in preterm birth are being produced.

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CHAPTER 3

Overall Study Methods

Study Overview

This study was designed in three phases, but the first two phases make up the bulk of the work done in the course of this dissertation. The final phase is the future projects phase that will carry this work beyond the dissertation period. In Phase 1, I collected free list data from 80 women in order to define the domain items within cultural beliefs for what constitutes a good and healthy pregnancy. I refer to the Phase 1 population of women as the Phase 1 group.

In Phase 2, I took those domain items identified by the phase 1 group and executed two main goals. First, I asked another set of 80 women: 1) if these domain items were in fact important for pregnancy, 2) to rank the importance of each item, and 3) if they were able to engage those items within the health pregnancy domain. We used these data to determine if race, class, or other environmental factors influenced a woman's ability to do what is culturally regarded as important for pregnancy health. This measure is referred to as *cultural burden*. The Phase 2 sample is referred to as the *Phase 2 group*. The research objectives included testing the sequence of hypotheses that: 1) women (potentially) subscribe to class and race-specific cultural models of what constitutes a healthy pregnancy; 2) some women are unable to approximate those models, an inability 3) that causes stress, and; 4) one's ability to approximate these models is mediated by stressors experienced during pregnancy. We will discuss this further in the concluding chapter of the dissertation.

Study Design Characteristics

Setting and Recruitment

Phases 1 and 2. This study was approved by the Emory University Institutional Review Board, and when applicable, by the hospital's IRB. I received a HIPAA waiver for access to payer information (private insurance versus Medicaid). This information was necessary for categorizing the women by socio-economic status.

Women were recruited directly from the DeKalb Medical Center, Emory-Crawford Long, and Grady Hospitals in Atlanta, Georgia. I worked with the postpartum charge nurses to make initial contact with each woman as follows:

1) Contacted the Vital Statistics Department to get a list of daily deliveries.
2) I took this list to the charge nurse where the list was narrowed to mothers who delivered healthy babies over 36 completed weeks of gestation.
3) I looked at race and payer mix from the demographic information in the mother's chart.
4) I then approached a potentially eligible woman the day after the birth, in order to obtain her consent to the study. During this time, I discreetly asked her about her level of education.

Interviews of eligible consenting mothers were conducted at their convenience while they were in the hospital. After each interview, I requested the woman's permission for future contact, and their contact information. Each woman was also given my contact information for future reference. This procedure was based on the successful method used to recruit and interview women involved in the Stillbirth Study Collaborative Research Network (SCRN) Study (Parker et al., 2011).

Procedures

This study was divided into two phases. Below is a detailed description of the design of each phase of the study, and the analysis plan that followed.

Phase 1

Free Listing. The purpose of this phase was to generate items that captured women's beliefs about pregnancy. We carried out a free-listing exercise. For the free-list exercise (Borgatti, 1999), women were recruited from the hospital as described above according to a systematic sampling process designed, and who had a healthy full-term pregnancy. They were pre-screened before contact to determine their age, ascribed race (whether white or black, based on their medical chart), equal numbers of Black and whether they had White women with public and private insurance or were covered by Medicaid. After consenting to the study, the women were asked about their level of education. At that point, we scheduled a time to meet while she was in the hospital. I interviewed 80 women between the ages of 18-35 according to an *a priori* estimation of, a sample size calculated as appropriate to meet the study objective (Weller & Romney, 1988). As a thank you for their participation, each participant in this phase received a $20 gift card to make purchases at Wal-Mart.

Phase 1 Sample: four sets of women.

1) Black women with private insurance (N= 20)
2) White women with private insurance (N=20)
3) Black women with Medicaid (N=20)
4) White women with Medicaid (N=20)

Details of the Free List. Each woman was asked to list what is most important for having a healthy pregnancy. The list was both written and recorded while being produced. She was then asked specific questions about the pregnancy experience. The questions are listed below:

A. General Free-List Questions.

Question 1: What are all the parts of a healthy pregnancy? What do you do, how do you feel, what should happen?

Question 2: What are all the parts of an unhealthy pregnancy? What do you do, how do you feel, what should happen?

B. Specific Free-List Questions:

1) In general, what do women seek support for when they are pregnant?
2) What kind of person does a woman seek support from when she is pregnant?
3) What kind of person should a woman not seek support from when she is pregnant?
4) What are the material things a woman needs to have a healthy pregnancy?
5) What are the material things a woman needs to avoid to have a healthy pregnancy?
6) What are the leisure activities a woman can engage in while pregnant?
7) What are the leisure activities a woman should not engage in while she is pregnant?
8) Imagine your idea of a healthy pregnancy experience. What are the characteristics of that experience?

9) Imagine your idea of an unhealthy pregnancy experience. What are the characteristics of that experience?
10) What were the top 3 most stressful things you experienced during your pregnancy?

Phase 1 Analysis. I determined the frequency of domain items listed by the participants. A free-list matrix was also used to get item frequencies along with the proportion of respondents mentioning that item (Weller & Romney, 1988). Terms listed by only few participants were excluded. This resulted in 105 most salient terms.

There was no culturally significant difference between race/class categories in which terms were most salient, based on consensus analysis using the UCINET cultural consensus analytical program. Based on this finding, we collapsed the list of 105 to the 35 most salient terms defining a healthy pregnancy (Romney & D'Andrade, 1964).

Phase 2

Questionnaire on Healthy Pregnancy Beliefs and Objective Pregnancy Behaviors. The purpose of this phase was to test whether competence between cultural models of pregnancy and actual behaviors during pregnancy differed by race/class categories. The 35 items were structured into a questionnaire based on subjective beliefs. I also asked participants to objectively state whether they actually did the things that they believed was important based on this list of 35 items. Finally, of those items listed as most important, we asked participants to rank their level of importance on a scale of 1-6. All of these items are described in more detail in Chapters 4 and 5.

Phase 2 Sample. Characteristics area new set of women, but 19 White Medicaid women were interviewed instead of 20 due to the time constraints of the study.

Phase 2 Analysis. We used the cultural consensus program in UCINET to examine whether women's responses to the questionnaire on subjective beliefs of pregnancy health indicate at least one dominant cultural model (Weller, 2007). We then used the QAP regression routine in UCINET to test whether factors beyond race/class membership are associated with sharing in both pregnancy beliefs and actual pregnancy behaviors (Hurshka, et al., 2008). To do this, we first created a person-by-person correlation matrix between each person's responses to the questionnaire. When two women agreed on answers to items in the questionnaire the correlation between their responses was high, but when there was disagreement, or lack of agreement, the correlation was low or negative. Negative agreement meant that those who are not included in the dependent variable being regressed on (or opposing category/ies) have agreement. For example, if the agreement matrixes are regressed by race using the behaviors and beliefs correlation matrix as the outcome, and the beta coefficient comes out negative for the category "Black," then women who are not Black have significant agreement in their response matrices.

Using the correlation as the outcome variable, we fit a linear regression model where the key independent variables were race and class. When two women were of the same racial group, then the race (or class) variable was coded as 1. If they were of different racial groups (or different classes), then the variable was 0. If women of the same racial group were more likely to agree on how to answer the questionnaire on healthy pregnancy beliefs, then the variable for race would be significant and positive.

We also created dummy variables for “both respondents white,” “both respondents black,” “both low SES,” and “both high SES.” The regression model did not indicate that there were multiple models, but we did find sharing of beliefs and behaviors based on contextual factors that will be discussed in detail in Chapters 4 and 5.

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CHAPTER 4

Cultural Consensus Models of Pregnancy Behaviors and Beliefs

Cultural models are the ways in which we know how to act as a person, ways in which we know what is good and what is bad, what is correct and what is not correct. They are a product of ideas and practices that are rehearsed, repeated, and instituted into daily life (Fiske, Kitayama, Markus, & Nisbett, 1998). They are embodied ways of being. Embodiment is the deep internalization of experiences practiced over time, and over the course of development until they seem "normal" (Bourdieu, 1977). Embodied cultural models of health drive health outcomes because they define the boundaries between which health behaviors can be enacted. Understanding these paths toward outcomes are being sought because they elucidate the patterns of health that individuals embody. Understanding cultural belief patterns is an approach to the embodiment context that can lead to the construction of models of health and health behaviors, address confounders, and improve our understanding of the contextual realities of health production.

Hrushka et al. (2006) used methods of cultural modeling to illuminate how traditional birth attendants and skilled birth attendants differ in their cultural understanding of causes of postpartum hemorrhaging in Bangladesh. Identifying the culture variation within each group, and then the difference in variation between the two groups, enabled them to determine if traditional and skilled birth attendants were drawing on the same cultural model of birth, or if the models of birth they held were different from each other. This ability to understand within group differences verses between group differences in paradigms of belief around health behavior provides a level of

understanding that can have a powerfully direct impact on how interventions are constructed.

In examining paths toward outcome as opposed to the health outcome itself, we are asking: What are the structures of cultural beliefs that support differences that might help explain differential outcomes? This framing opens the opportunity to address the role that race and class play in shaping cultural models of pregnancy health that women hold. The biomedical and public health communities have often been criticized for not fully explaining how race is defined, but often show that race is significant for reproductive health outcomes. There is an unexamined assumption that race and culture are related in some way (Kreuter & Haughton, 2006).

The purpose of this work is to assess whether cultural models exist by race and class categories through the Cultural Consensus Modeling. Cultural Consensus Modeling (CCM) is a systematic way of understanding if cultural models of reproductive health are shared within our defined sample (Romey et al., 1986). We can also use this method to determine if, instead of race and/or class defining cultural grouping, some other characteristic is defining the boundaries of what is correct, and what is not correct in the cultural domain of reproductive health beliefs and behaviors**.** Cultural Consensus Modeling can also be used to analyze other cultural dynamics as well. For example, we can look at an individual's measure of conformity to the consensus model. This is called an individual's cultural consonance (Goodenough, 1996).

Such an inductive approach has real value when understanding race because beliefs can emerge without being influenced by predetermined notions of difference. These items can then be assessed for statistical agreement between participants involved.

If agreement exists, then these items are used to define a particular cultural domain (Weller, 2007). Many anthropologists have successfully engaged this analytical approach (Dressler & Bindon, 2000), but it is not well represented within the public health literature for probing relationships of culture and health. To our knowledge, this work is the first time such inquiries have been applied to racial health disparities in reproductive health behaviors within the U.S.

Background

Why reproduction and why race? Various pregnancy outcomes consistently differ by racial categories (Bryant et al., 2010). In this study, we focus on self-identified categories of Black and White and ask: Are there different cultural models of health that might relate to differences in pregnancy outcome? Race, framed by environment-to-outcome associations, has been studied in the context of health production, but many of the nuances that define racial difference have not been incorporated into this discourse. The powerful relationships of contexts with stress load, and the links to health outcomes have been widely investigated and established (Gravlee, Dressler, & Bernard, 2005; Reyes-Garcia et al., 2010). This environment-to-outcome model focuses on how experiences drive poor behaviors and, in turn, health. For example, it is true that obesity (Gordon-Larsen & Popkin, 2011) and stress (Geronimus, 1994) are higher among Black women compared with White women regardless of income and education. Discrimination and social, psychological, and physical environments that are products of inequities, have been proposed as mediating factors leading to elevations in stress (Clark, Anderson, Clark, & Williams)**.** But both obesity and higher stress loads in pregnancy are indicators of internal psychobiological, as well as behavioral, processes within environmental

contexts. Multiple lines of evidence suggest that internal processes, bounded by patterns of cultural beliefs, lead to unhealthy behaviors or stress load accumulations that result in weathering or premature physiological aging due to repeated experiences of high stress load (Fuller-Rowell et al., 2013). The environment-to-outcome model presumes that self-regulatory processes needed for healthy coping in the context of stress are not being readily engaged, or that Black women are so overwhelmed by stress that the capacity to engage pro-health coping is exhausted. Either way, the fundamental engagement with health is what is being regulated or dis-regulated. Little has been done to understand these "internal processes." In this work, we examine the internal representations, or models of health that are held by an individual. From this perspective, it is important to understand cultural models of what is healthy because these models frame how health behaviors are derived and enacted (or thwarted).

Race and class categories are often conflated (Williams, 1994). We added poverty to the study design as a way of teasing apart different constraints on, or determinants of, reproductive health behaviors. An alternative explanation, following classical public health models of disparities, is that it is not about what is going on in people's heads so much as the conditions in which they live. Poverty is associated with poorer health outcomes (Adler & Ostrove, 1999). Poverty also means more challenging material conditions (Falkingham, 2004). It means more strained social relationships (Kasper et al., 2008). Behaviors in the context of poverty are more likely to be unhealthy (Hill, Hawkins, Catalano, Abbott, & Guo, 2005; Khan, Murray, & Barnes, 2002). Given these complexities, class is used along with race to address potential race/class conflations.

Reproduction is also a great starting point in understanding cultural models of health because it is so indelibly tied to cultural context. Female bodies are reproducing another human being. Unique to pregnancy, as a health experience, is the loaded reality that the pregnancy is a product of socially embedded experience, and results in a socially embedded outcome that has significance beyond just the reproduction of another body. Pregnancy embodies early relationship patterns that predict timing of the initiation of sexual intercourse, choice of sexual partners (Miller, Benson, & Galbraith, 2001), context of social conditions in which the pregnancy occurs, and, ultimately, behaviors the pregnant woman engages during pregnancy. The rite of passage into motherhood signifies a shift into a new role that has implications for the woman, the woman's close family, and the social environment in which that woman is embedded.

With this understanding, we test whether women go through pregnancy with the same models of health irrespective of race and class. If so, then why do they come out of pregnancy with very different outcomes falling along race/class lines? Do individuals grouped by race and/or class have shared cultural models of health, and when are measures of shared cultural models of health by race/class categories most useful? We include information from reproductive anthropology about what constitutes the environment of pregnancy. This environment includes specific information on parental relationships, physical condition during pregnancy, behaviors before and during pregnancy, feelings of social connectedness, and partner relationships in order to better understand what elements, within a woman's pregnancy environment, predict the cultural model of health that a woman holds.

Methods

Setting, Recruitment, and Sampling

Sampling assumptions are based on previous work by Dressler (2000). Women were recruited from DeKalb Medical Center, Emory University Hospital, and Grady Memorial Hospital which are all located within the urban center of Atlanta Georgia. The postpartum charge nurse was the primary point of contact at each hospital. The sample was stratified by self-report of race and class, based on payment type within the hospital, Medicaid versus private insurance. A HIPAA waiver was received for access to payer information. Women who gave birth after 36 weeks gestation were contacted in the hospital for possible entry into the study. The procedure used for recruitment was based on the method successfully used to recruit and interview women involved in the Stillbirth Collaborative Research Network population-based case-control study (Parker et al., 2011). Twenty women were included in each stratified group (Black Medicaid, Black Private, White Medicaid, and White Private). The refusal rates were similar across all categories (between 5-8%). This sample of women is referred to as the Phase 1 sample (see Chapter 3).

Free List and Cultural Consensus Modeling

We developed a semi-structured free list questionnaire to elicit responses in the domain of "what is important for a good and healthy pregnancy" based on Dressler's (2000) work. We took the components in the free list and determined the most frequently listed items. Common terms were defined, and responses coded based on their fit to the defined codes using the qualitative data management program MAXQDA. Terms listed

by at least 20% of the sample were included in the coding analysis. A total of 33 common terms met this definition.

Based on free-list analysis, the 33 common terms can be described by three main categories of health: **personal health** (defined as areas in which women come into pregnancy with pre-established patterns that they must reestablish after completion of pregnancy), **emotional support** (defined as areas where women refer to any emotional aspect of self-maintenance), and **medical adherence** (defined as an area in which women must follow guidelines specific to pregnancy, and under the supervision of a health care provider).

We used Cultural Consensus Modeling (CCM) to determine agreement in the domain of healthy pregnancy behaviors and beliefs. CCM is used to determine if high agreement exists within a domain, what the culturally correct knowledge ("answer key") is, and an individual's levels of competency of that knowledge (Romney, Weller & Batchelder, 1986; Batchelder & Romney, 1988). The common terms were analyzed using the cultural consensus option in UCINET, by race, class, race/class categories, and as a whole.

Between versus Within Group Sharing

Next, we tested whether an individual's response agreement was greater within than between groups. Agreement is measured by within group versus between group levels of competence. Weller et al. (2002) describe the calculations involved in comparing competencies. Within group agreement is the average agreement among informants within each group. We used UCINET to calculate the average cultural competence, comprising the square root of the average Pearson correlation coefficient,

and the average Pearson correlation coefficient weighted by the total number of pairs contributing to within group agreement. This represents the level of average within group shared knowledge among the groups in this sample. Between group agreement is calculated using the average Pearson correlation coefficient between all pairs of informants within each sample, and overall agreement with all the samples together.

Context Factors

Data on women's physical conditions, behaviors, close relationships, social contexts, and connectedness before and during pregnancy were collected based on factors known to be important within the social/cultural context of pregnancy. Basic demographic, physical, behavioral, and relationship data were obtained from each participant. A full list of the factors and their definitions can be found in (Table 4.1).

QAP Analysis

We further confirmed whether sharing was significant by race/class, using the test described in Romney et al. (2000) as a quadratic assignment procedure (QAP). In this test, a person-by-person matrix is prepared that expresses the proportion of the 33 common terms on which any two individuals agreed. The agreement matrix was created using the UNINET cultural consensus modeling procedure. A QAP linear regression model was then fit designating the agreement matrix as the dependent variable. Attribute matrices were created by designating each individual attribute with a 0,1 dummy variable using UCINET to convert attributes to a matrix that is the independent variable. The regression was then performed using the QAP regression procedure in UCINET. In the output, the intercept is the average correlation between responses of two people who do not share similar characteristics or attributes. This can be considered the background or

the sharing due to belonging to a larger group. The intercept plus coefficient, using the unstandardized correlation coefficient, is the average correlation between two people who do share the same attributes or characteristics. Non-significance for a term means that there is no greater likelihood of sharing if they are in the group (e.g., both Black and on Medicaid) than the likelihood of agreeing among any random person in the total sample.

Binary Logistic Regression Analyses

As a secondary analysis, binary logistic regression analyses were performed to determine the associations between the context factors associated with sharing and race to assess possible mediators of the associations being observed. All analyses were performed with SPSS.

Qualitative Assessment

Responses from the semi-structured interviews were qualitatively analyzed using MAXQDA Plus to better understand how women talk about, and experience the context factors that seem most relevant to behaviors and beliefs around pregnancy. We focused on how women describe their relationships with their fathers because, in the quantitative assessments, relationship with father consistently emerged as being significantly associated with pregnancy health models in our sample.

Results

Sample Description

The primary hypothesis of this study was that cultural models of pregnancy health were congruent with race/class categories. Overall, there were some class differences but few significant differences by race alone. The most significant number of differences occurred at the intersection of race and class. More specifically, education level differed

significantly by class. Between 5% and 11% of women with private insurance had not graduated from high school. A much higher proportion of White women on Medicaid (WM) had less than a high school diploma (47%), compared with Black women on Medicaid (BM) (20%). Women on Medicaid tended to be younger than 29 (p-value = 0.001) compared with those who have private insurance. White privately insured women (WP) tended to have their first child when they were older than 29, while women on Medicaid (WM) tended to have at least one other child in the home at the time of the focal birth, even though they tended to be younger (18% over the age of 29). Prevalence of C-sections were higher among women with private insurance (Medicaid, BM: 36% WM: 18% versus private BP: 53%, WP: 56%). Black women on Medicaid also have significantly higher C-section prevalence than WM women. White women on Medicaid also tended to smoke much more than any other group (53% before pregnancy, and 41% during pregnancy). Exercise frequency during pregnancy had a class component to it. Most women with private insurance exercised during pregnancy (BP: 70%, WP: 75%). Interestingly, 65% of Black women with private insurance were obese before pregnancy began. This compared with every other group (WP: 25%, WM: 35%, BM: 30%) suggests that obesity is an issue even among women who value exercise.

Free List

The free list for the domain of healthy behaviors and beliefs began with the question: “What is important for a good and healthy pregnancy?” This generated 105 distinct items. After evaluating these items for overlap in meaning and redundancy, 33 were retained for analysis (Tables 4.2 and 4.3). T-tests identified where there were significant differences in response by race, and by class separately, and in combination.

Comparing the four race/class categories proved more explanatory than comparing the two race categories, or the two class categories separately. Furthermore, the distribution in responses differed significantly more at the race/class intersection than for either race or class as a whole. For example, White women on Medicaid put much less value on avoiding smoking, alcohol, or drugs, than all other women in the study. Both White and Black women with private insurance placed much less importance on avoiding "clubs, bars, and late night activities" than did women on Medicaid. This distribution of responses coincides with the demographic finding that women on Medicaid tend to be much younger than women with private insurance. Taken together, the descriptive data and domain item data suggest that there are subtle differences at the intersection of race and class. We next tested whether these differences translate into distinct cultural differences shaping women's understanding of what is important for a good and health pregnancy.

Cultural Consensus Modeling Analysis

Based on the cultural consensus modeling (CCM) ratio of first eigenvalue to second eigenvalue (cut off <3), and the criterion that individual loadings on the first factor are all positive, consensus in the domain of healthy pregnancy practices and behaviors (HPPB) was found among all race categories (Black Eigenvalue: 8.038; White Eigenvalue: 8.057; All Eigenvalue: 14.84). Between group correlations versus within group correlation values were compared for all race and class categories to test whether the HPPB domain is a single cultural model, or if substantial subcultural patterning exists by race and class (Waller, Romney, & Orr, 1986). The amount of unique sharing in all categories never exceeded 0.008 when comparing values (Table 4.4). This suggests that

there exists overarching cultural agreement in the HPPB domain shared across race/class categories.

QAP Regression and Subgroup Analysis

The matrices of responses from data collected on what is important for a good and healthy pregnancy were compared by each race/class category to determine whether any group's responses fit the criteria for a subcategory of beliefs within the broader belief system. We constructed a person-by-person matrix that became the dependent variable in the regression analysis. We then fit a QAP linear regression model with the agreement matrix as the dependent variable, and the cultural consensus matrix as the independent variable. Parceled by race/class categories, Black women with private insurance do show slightly significant subgroup sharing (Beta: 0.02, p-value: 0.04). This finding indicates that there might be greater homogeneity of beliefs among Black women with private insurance than among the other three groups. White women on Medicaid tended to have a higher prevalence of more negative behavioral, demographic, and relationship context factors. They had the highest percent of "at least one other child in the home" at the time of this birth even though they tended to be younger; 18% over the age of 29 (Table 4.1). They tended to smoke more both before and during pregnancy, and they tended to not value exercise during pregnancy.

We took an *a priori* interest in the impact of maternal relationships on pregnancy behaviors and beliefs, as a part of the cultural context in which pregnancy health is produced. This included the mother's relationship with her parents and her partner. Here, we focus on the relationship with the mother's father, because in the analysis of what impacts how items within the cultural domain of "what is important for a good and

healthy pregnancy" are prioritized, maternal relationship with father consistently emerged as a significant factor (Table 4.5). In this sample, Black women tended to have a much higher prevalence of negative relationships with their father (BM: 40%, BP: 45%) than White women with private insurance (WP: 25%). But the women who had the highest prevalence of poor relationships with their father were white women on Medicaid (WM: 65%). White women on Medicaid also had the highest prevalence of poor relationship with their mothers (WM: 55%, BM: 20%, WP: 15%, BP: 30%). Relationship with partner also yielded a thought-provoking outcome. Black women on Medicaid and White women with private insurance both had high prevalence of "good" relationship with partner (90%), while Black women with private insurance had the lowest prevalence of "good" relationship with partner (BP: 50%, WM: 55%).

Binary Regression Analysis

When we performed a binary regression analysis for race as a whole and class as a whole, and included the father relationship variable in each model, a bad relationship with one's father was not significantly associated with either race or class (Race: β = 0.101, p-value: 0.803, Class: β = -0.506, p-value 0.263). What was associated with a bad relationship with father, in this population, was having a partner who had been jailed (β = 1.013, OR = 2.75, p-value 0.035) and having more children in the home (β = 1.312, OR = 3.71, p-value 0.01) (both of which are more highly represented among White women on Medicaid). We reorganized the healthy pregnancy domain items among women who had a bad relationship with their fathers, and compared their answers by race categories because we did see variations in response grouping in the QAP analysis that fell along race categories (Table 4.5). Women who characterized their relationship with their

fathers as negative had significantly different patterns in how they described what is important for a good and healthy pregnancy that differed from those who did not. The item responses that differed significantly are listed with p-values on Table 4.6. They include staying hydrated (t-test p-value: 0.022), not listening to or complying with doctor (t-test p-value: 0.008), having support from your partner (t-test p-value: 0.02), engaging in light exercise (t-test p-value: 0.002), not being around those who are not supportive of what you want (t-test p-value: 0.03), and being around someone who is emotionally supportive (t-test p-value: 0.02). Black women who reported poor relationships with their father placed significantly lower value on emotional support and medical adherence, but placed higher than average value on personal health categories. White women who reported poor relationships with their fathers placed higher value on emotional categories and medical adherence, but lower importance on personal health categories (Table 4.6).

Qualitative Assessment

Finally, we assessed how women talked about the relationship with their fathers (Table 4.7a). Good relationships referred to any positive reference to the present day relationship with the father without any qualifications that the relationship was ever negative (Table 4.7b). A bad relationship with the father was defined in multiple ways by this sample. Early death of the father was included here because it implied loss of whatever benefit a good relationship might have had. Divorce, emotional distance, and absence characterized many of the reasons why the relationship was described as negative.

Discussion

Women in Atlanta, Georgia have particularly pronounced racial disparities in reproductive health outcomes. In DeKalb County alone, pre-term birth rates (i.e., percentage of live births < 37 completed weeks' gestation) range from 8% to 28% of deliveries, depending on census track. All told, 18.4% of births to Black women and 12.2% of births to White women were delivered pre-term in 2006 (Georgia Division of Health and Human Resources, 2008). Low socioeconomic status, smoking, and lack of prenatal care have failed to explain much of either pre-term rates or the racial disparities. By deploying cultural consensus modeling, we begin to better understand how conceptualized cultural models might influence such health risks.

In the domain of healthy pregnancy behaviors and beliefs, women in different race/class groupings, in this sample, do not differ in their cultural models of what is important for a good and healthy pregnancy. Thus, the cultural domain of pregnancy health is shared across race/class groups, in this sample. This suggests that race may not have culturally distinct patterns of beliefs around what healthy pregnancy is. However, race does influence what is prioritized within the domain of pregnancy health when the mother's relationship with her father is a negative one. In Table 4.6, we see that Black women who reported poor relationships with their father placed lower value on emotional support and medical adherence, but placed higher than average value on personal health categories compared with White women who had bad relationships with their fathers. White women who reported poor relationships with their fathers placed higher value on emotional categories and medical adherence, but lower importance on personal health categories. This suggests that cultural consonance is influenced by relationships.

This study has an important and novel finding because, first it shows that in the domain of pregnancy beliefs and behaviors race may not mean a distinct culture, and second it links deviations from health consensus to relationships. In the DeKalb County area, where our samples live, we stated earlier that 18.4% of births to Black women and 12.2% of births to White women were delivered pre-term in 2006 (Georgia Division of Health and Human Resources, 2008). One assumption about the cause of such racial difference is that Black women have lower levels of education. But the incongruity that college-educated Black women have as much as a 25% higher prevalence of pre-term births than White women with less than a high school education (Ashton, 2008) has long been observed.

The observations presented here might help us understand why, for example, racial disparities in pre-term birth are present even when controlling for known risk factors such as education. White women on Medicaid, in this study, have higher prevalence of partners who have been incarcerated, lower education levels, and higher numbers of children in the home than any other group (Table 4.1). However, none of these context factors are associated with how they conceive pregnancy health. White women on Medicaid also have a higher prevalence of negative relationships with their fathers. The difference, when we look at what is going on by race, is that, in this context, they are not devaluing the importance placed on emotional support related categories. This suggests that emotional support-seeking behaviors, and the value that women place on such behaviors in the context of pregnancy health requires further study. This also suggests that race alone is not the most informative categorical grouping, but race in the

context of other factors could prove to be more informative. This is where the discussion on race needs to be placed, particularly in the context of reproductive health.

Returning to our original question: If women are going through pregnancy with a shared cultural model of pregnancy health, then why do pregnancy outcomes differ along racial lines even when controlling for class? Our findings suggest that there might be something about the paternal relationship that influences how a woman conceptualizes her own health during pregnancy. Pregnancy is a socially engaged outcome of relationship patterns that predict timing of the initiation of sexual intercourse, choice of sexual partners, context of social conditions in which the pregnancy occurs, and, ultimately, behaviors that the pregnant woman engages in during pregnancy. All of the above factors leading up to the pregnancy environments have also been associated with a woman's relationship with her parents (Moore & Chase-Lansdale, 2001; Kogan et al., 2013). It would be helpful to better understand specifically the father's role in these environments. Why might race influence these associations? The data we present here do not answer this question, but rather offers guidance in moving towards an answer.

Limitation

We used a relatively small sample in Atlanta, Georgia. These findings should be tested again against larger sample sizes. One of the difficulties of qualitative work is that it is cumbersome, and more of a burden to participants, so added value must be demonstrated. Further, if done right, qualitative data collection exacts a substantial burden of data management on the investigators. Analytic methods are still developing; the more they are used, the more sophisticated and efficient they will become with time. This is not an end point analysis, but opening the door for further development.

Classic public health categories of race and class do not fully explain differences in the models of health that women have. We did not find that negative pregnancy behaviors and familial relationships were prevalent among the more marginalized groups (Medicaid, Black). This suggests that race (and, possibly class) as an analytic unit of measurement is not irrelevant, but it must be understood within a more nuanced context in order to understand how health is conceptualized, and ultimately why deviations into unhealthy behaviors occur. This also suggests that anthropological tools used to elucidate more nuanced associations would benefit public health by enabling a more population grounded assessment of conditions. Using this approach, we were able to observe, for example, that White women on Medicaid have considerably poorer environmental contexts than any other group, Black women on Medicaid were very heterogeneous in many factors associated with class, and that class, like race, has limitations in what can be assumed when trying to understand models of causation in heath disparities.

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Figures and Tables

Table 4.1: Sample Characteristics. These are the proportions of women in each race/class category who responded yes to each category.

Context Factors		Proportions				Chi square p-value	Dichotomized Category Definition
		BM	**BP**	**WP**	**WM**		
Demographic	Age high	0.05	0.50	0.60	0.18	0.001	Women older the 29 equal 1 and women young equal 0.
	EducationL	0.20	0.05	0.11	0.47	0.007	Women who had a high school education or lower equal 1 and women with education above high school equal 0.
	+1 child in home	0.50	0.70	0.40	0.88	0.037	This variable equals 1 for women who have at least one child in the home at the time of this birth, and 0 if this is their only child.
Behavioral	Exercise BF	0.45	0.70	0.75	0.41	0.044	Women who exercised before pregnancy equal 1, and women who did not equal 0.
	Smoke BF	0.15	0.10	0.10	0.53	0.002	Women who smoked before pregnancy equals 1 and women who did not equal 0.
	Smoke D	0.10	0.00	0.05	0.41	0.101	Women who smoked during pregnancy equals 1 and women who did not equals 0.
	B_fatherJail	0.40	0.30	0.20	0.45	0.154	If the father of the baby was ever jailed then a 1 was given, and if never jailed then a 0 was given.
	M_fatherJail	0.30	0.35	0.15	0.40	n/a	If the woman's father was ever jailed then a 1 was given, and if never jailed then a 0 was given.
Physical	V_birth	0.64	0.53	0.56	0.82	0.067	Women who had a vaginal birth equals 1 and those who had a C-section have a 0.
	Pre_obese	0.30	0.65	0.25	0.35	0.045	Women who were obese going into pregnancy equal 1 and women who were not equal 0.
Relationship	Mother_good	0.80	0.70	0.85	0.55	0.017	Women who describe their relationship with their father as positive equals 1, and if negative then it equals 0.
	Father_good	0.60	0.55	0.75	0.35	0.029	Women who describe their relationship with their partner as positive equals 1, and if negative then it equals 0.
	Partner_good	0.90	0.50	0.90	0.55	0.028	Women who describe their relationship with their mother as positive equals 1, and if negative then it equals 0.

Table 4.2: Domain Response. These are the proportion of individuals in each designated group answering yes to the domain item

Domain Items	Proportion Answering "Yes"			Proportion Answering "Yes"		
	Black	White	t-test P-value	Medicaid	Private	t-test P-value
Proper nutrition	0.85	0.875	0.745	0.875	0.85	0.745
Stay hydrated	0.575	0.35	0.044	0.425	0.5	0.501
Regulating your own feelings of stress	0.625	0.425	0.073	0.625	0.425	0.179
Get enough exercise	0.475	0.525	0.417	0.275	0.725	0.000
Valuing adherence to OBGYN prenatal care	0.775	0.875	0.239	0.775	0.875	0.077
Not listening to or complying with doctor	0.25	0.875	0.000	0.425	0.7	0.013
Prenatal care is very important	0.875	0.85	0.745	0.85	0.875	0.330
Take time to care for self (skin/body/hygiene)	0.525	0.35	0.115	0.5	0.375	0.260
Having support from your partner	0.35	0.55	0.072	0.425	0.475	0.653
Having support from my family	0.6	0.625	0.818	0.65	0.575	0.491
Clubs, bars, and late night activities that might be dangerous	0.5	0.325	0.112	0.625	0.2	0.001
Avoid smoke/alcohol/drugs	0.9	0.65	0.077	0.775	0.775	0.723
Walking/light exercise	0.7	0.475	0.041	0.55	0.625	0.256
Rest	0.5	0.45	n/a	0.475	0.475	n/a
Calm things	0.275	0.225	0.606	0.375	0.125	0.010
Non-supportive	0.425	0.275	0.160	0.375	0.325	0.639
Not caring	0.425	0.275	0.16	0.325	0.375	0.639
Negative/ mean/ Rude	0.575	0.225	0.001	0.325	0.475	0.171
Understanding	0.45	0.35	0.361	0.375	0.425	0.648
Someone who does not have your interests at heart	0.425	0.5	0.501	0.35	0.575	0.044
Not supportive of what you want	0.1	0.5	0.000	0.225	0.375	0.143
Not Knowledgeable	0.525	0.525	0.999	0.4	0.65	0.025
Someone with experience/ another mom	0.5	0.525	0.823	0.4	0.625	0.044
Maternity cloths	0.5	0.425	0.434	0.45	0.475	0.741
Take prenatal vitamins	0.775	0.675	0.317	0.7	0.75	0.617
Emotionally supportive	0.5	0.675	0.112	0.675	0.5	0.256
No heavy exercise	0.4	0.475	0.499	0.325	0.55	0.043
Anything that puts baby at risk	0.25	0.4	0.152	0.2	0.45	0.004
Have a healthy sex life	0.45	0.675	0.043	0.45	0.675	0.013
Fruits	0.6	0.625	0.818	0.6	0.625	0.491
Vegetables	0.625	0.75	0.228	0.7	0.675	0.809
Grains/Whole grains	0.175	0.175	0.999	0.225	0.125	0.556
Mother is healthy with no complications throughout	0.425	0.4	0.82	0.3	0.525	0.041

Table 4.3: Domain Response with Class. Here the proportion answering yes is reported at the intersection of race and class.

Domain Items	Proportion Answering "Yes"				t-test P-value
	BM	BP	WP	WM	
Proper nutrition	0.7	0.8	0.9	0.85	0.957
Stay hydrated	0.35	0.6	0.4	0.3	0.206
Regulating your own feelings of stress	0.55	0.5	0.35	0.5	0.171
Get enough exercise	0.15	0.75	0.7	0.35	0.000
Valuing adherence to OBGYN prenatal care	0.55	0.85	0.9	0.85	0.117
Not listening to or complying with doctor	0	0.5	0.9	0.85	0.000
Prenatal care is very important	0.65	0.9	0.85	0.85	0.572
Take time to care for self (skin/body/hygiene)	0.4	0.5	0.25	0.45	0.239
Having support from your partner	0.25	0.4	0.55	0.55	0.304
Having support from my family	0.55	0.6	0.55	0.7	0.801
Clubs, bars, and late night activities that might be dangerous	0.55	0.3	0.1	0.55	0.002
Avoid smoke/alcohol/drugs	0.8	0.8	0.75	0.55	0.094
Walking/light exercise	0.65	0.65	0.6	0.35	0.08
Rest	0.4	0.45	0.5	0.4	n/a
Calm things	0.3	0.15	0.1	0.35	0.074
Non-supportive	0.35	0.35	0.3	0.25	0.380
Not caring	0.3	0.5	0.25	0.3	0.380
Negative/ mean/ Rude	0.45	0.6	0.35	0.1	0.005
Understanding	0.3	0.55	0.3	0.4	0.405
Someone who does not have your interests at heart	0.3	0.5	0.65	0.35	0.173
Not supportive of what you want	0.1	0.1	0.65	0.35	0.000
Not Knowledgeable	0.45	0.55	0.75	0.3	0.042
Someone with experience/ another mom	0.45	0.5	0.75	0.3	0.043
Maternity cloths	0.3	0.6	0.35	0.5	0,306
Take prenatal vitamins	0.6	0.8	0.7	0.65	0.740
Emotionally supportive	0.5	0.4	0.6	0.75	0.276
No heavy exercise	0.35	0.45	0.65	0.3	0.12
Anything that puts baby at risk	0.1	0.3	0.6	0.2	0.011
Have a healthy sex life	0.25	0.55	0.8	0.55	0.016
Fruits	0.45	0.55	0.7	0.55	0.801
Vegetables	0.45	0.6	0.75	0.75	0.666
Grains/Whole grains	0.15	0.15	0.1	0.25	0.63

Table 4.4. Between vs. Within. These are the results of group sharing evaluation.

Partitioning Beliefs into Shared and Unique Components Across Samples								
	Overall Within Group Agreement							
	Competency Within Each Group							
Avg group Competency	BM	BP	WM	WP	Avg[a] within	Between[b] (shared)	Unique[c]	Corr[d]
0.587	0.558	0.590	0.618	0.5830	0.588	0.587	0.001	0.345

Partitioning Beliefs into Shared and Unique Components Across Samples						
	Overall Within Group Agreement					
	Competency Within Each Group					
Avg group Competency	Black	White	Avg[a] within	Between[b] (shared)	Unique[c]	Corr[d]
0.574	0.563	0.585	0.582	0.574	0.008	0.338

Partitioning Beliefs into Shared and Unique Components Across Samples						
	Overall Within Group Agreement					
	Competency Within Each Group					
Avg group Competency	Private	Medicaid	Avg[a] within	Between[b] (shared)	Unique[c]	Corr[d]
0.570	0.573	0.567	0.575	0.570	0.005	0.333

a. Average of the within-sample agreement levels
b. Average between-sample agreement level
c. Average amount by which the within-group agreement exceeds the between-group agreement
d. Pearson correlation coefficient

Table 4.5 Quadratic Assignment Procedure (QAP) Data for Context Factors. A QAP regression analysis was performed for each context factor. The outcome matrix behavior and belief sharing.

	BM (p-value)	BP (p-value)	WM (p-value)	WP (p-value)
Intercept	0.17009 0.00000	0.14969 0.00000	0.16312 0.00000	0.14713 0.00000
Race/class category	-0.02128 0.03448	0.01933 0.04748	-0.01459 0.12344	0.01664 0.08396
Bad relationship with father	0.01549 0.06097	0.01559 0.06647	0.01951 0.03298	0.01993 0.01999

Table 4.6. Sharing Based on Relationship. In this table We compare the responses of Black and White women who reported a bad relationship with their fathers.

	Domain Items	Proportion Answering "Yes"			t-test comparing Black and White
		Black Bad Dad	White Bad Dad	All	
PH	Proper nutrition	0.83	0.94	0.86	0.301
PH	Stay hydrated	0.72	0.33	0.46	0.022
E	Regulating your own feelings of stress	0.44	0.44	0.53	0.631
PH	Get enough exercise	0.56	0.56	0.5	0.631
MA	Valuing adherence to OBGYN prenatal care	0.78	0.83	0.83	0.500
MA	Not listening to or complying with doctor	0.39	0.83	0.56	0.008
MA	Prenatal care is very important	0.83	0.83	0.86	0.671
PH	Take time to care for self (skin/body/hygiene)	0.56	0.56	0.44	0.631
E	Having support from your partner	0.22	0.61	0.45	0.02
E	Having support from my family	0.67	0.72	0.61	0.50
PH	Clubs, bars, and late night activities that might be dangerous	0.39	0.28	0.41	0.362
MA	Avoid smoke/alcohol/drugs	0.89	0.72	0.78	0.201
PH	Walking/light exercise	0.72	0.44	0.59	0.002
PH	Rest	0.39	0.44	0.48	0.50
PH	Calm things	0.22	0.17	0.25	0.500
E	Non-supportive	0.28	0.28	0.35	0.644
E	Not caring	0.39	0.28	0.35	0.362
E	Negative/ mean/ Rude	0.56	0.28	0.4	0.088
E	Understanding	0.5	0.28	0.4	0.153
E	Someone who does not have your interests at heart	0.5	0.39	0.46	0.369
E	Not supportive of what you want	0.11	0.44	0.3	0.03
E	Not Knowledgeable	0.61	0.39	0.53	0.159
E	Someone with experience/ another mom	0.56	0.33	0.51	0.157
PH	Maternity cloths	0.44	0.61	0.46	0.311
MA	Take prenatal vitamins	0.83	0.67	0.73	0.222
E	Emotionally supportive	0.39	0.78	0.59	0.02
PH	No heavy exercise	0.39	0.44	0.44	0.50
MA	Anything that puts baby at risk	0.22	0.39	0.33	0.235
PH	Have a healthy sex life	0.44	0.67	0.56	0.157
PH	Fruits	0.61	0.56	0.61	0.500
PH	Vegetables	0.67	0.67	0.69	0.638
PH	Grains/Whole grains	0.11	0.22	0.18	0.329
PH	Mother is healthy with no complications throughout	0.5	0.33	0.41	0.250

Table 4.7. Qualitative Assessment of Father's Relationship. Below are the responses that represent what women are saying about their relationship with their father (**a**) when the relationship was good and (**b**) when the relationship was bad.

a.

Consensus Item	Typical Response	Extreme of Typical	Atypical Response
Good Relationship	"Great, supportive. He was always present" (Any positive reference to present day relationship with father)	"Pretty normal. We play, fight, and pick at each other. We play like friends"	"Good. Mom was loud, so he was the quiet guy. Dad worked and did not do much with me" (Positive reference even if clarification reveals negative aspects of relationship)

b.

Categories of "bad relationship"	Typical Response	Extreme of Typical	Atypical Response
Death of Father in childhood	"he passed away when I was 12"	N/A	N/A
Strained due to divorce	"Strained. We are not close. He was present in my young life until the divorce. I did not like him" (direct mention of divorce causing strain)	"It is getting better, but very distant. He was present only every other weekend"	"I no longer speak to my real one. Stepfather adopted me, and we have a great relationship" (implication that relationship changed after divorce)
Negative Shift in adulthood	"We do not speak because of a dispute with my mom. It was good before my first birth at 17" (Any direct reference to a negative change in the relationship over time)	"This is difficult to talk about. I was closer with my dad until something happened then my relationship with mom grew"	N/A
Positive shift in adulthood	"He was not around when I was a child, but as an adult it has gotten better" (direct recognition that relationship improved with age)	"He was not around when I was younger, and tried to make up for it by buying things. It is closer now, but we still have issues"	"Progressing. We never had a close relationship. He was present during the childbirth. As he matured he communicated more" (implied recognition that

			relationship has improved with time)
Emotionally distant	"He was supportive and always around, but it was not an emotionally bonded relationship. There was emotional distance, no heart to heart talks" (direct mention of emotional distance)	"Good. Mom was loud, so he was the quiet guy. Dad worked and did not do much with me"	"Good, but not too close. We were more detached with age, but respect each other" (implied mention of emotional distance)
Absent but had other father figure	"Don't know my father. I met him once, but my uncle and grandpa played father's role and made sure to have one-on-one time" (direct mention of someone who filled that role)		
Absent with no other father figure	"No relationship. I know him but he was never present" (no mention of anyone who filled that role when asked)		

CHAPTER 5

Is there a Cultural Burden of Race that Makes Pregnancy More Risky for Black Women?

Introduction

Medical anthropologists have generally agreed that race has an impact on health outcomes. For example, Gravlee's work on skin color and blood pressure illustrated that ascribed color and not skin pigmentation based on reflectometry was associated with blood pressure such that darker skinned individuals had higher average blood pressure than did their lighter skinned counterparts (Dressler & Gravlee, 2005). Pathways working to elevate stress load via mismatches between internal process and external conditions frame many of the theoretical explanations of the presence of socially mediated racial differences. For example, John Henryism (James, Hartnett, & Kalsbeek, 1983) suggests that strategies of coping with persistent exposure to stressors, such as racism and social discrimination, are working through mechanisms that result in the expending of greater psychological effort, which results in increased physiological stress load associated with prolonged exposure to stress. Geronimus (1994) has referred to the increased load over the life-course as weathering. According to Geronimus, Black women's experience of repeated discrimination and bias ages a body such that physiological age is greater than that chronologic age. This prematurely increases her risk of age and stress related disease.

Reproductive health disparities, in the context of race, further imply that something is wrong within the Black environment. Blackness, or being Black, itself places women at greater risk for pre-term birth (18% for Blacks versus 12% for Whites (MacDorman, 2011)), higher maternal mortality (11.7 per 100,000 live births for White

women compared with 39.2 for non-Hispanic Black women), increases in stillbirth rates (11.3 per 1,000 deaths for Blacks compared with 5.0 per 1,000 for Whites), and greater risk for neonatal morbidity than their White counterparts even in the absence of other known risk factors such as smoking, drinking, poverty, etc. (Bryant, Worjoloh, Caughey, & Washington, 2010). After a steep rise during 1990-2006, pre-term birth rates since have declined a little, due in part to decreased rates of late pre-term births (Child Trends Data Bank, 2013). While racial disparities in pre-term birth have followed this trend and decreased very slightly, Black women are still significantly worse off on all socioeconomic levels.

The problem is that we do not know what it is about being Black that creates categories of health behaviors and beliefs, but there is abundant evidence that being Black implies poorer health. This uncomfortable relationship takes on another dimension in the context of reproductive health behaviors and outcomes, because reproduction is so indelibly tied to social context. Parental relationships, partner choices, physical conditions going into pregnancy, nutrition and social support all play significant roles in the production of a pregnant body. The quality of that social environment impacts both pregnancy experience and outcome. But, does Blackness really exist as a singular category of risk? The categorical use of race view is widespread within the public health community. It has also been criticized by those within this community (Blackmore et al., 1992). Amidst this criticism, according to the Centers for Disease Control and Prevention (2013) and the March of Dimes, Black race is a risk factor synonymous with social or personal disadvantage leading to poor birth outcomes.

These complex, and sometimes confusing, uses of race can be traced back to professional education. Medical and public health education in the last 20 years has incorporated cultural competency courses into professional education. The goals of these courses have been to promote the production of professionals who can communicate in such a way that health advice is administered with as much understanding as possible. A grating dissonance has emerged from this perspective because race has not really been put into question as a "culture" empirically. Generally, cultural competency in medical school education has been criticized as promoting cultural assumptions that could hinder practitioners' understanding of the person in front of them (Kleinman & Benson, 2006). Furthermore, systematic discrimination has been found in health care practices, but often goes unacknowledged except by those who are the target. Cultural competency easily can shift into stereotypical assumptions given such an imbalance (Dogra, Reitmanova, & Carter-Pokras, 2010). Within the conflation of race and culture, bias can go unchecked creating "Black women are . . ." statements that do not necessarily represent the experience of the Black woman standing in front of them.

In this study, we focus on reproductive health to understand whether patterns of reproductive health behaviors are grouped by race and/or class categories without assuming that they are. We attempt to integrate quantitative empirical social science with humanistic theory, in order to understand how the concept of cultural competence relates to race. The cultural competence approach to assessing attainment of culturally valued goals offers a measure of the ability to approximate the shared cultural models identified through cultural consensus, and to determine how much individuals are able to behave

like that model they ascribe to (Weller, 2007). To what extent is one able to perform in accord with a cultural model is one's measure of competence.

The relationship between cultural competence and poor health outcomes is also found in other arenas outside of race studies. But race, primarily Blackness, is of particular interest because it has become a punitive metaphor for poor health outcomes without substantive understanding of what Blackness is, or what it means. One's cultural competence, or one's difficulty in realizing/enacting the cultural model to which one holds, seems to increase disease risk. The assumptions here are first, that Blackness presumes the existence of a shared cultural model and second, that being Black means bearing an increased burden of enacting cultural models which impacts health via stress pathways. By empirically examining women of different races through cultural consensus modeling, we can begin to understand empirically more complex dimensions of how and if race relates to behavioral choices, or whether there are other factors within one's environment that are more relevant than that race measure. This more nuanced approach enables more nuanced understanding.

The primary goals of this study are as follows: 1) to use cultural consensus modeling to better understand patterns of cultural consensus by race, 2) to better understand how cultural competence is related to self-identified categories of race, and 3) to identify other factors within the reproductive health environment that may bridge the relationship between widely shared cultural models, and an individual's ability to enact that model. In doing this, we must also discuss current tensions within the race discourse that have limited understanding of the relationship between race and health outcomes.

Tension 1: Race-as-Risk Factor versus Health Disparities Observations

There is discordance between the observation that racial disparities in health are causally associated with race, and the opposing views that race is a risk marker rather than a risk factor, a cause of disease, or a determinant of medical adherence. This discordance makes it difficult to effectively engage the question of race and health. Black race is statistically associated with poor reproductive health outcomes (Bryant, Warjoloh, Caughey, & Washington, 2010), and medically important risk factors such as infection during pregnancy (Goldenberg et al., 1996; Wen et al., 2013), and later entry into prenatal care (Bryant, Warjoloh, Caughey, & Washington, 2010). These observations then frame how the medical community understands race. Without context, the leap to Black means greater infection, or Black means improper medical care could be made. Practitioners do not necessarily make this leap, but an information void exists leaving open the influences of more stereotypical assumptions in the context of such information void (Steele, 2011). Tensions between race-as-social-production versus race-as-biological-reality are also raised but left unexplained, leading to the assumption that race is a category equated with generalized risk. Examinations of genetic and epigenetic differences associated with ancestral origins, without a thorough understanding of the nature of epi-phenomena, can devolve into unexamined assumptions of genetic causation (Gravlee, 2005).

Also, when John Henryism and weathering are discussed, the focus is on the stress load outcome. The focus is also on the perceptions of experience usually described as perceptions of racism, or feelings of discrimination relating these to outcomes. Public health studies have linked both institutional and personal racism to reproductive health

outcomes, but these become "catch all" causes for elevated stress load, and fall short of examining more nuanced constructions of behavior, belief and possible limitations on experiences that might be leading to racial differences in health production (Benkert, Peters, Clark, & Foster, 2006). These linkages also assume that race is working narrowly through perceptions of racism in producing increased stress load. This might be true, but it limits Black women's experiences of stress to discrimination-related experiences. The possibility that social experiences might be impacting Black women in ways that are not just expressed in terms of perceived racism have gone under-explored.

One response to the focus on race arising from a race = risk paradigm is to exclude race as a study variable because of its strong association with other relevant social exposures (Darity & Myers, 1998; Massey & Denton, 1993; Collins & David, 1997; Messer et al., 2006; Morenoff, 2003). Some argue that including race does "create a false impression of direct comparability when, in fact, they are plagued by residual confounding and other limitations" (Messer et al., 2008). However, Williams and others have argued that race is a difficult construct to give up; "It provides a convenient and powerful organizing structure for the examination of inequality, injustice, and discrimination in this country. It also remains central to the formation of identity" (Williams & Mohammed, 2009). Avoiding race does not necessarily remedy the problem of conflation because the associations that are conflated still exist, and are disproportionately represented by Blacks.

The problem is not *that* race is engaged, but rather *how* race is engaged. Using race singularly, as an explanatory variable, is a misuse of race because we are not sure what it is explaining beyond the association being tested. Contextualizing race with some

qualitative variation or explanation about how race is used would better reflect the experiences that other fields of study such as feminist studies and African American studies have revealed as defining characteristics of the Black experience. In practice, this means knowing something more about the population being studied than simply how their race is defined (by themselves or others). Currently, the epidemiological data on Black women's health is removed from qualitative experiences such that: 1) there is little information from Black women about their experiences, and 2) race is often listed as a predictor without explanatory understanding, or even preliminary definition of what race is, going into the study (Dressler et al., 2005), or what race is really doing once the disparity is observed.

One way to resolve this uncomfortable relationship is by grounding quantitative social science methods in humanistic theory, in order to gain empirical understandings of the complex dynamics associated with race and reproductive health. Humanistic and social theorists have carefully parsed the complexities of race and structural inequities resulting from racial bias. Quantitative social theorists have become adept at incorporating complex qualitative understandings into quantitative models, and empirical methods to understand a host of dynamics. For example, social determinants investigators have taken strides towards our understanding that Blackness means higher chances of environmental exposure to poor nutrition (Savits et al., 2012), unsafe environments (Wallerstein, Yen, & Syme, 2011), and biased care interactions (Milligan, et al., 2002), creating a picture where internal stress is higher, and external conditions are harsher for Black women. In all of these examinations, what is left unstudied is race itself. It is work by those who have done this i.e. Gravlee and others that has brought to the forefront the

realization that simply assuming sharedness is not enough (Gravlee & Sweet, 2008). If it is a singularly defined category, then what are the cohesive factors that make race salient to health? Some criticize the use of modeling techniques such as those used in social determinants studies as being reductionist, but humanistic approaches have been criticized as lacking empirical grounding and repeatability. Reconciling the differences between these approaches could open a pathway for contextualizing health behaviors within more nuanced lived experiences of race and health.

For example, Black feminist studies have suggested that elevations in stress reflect nuances in experience that, if examined with an eye towards their impact on health outcomes, could be powerfully informative for the public health community. Issues such as carrying the shame produced from public discourse on the Black female body that condemns (Harris-Perry, 2011), hyper sexualizes (Collins, 2005), and mistrusts Black women may negatively impact the body going into motherhood. Private responses to public discourses create tensions between practitioners and patients, which I discus in chapter 7, and the cost of "strength" that becomes a necessary response, or way of coping are ways in which race can be physically internalized. All of these nuanced factors are central to understanding the complexities of race because they are the context in which the biological stress is produced.

To address this tension, I utilized a mixed methods approach to testing whether race can predict differences in cultural competence. Beginning with a semi-structured free-listing on what is important for a good and healthy pregnancy, we took the resultant consensus measure and asked women the degree to which they were actually able to enact what they generally agreed was important to do during their pregnancy. We then

gathered their responses, and entered them into regression models to evaluate whether race and/or class were predictive of competence above other environmental contexts known to impact the pregnancy health environment. We drew a sample of women in Atlanta, Georgia. These women generally agreed upon a shared model of what constitutes a good and healthy pregnancy (see Chapter 4). The work presented here extends into the question of cultural competence.

Tension 2: Race as Culture versus Blackness as a Part of American Culture

Disparate representations and experiences of Blackness are often lumped together when race and health outcomes are discussed, although health outcomes, including preterm birth, have been found to differ by categories of Blackness i.e. age, skin color, socioeconomic status(Silveira, et al., 2010). Such practices presume a concrete basis in objective reality fixedness without explicitly referring to one. The Buffering hypothesis, for example, states that non-dominant minorities engage in unhealthy behaviors to buffer the increased stress exposures they experience (Cohen & Wills, 1985). Social resistance theory suggests that unhealthy behaviors by those who feel most discriminated against are performed as an act of resistance against majority populations (Factor, Williams, & Kawachi, 2013). The cumulative life stress perspective encompasses these two behavioral coping-focused theories and adds a time dimension. Over the course of a life, the negative effects of stress, whether originating from metabolic (such as nutrition), emotional, or behavioral sources, can weather the body and increase one's susceptibility to disease and health complications (Geronimus, 1994) including reproductive health complications (Love, David, Rankin, & Collins, 2010). The experience of race is assumed to be one of elevated stress levels because of a dissonance between an

individual's needs, and her ability to negotiate in the world unable to meet those needs. The direct impact of this dissonance is negative health outcomes.

Wacquant's work is an example of nuanced flexibility that walks the reader through how one type of social inequity can create negative patterns of stress exposure by analyzing a ghetto culture through Bourdieu's generalized theory of capital (Bourdieu, 1977). According to Bourdieu, systems of economic, cultural and social capital operate within an individual's social arena, or field. The capital is specific to a given social sphere, and one's position within that sphere is determined by the amount of capital one has acquired. Wacquant has argued that "these different forms of capital can affirm ties that are binding and locally constructive, but they might be incompatible with links to external capital, and thus destructive in attaining a level of upward mobility that would remove one from the negatives of living in the ghetto" (Wacquant, 1998, p. 1243)**.** Black marginalization in ghetto populations is just one form of the Black experience that might be culturally cohesive beyond that of the American experience. The racism here is the historical contexts driving endemic poverty within a small but disproportionately significant subgroup of Black Americans.

Geronimus uses the lens social epidemiology to offer another example of how low income, urban ways of living can promote "cultures of poverty" (Geronimus, Bound, & Waidmann, 1999). This inequity pathway is powerful, but not inherent to being Black or to being poor and Black. This is more about the adaptive responses to the context of endemic poverty coupled with structural realities created by a racist system. One direct mitigating condition of this scenario is increased financial stability. Financial stability in multiple generations is another structural consideration that is protective against negative

reproductive health risk (Collins, Rankin, & David, 2011). With respect to race, what is important both in Wacquant's and Geronimus' works are that they illustrate how environments which are the product of social inequity act as a constraint on individual patterns of behaviors and beliefs. Both Geronimus and Wacquant present well-developed examples of understanding racial differences, one in structural context, and the other in health outcomes. But, what do these analyses mean for Black men and women who are not living in ghettos, because both authors studied populations in ghetto environments? This assumption seems harmless in the above discourses because the goals of those discourses lean towards understanding for the sake of improved health and decreased disparity.

Furthermore, such marginalization becomes important to health when we consider that neighborhood inequity, and many other forms of structural inequities are linked to poor reproductive health outcomes (Nkansah-Amankra, Dhawain, Hussey, & Luchok, 2010; Mendez, et al., 2013; Hogan, et al., 2013; Dunlop, Dretler, Badal, & Logue, 2013). Within these conditions of inequity, there is also the nuance of social and emotional support mediation that often mitigates negative environmental factors (Zachariah, 2009).

The presence of this void becomes a problem particularly when training practitioners to address disparities. This becomes an important point as medical educators are calling for more inclusion of disparities information into medical school education (Awasagba et al., 2013). It means we need to address what race means, and the assumptions that are carried, instead of allowing this void in contextual understanding to persist. For example, when race and culture, within medical education, are engaged through the lens of cultural competency, what race means really becomes confusing.

Race is often used within the context of cultural competence (Kleinman & Benson, 2006), but doing this assumes that race implies a shared culture. This means that if there is racial bias within reproductive care, then what is being assumed as the sharedness in the shared culture of race might really be stereotypical or biased assumptions about what the culture of race is (Hunt et al., 2013).

According to Hunt and colleagues (2013), practitioner bias within the clinical setting assumed obesity, high blood pressure and poor body image were just "cultural things" among Black women that was not really something the doctor could influence. Hunt and colleagues further used direct quotes of doctor bias to illustrate how the use of race by clinicians actually encourages, and preserves the misapprehension of inherent racial difference. Going back to the feminist literature, there are Black women who fit this stereotypical profile, but this describes one type of Black woman, not all Black women. In *Illness as Metaphor,* Sontag (2001) criticizes the stigmatization of disease and illness through the mystification of punitive metaphors. Race, from this perspective, becomes a punitive metaphor for poor health and unfavorable living conditions.

A fixed view of Blackness reinforces stereotypes regarding both race and gender; and, there is a missed opportunity here. Again, understanding reproductive health in the context of race, separate from ethnicity, gives us a system of understanding how structural inequities can have lasting impacts, and become integrated into individual health outcomes because of the social nature of reproduction. This level of understanding requires that a socially reflective view be engaged.

In an effort to address this, we first looked at traditional categories of race collected in traditional ways used by the medical community, hospital chart abstractions

of self-report of race. A chart abstraction is record of the entire health encounter the patient has had in the hospital. Included in this are all demographic details such as race and insurance status. Using both qualitative and quantitative analyses, I attempt to clarify what is happening at the intersection of expectation and reality. What is it within this space that continues to make race so salient? My focus is on this relevance within the context of reproductive health behaviors because pregnancy is a rich indicator of social experience. Sex lives, partner choices, family contexts, pregnancy care choices, and early childhood experiences all contribute to reproductive health as women experience (Peacock, Inhorn, Mulling . . . etc.). Much of this environment is defined by the relationships involved in the pregnancy itself. There are known resilient racial disparities in pre-term birth outcomes. Pre-term birth is also associated with demographic factors of age and education level; behavioral factors of exercise level, smoking, and if the pregnancy was planned; and physical factors of obesity and delivery type. We gathered information on all of these aspects of the pregnancy context.

When race is conflated with culture without support or understanding, but infused with punitive associations, then stereotypes about how "racial culture" is defined can become the guiding principles of cultural competency. In this case, cultural competency is defined as a medical practitioner's knowledge of a culture's behaviors and beliefs. Reproductive health disparities have persisted amidst fluctuating social meanings and experiences of race. Race cannot be treated as simple and assumed. From the civil rights era of litigation to the "post-race" era of political division, reproductive health disparities by racial category have remained consistent, even when the meaning and experience of race has not (Collins, 2005). This is not a call for a color-blind exclusion of race within

the context of reproductive health. To do that would be to ignore the realities prevailing within our society. What we are calling for is a more substantive engagement with, and examination of what race means within the context of health outcomes. We suggest using an integrated approach (qualitative/quantitative) to better contextualize the lived experiences supporting the observed outcomes. If disparities persist amid fluctuating meanings of race, then the socially produced outcomes that remain might be telling us something about the relationship between health and social production, but the generalized assumptions that race and added burden measured as cultural competence are synonymous, in the absence of empirical questioning, or in the absence of a more nuanced understanding, can result in a skewed use of race in applied contexts.

The Study

Influenced by Dressler's (2005) structural-constructivist paradigm of understanding racial health disparities, we attempt to address both of the above tensions by using cultural competence measures derived from cultural consensus modeling to understand how race and/or class influences a woman's ability to engage in the healthy behaviors that she thinks are most important for a good and healthy pregnancy. Race-as-risk-factor is driven by an assumption that Blackness is cohesive enough to imply some sort of sharing beyond what is experienced by the population as a whole. Previously, in Chapter 4, we found that race was not meaningful as a variable of assumed cohesion distinct from the entire sample, when examining the domain of what is important for a good and healthy pregnancy. When taking the difference of the within group average competency score and the between group average competency score, I calculated the proportion of unique response by the difference groups to be about 0.005. This is too

small to signify two distinctly different cultural models. Next, we turn to examining patterns of cultural competence.

Women were recruited into the study one to two days after giving birth, based on age, race, and payer information (Medicaid versus private insurance). See publication 1 for exclusion criteria. There were two populations of women involved in this study. Four demographic categories were used: Black on Medicaid (BM), Black with Private insurance (BP), White on Medicaid (WM), and White on Private insurance (WP). The Phase 1 population of women included 80 women (20 Black Medicaid, 20 Black Private insurance, 20 White Medicaid, and 20 White private insurance). Phase 1 women engaged in a semi-structured free listing interview to determine the domain items included within the domain of healthy pregnancy beliefs. The generated items that capture women's beliefs about pregnancy resulted in a 33-item questionnaire. We then narrowed the items down to 15 to remove repetitiveness of the questions in an effort to decrease participant's burden. In Phase 2 of this study, another set of 80 women sampled in the same way were asked if they agreed that the items listed were important, to rank their level of importance, to tell us if they were able to enact the items listed as important, and the degree to which they were able to enact these items.

The results of the subjective and objective questionnaires administered to the Phase 2 sample of women were compared item-by-item to develop a measure of competence for each individual woman. We refer to this as the measure of cultural competence, which was calculated by taking the 15 items on the objective behaviors questionnaire and multiplying each individually by the subjective consensus value from the answer key for each respondent. We defined the average of these cultural competence

responses as the measure of average cultural competence. The average value was included in a regression analysis as the dependent variable using SPSS. We also did this individually for each of the 15 items that emerged as a primary component of cultural domain of pregnancy health. Finally, we asked women from Phase 2 to list 25 people involved in their pregnancy, and the degree to which they were involved, in order to assess if the make-up of one's network influenced one's level of pregnancy competence. This is a standard practice in networking analysis studies (Marin, 2004). The network scale was 1-11. A score of 1 meant that a person was a very important part of a woman's ability to stay healthy during the pregnancy. An 11 meant that person was not involved in the woman's pregnancy health at all.

Many anthropologists have discussed the social nature of pregnancy, and how the quality of the social environment impacts the pregnancy experiences in many diverse ways (Davis-Floyd, Scheper-Hughes, Peacock etc. . .). From such diversity, we chose to focus on close relationships, and asked women to describe the quality and level of involvement of maternal, paternal, partner, and community relationships during pregnancy. We also asked them to describe the level of involvement that their close family members had in the pregnancy itself. These data were analyzed qualitatively using MAXQDA+ and quantitatively using SPSS and UCINET. Finally, stepwise regression, a semi-automated process of building a model by systematically adding variables based on the *t*-statistics of their estimated coefficients, was used to assess the strength of associations amidst the large number of variables in this set. The entry cut off for the stepwise regression analysis was $p = 0.09$, and the stay cut off was $p = 0.05$.

Race, Class and Barriers to Pregnancy Health

This study addresses the following questions: Does race predict a woman's ability to do what she believes is important for a good and healthy pregnancy, and is the cultural competence of pregnancy health lower for Black women? Descriptively, race was not the most significant factor in the behavioral, physical, relationship, or childhood environments impacting pregnancy. These categories are described in table 5.1. Analysis of the consistency of demographic trends between the Phase 1 and Phase 2 samples revealed many similarities suggesting that recruitment samples represented the same sample (Table 5.2). Women on Medicaid, irrespective of race, were more likely to have more children in the home (chi-square p-value = 0.028), exercised less going into pregnancy (chi-square p-value = 0.021), had more negative indicators of childhood competence (main care takers in childhood chi-square p-value = 0.001), cared for parents in early childhood (chi-square p-value = 0.004), and had a father who was jailed in early childhood (chi-square p-value = 0.000) (Table 5.2). We observed a significant difference by race in the proportion of women who had vaginal deliveries, but this trend was not consistent between the two samples. Nationally, Black women tend to have higher rates of C-sections (Getahun et al., 2009). I included a number of data tables in this chapter for the sake of transparency, but there is far too much data in the tables than can be discussed in this section.

My goal is to highlight the main findings here. In line with this, I will go briefly through the findings in Tables 5.3 for the sake of full disclosure, but please note that this is not of primary importance in this work. Table 5.3 is a comparison of how categories within the pregnancy belief domain were prioritized. The main finding from this table is

that there were no significant differences by race and class in how women prioritized the items within the domain. Table 5.4 is the regression analysis results comparing average cultural competence scores with race/class categories. Here, I regressed cultural competency score by race/class categories to see if race or class predicted level of competency. What I discovered was that being a Black woman with Private insurance was associated with a higher average cultural competence score ($\beta = 0.393$, OR = 1.38, p-value = 0.039).

When race was included in a stepwise regression procedure with the other measures of environmental context, both race and class fell out every time (Tables 5.5-5.12). Overall, average cultural competence was associated with age between 30-35 (OR = 0.628, p-value = 0.007), pre-pregnancy obesity (OR = 0.626, p-value = 0.008), having a good relationship with her mother (OR = 1.68, p-value = 0.02), and feeling connected to one's community (OR = 1.69, p-value = 0.003). This means that the cultural competence of women, in this sample, who were obese going into pregnancy had lower average competence levels than non-obese women's competence scores. Women who were older, in this sample, had lower average competence than women who were younger (18-29 vs. 30-35). Women who had good relationships with their mothers and women who felt connected with their neighborhood had higher average competence scores (Table 5.5).

One of the limitations of the stepwise regression analysis is the potential for multi-colinearity. This simply means the independent variables might be correlated. If two independent variables are correlated then one might enter but block the inclusion of the correlated variable into the model in subsequent steps (Kleinbaum & Klein, 2010). None of the context factors in the stepwise regression were associated with race. The

mother having a bad relationship with her father was associated with her partner ever being jailed ((β = 1.031, p-value = 0.035). This was also associated with having more than one child in the home (β = 1.312, p-value = 0.01). When interpreting the results of the stepwise analysis, keep in mind that one of the variables "baby's father ever jailed, "more than one child in the home," or mother having a bad relationship with her father, might cause the other 2 to be omitted from the final grouping.

These findings suggest that what women are able to do during pregnancy is most closely aligned with the quality of the close relationships around them. Race alone is not significant in any analysis that includes context factors. Looking across all measures of cultural competence, the factors that most consistently are present as significant with increased competence were lower age, feeling connected with community, positive relationship with one's mother, and not being obese going into pregnancy. In the following section, we will discuss more qualitatively the measures that were directly associated with overall cultural competence.

Feeling connected with community. Peacock (2001), in her ethnic comparisons on the social nature of pregnancy, stated that "within any culture, some set of optimal conditions for reproduction exists that carries an element of social approval and support for the pregnancy among the important members of a woman's social network" (p.114). Reproductive health is particularly interesting because it is not a product of illness, but of social conditions and engagement. Conditions of conception and birth occurring outside what is "normal" or acceptable impact social approval and support for the pregnancy and birth resulting in longer denial that one is even pregnant, delay in seeking information, ignorance of signs of pregnancy distress, or decreased ability to cope with psychological

distresses associated with the pregnancy (Dunne, 2012). Social networks are very important in influencing both emotional and physical pregnancy health (Wakeel, Witt, Wisk, Lu, & Chao, 2013). Hence, it is not surprising that a woman's ability to achieve her health priorities is associated with feeling connected to her immediate social environment.

Maternal Relationship. We found that when a woman's mother was involved in the pregnancy, and the relationship was described as positive, then average cultural competence was higher; specifically on items regarding the ability to meet her expectations of making appointments, getting rest, and daily task support. Women with positive maternal relationships also tended to have more positive partner relationships. Why might this be? When the relationship with the pregnant woman's mother was described positively, and the mother was very involved with the pregnancy, two things seemed to be happening. The pregnant woman received a lot of emotional support characterized by phrases such as "very close, we talk all the time," "she is like my best friend," and "very strong and supportive" (Table 5.13), along with practical support phrases such as "she helps me out a lot" and "I don't know what I would do without her. She is always available." The pregnant woman's mother acts as a source of both emotional and practical support.

Reproductive anthropologists argue that reproduction is inherently socially embedded, and the experience is a product of the quality and nature of that social environment. What does this mean in the context of race and class? It means that when we study reproduction, we must not remove the birth outcome from that social context in which reproduction occurs. When a woman is pregnant, there are basic daily needs that

have to be taken care of as the pregnancy progresses, and physical limitations increase. Having one's mother around is one way to get these needs met. The emotional support piece is a product of longer-term interactions that have created a positive foundation for the relationship. Outside of pregnancy, the maternal role has been associated with a number of pregnancy-related behaviors. An early mother-daughter relationship characterized as lacking in affection is negatively associated with later management of pregnancy health (Vedova, Ducceschi, Cesana, & Imbasciati, 2011). Maternal "connection" in general is associated with decreased risk-taking behavior during adolescence including sexual risk-taking behaviors. This is relevant because sexual risk-taking behaviors have an impact on pregnancy, and the environment in which that pregnancy occurs (Briggs et al., 2010).

Pregnancies resulting from risk-taking behaviors come with the potential for being unplanned, increased chances of STD, decreased chances of partner support, increased risk of financial instability, and a number of other factors that impact both pregnancy outcomes and pregnancy environments on many levels Donenberg et al., 2011; Berger et al., 2011; Hutchinson et al., 2003; Biggs et al., 2010). From conception to pregnancy and birth, the woman at the center of the process is engaging the environment immediately around her, and the environment in which she learned her response patterns early in life.

Pre-Pregnancy Obesity and Age

This is unclear why obesity or age would be associated with one's ability to engage the model of health behaviors one believes in. These are areas where more work is needed to make any speculations about causal linkages.

Relationships, Health Beliefs, and Health Behaviors

Our observations elicit the possibility that factors impacting pregnancy behaviors and beliefs have much less to do with race and class than they do with relationships. Race and class conditions might impact external conditions of inequity that may or may not be working through these early relationship formations. A complex set of factors act together in the production of racial disparities (Misra, Strobino, & Trabert, 2010) that are a product of conditions of inequity, but not necessarily products of racially relevant cultural norms that are distinct and different from everybody else around them.

Reproductive health, medical and public health discourses devote inadequate attention to the importance of the reproductive health context. Based on our findings, of particular importance are the dynamics of close relationships supporting the pregnancy process. Reproductive anthropologists have been very successful at establishing that reproductive medicine is a social institution that sometimes diminishes women's agency within reproductive practice (Davis-Floyd & Sargent, 1997), and that the political dimensions that influence patterns of reproductive activity can be complex, far reaching, and political (Kligman, 1998). But some have argued that this discourse leaves insufficient space for men, children, and community (Browner, 2000). Our findings suggest that central to a woman's concept and experience of reproduction are her relationships with her parents, her partner, and her community. Reproduction has been over-restricted as a woman's topic.

Anthropologists, in particular, have acted as observers, exposers, and activists. Much of this work has come in response to false assumptions surrounding reproduction and reproductive acts. Rapp and Ginsburg's (1995) call "to begin assessing the ways in

which women's health is politicized, and to study women's health activism and resistance" spurred works that looked at the complex relationships between various power dynamics (p. 363). This idea of power in the context of reproductive choices has had a major impact in the field of reproductive anthropology. But the absence of male voices, as a result of both the feminist engagement and the essentialization of reproduction as defining women's health, has constructed reproduction as a topic for women, by women, and about women. This is not to criticize a field that attempts to counter social assumptions, but as the field becomes more cohesive and prolific (Inhorn, 2006), it must also become more complete.

Cultural models of health drive health outcomes because they define the boundaries in which health behaviors can be enacted. The chapter 4 analysis and discussion offer examples of this. Understanding a cultural model is not just about defining them, but also about understanding individual levels of conformity to, or ability to, enact models. This conformity is referred to as one's ability to achieve consonance with the consensus driven model of health. The discussion around consonance is often focused on one's ability/or lack of ability to achieve consonance, and an associated health outcome such as high blood pressure. What has been left out in this cultural consensus, competence and blood pressure discourse is what might be happening in the gap between competence and physiological outcomes. In minding this gap, we are trying to look into the space between health outcome and ability to enact a model. Thus, we ask if the negative resonance of this gap is more present for Black women than for White women. From the perspective of reproductive health, this is not the case. Rather, one's ability to achieve a cultural model has to do with the close relationships one is surrounded by

irrespective of the race or class category one belongs to. It is relationships that fill this space, and protect individuals from the burden of not meeting their own expectations of health.

What is presented here are linkage concepts. These observations are limited due to the small sample size. Further empiric studies are needed to provide evidence that a cultural system of belief makes a difference in the embodiment of reproductive risk. This will require a large enough sample to compare reproductive health outcomes among women with different cultural systems of belief, and competencies in negotiating their particular systems. I argue that in this domain of pregnancy, public health and medical studies need to articulate more complex associations driving health outcomes, and need to better enhance efficacy of research and practice using findings from such studies to address disparities in outcomes and experiences during pregnancy.

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Figures and Tables

Table 5.1. Description of Context Categories. Below are the definitions of each context factor.

Context Factors		Dichotomized Category Definition
Demographic	Age high	Women older the 29 equal 1 and women young equal 0.
	Edlow	Women who had a high school education or lower equal 1 and women with education above high school equal 0.
	+1 child in home	This variable equals 1 for women who have at least one child in the home at the time of this birth, and 0 if this is their only child.
Behavioral	Exercise BF	Women who exercised before pregnancy equal 1, and women who did not equal 0.
	Smoke_before	Women who smoked before pregnancy equals 1 and women who did not equal 0.
	Smoke_D	Women who smoked during pregnancy equals 1 and women who did not equals 0.
	Planned	Women for whom this pregnancy was planned from the beginning equals 1 and those who did not plan this pregnancy equals 0.
	B_fatherJail	If the father of the baby was ever jailed then a 1 was given, and if never jailed then a 0 was given.
Physical	V_birth	Women who had a vaginal birth equals 1 and those who had a C-section have a 0.
	Pre_obese	Women who were obese going into pregnancy equal 1 and women who were not equal 0.
Relationship	Mother_good	Women who describe their relationship with their father as positive equals 1, and if negative then it equals 0.
	Father_good	Women who describe their relationship with their partner as positive equals 1, and if negative then it equals 0.
	Partner_good	Women who describe their relationship with their mother as positive equals 1, and if negative then it equals 0.
Childhood	Main Care Taker	Women who felt like they were the main caretakers in their household during childhood are given a 1 and 0 if they did not.
	C_Sibling	Women who felt like they took care of their siblings in their household during childhood are given a 1 and 0 if they did not.
	C_parent	Women who felt like they had to take parents in their household during childhood are given a 1 and 0 if they did not.
	M_fatherJail	Women whose fathers have been jailed equal 1 and never jailed equals 0.

Table 5.2: Proportions. These are the proportions of women in each race/class category who responded "yes" to each category.

	Context Factors	Proportions				Chi square p-value	Chi-square p-value	Comparison with Phase 1 and phase 2 populations
		BM	BP	WP	WM			
Demographic	Age high	0.25	0.35	0.70	0.32	0.018	-------	In both groups women with private insurance tended to be older
	Education L	0.55	0.2	0.05	0.58	0.000	--------	In both groups women with private insurance tended to be more educated
	+1 child in home	0.60	0.55	0.4	0.74	0.202	Sig different by class only 0.028	In both groups BP and WM tended to have more children in the home.
Behavioral	Exercise BF	0.65	0.80	0.85	0.53	0.105	Sig by class only 0.021	In both groups women with private insurance tended to exercise more going into pregnancy
	Smoke BF	0.20	0.15	0.05	0.47	0.010	----------	In both groups WM had higher rates of smoking before pregnancy than any other group
	Smoke D	0.1	0.1	0	0.21	0.191	----------	In both groups WM had higher rates of smoking during pregnancy than any other group
	Planned	0.2	0.3	0.85	0.42	0.000	----------	Not included in Phase 1 descriptive table
	B_father Jail	0.6	0.1	0	0.42	0.000	----------	In both groups women with private insurance had few rates of the baby's father ever being jailed.
Physical	V_birth	0.5	0.5	0.65	0.68	0.512	Sig by race only 0.054	WM consistently had the highest rates of vaginal births between both phases. Other three groups not consistent between phase 1 and phase 2.
	Pre_obese	0.35	0.3	0.25	0.21	0.784	----------	
Relationship	Mother_ good	0.85	100	0.95	0.58	0.001	----------	WM has much lower rates of positive relationships with mother between both phases.
	Father_ good	0.4	0.45	0.85	0.37	0.007	----------	WM has much lower rates of positive relationships with father between both phases. WP has higher rates of positive

								relationship with father between both phases.
	Partner_ good	0.80	0.95	0.90	0.74	0.239	----------	WM has lower rates of positive relationships with partner between both phases, but this difference was not significant in the phase 2 population.
Childhood	Main Care Taker	0.35	0.15	0	0.42	0.006	Sig by class 0.001	Not included in Phase 1 descriptive table
	C_Sibling	0.6	0.35	0.45	0.58	0.353	----------	Not included in Phase 1 descriptive table
	C_parent	0.25	0.15	0.1	0.55	0.003	Sig by class 0.004	Not included in Phase 1 descriptive table
	M_father Jail	0.30	0.2	0	0.21	0.086	Sig by class only 0.000	Not consistent by race or class between groups

Table 5.3: Proportion Responding "Important". In this table we report the percent of women in each category who reported the item among the top 5 most important for pregnancy. We also reported the average score women in that category gave the item. The scale was 1-7 with 1 being the most important and 7 being not important at all.

	BM		BP		WM		WP		
	% in top 5	Avg Rank	% in top 5	Avg Rank	% in top 5	Avg Rank	% in top 5	Avg Rank	p-value chi-square For %
Appointment	0.905	2.316	0.727	3.250	0.750	2.333	0.700	2.071	0.225
Diet	0.571	3.250	0.682	2.933	0.750	3.000	0.550	2.545	0.640
Partner	0.571	2.333	0.364	3.500	0.500	5.000	0.750	3.733	0.041
Mature	0.333	1.571	0.682	3.800	0.750	3.000	0.800	2.500	0.006
Stress	0.476	1.900	0.545	2.667	0.5	2.500	0.500	3.900	0.899
Choices	0.143	5.000	0.500	2.909	0.250	2.000	0.350	3.143	0.045
Rest	0.238	3.200	0.318	4.143	0.000	7.000	0.350	4.143	0.721
Support	0.190	4.250	0.318	3.571	0.750	3.667	0.450	4.889	0.203
Ready	0.143	2.333	0.364	3.500	0.500	2.500	0.150	1.077	0.141
Exercise	0.143	5.000	0.136	3.667	0.000	7.000	0.300	3.833	0.319
Nurture	0.143	2.000	0.136	4.000	0.250	5.000	0.200	4.000	0.828
Weight	0.048	2.000	0.227	4.400	0.000	7.000	0.150	4.000	0.241
Stable	0.143	6.000	0.136	2.667	0.500	5.000	0.150	1.308	0.992
Healthcare	0.143	3.667	0.227	3.000	0.000	7.000	0.000	7.000	0.084
Tasks	0.143	3.000	0.045	3.000	0.000	7.000	0.000	7.000	0.157

Table 5.4: Regression Analysis. A regression analysis was run with the independent variable as race/class category and the dependent variable as cultural competence (CB).

Dependent Variable (All)	Black (0,1) (p-value)	Private (0,1) (p-value)	BP (p-value)	BM (p-value)	WP (p-value)	WM (p-value)
Average Competence	β = 0.221 OR = 1.25 (0.186)	β = 0.262 OR = 1.30 (0.116)	β = 0.393 OR = 1.48 (0.039)	β = -0.101 OR = 1.82 (0.599)	β = -0.043 OR = 0.958 (0.826)	β = -.258 OR = 0.773 (0.186)

Stepwise regression tables

Table 5.5: Predicting level of cultural competence. Below is a list of the context factors that were significantly associated with overall cultural competence after all other factors fell out of the stepwise regression.

Predictor	β	*p-value*
Age (30-35)	-0.466	0.007
Pre-obese	-0.469	0.008
Mother_good	0.519	0.020
Feel_connected	0.523	0.003

*$p \leq .05$

Table 5.6. Qualitative Assessment of Mother's Relationship. Below are the responses women gave when describing their relationship with their mothers as (a) explicitly bad, (b) implicitly bad, or (c) good.

a.

Categories of "bad relationship"	Typical Response	Extreme of Typical	Atypical Response
Explicitly stated as bad	"Not close. We do not get along at all. We cannot live together"	"She is nuts . . . high expectations. We talk 3-4 hours every day. It is very difficult with her. I always need therapy"	"We have no relationship. I am adopted, and birth mother was a drug addict"
Passed away in childhood	"She passed away over 10 years ago"	"She died of a suicide. She was bipolar all my life"	

b.

Categories of "bad relationship"	Typical Response	Extreme of Typical	Atypical Response
Implicitly stated as bad	"Not great."	"Ours is a fine relationship. Mostly respectful. We are not together and there is a lot of tension."	"Interesting. I am unsure . . . it is a developing relationship."

c.

Categories of "good relationship"	Typical Response	Extreme of Typical	Atypical Response
Explicitly stated as good	"Good friends. We really like each other. He makes me laugh"	"Good, he is there for both boys"	"Good, he is a drama queen, Latino. Cultural differences create tensions. Difference in definition of women's roles is the biggest issue"
Stated as good with acknowledgement that it is not perfect.	"Our relationship is fine. We go through some ups and downs but we are solid"	"Good. We get along. He wants more of a relationship but I don't"	"I love him unconditionally; we have a long distance relationship. He lives in ---- and this works for us. We feel in limbo because he wants me to move there but there is still a hesitation within me"

CHAPTER 6

Integrating Biological Embedding and Social Production Theory

The Intersection of Social Production Theory and Biological Embedding

Biological Embedding is a way of biologically grounding our understanding of how social processes get under the skin and impact health. Social production theory is a way of understanding how social processes can impact an individual's biological processes. It states that biological embedding occurs within a structural context that shapes the embedding process through socially mediated constrains. Figure 6.1 is an illustration of this. Here, we see that health is produced at the intersection of individual biological processing, and the social context in which that processing occurs. In order to understand health production, we must understand processes susceptible to biological embedding mechanisms as discussed in Chapter 1, and the social structures or social contexts that can have an impact on those embedding mechanisms.

Operationalizing social production theory involves combining our understanding of targeted biological embedding processes, such as maternal care and the development of the HPA-axis, with systematic understandings of cultural realities that support the context in which embedding is occurring. For example, what are the social contexts in which maternal care behaviors are constrained or not constrained? One way of understanding this is through life-history theory and reproductive ecology.

Through the lens of life-history theory, the field of reproductive ecology has allowed us to look at the biology of reproduction not as physiologically invariant, but as physiologically responsive. Therefore, when we talk about reproductive biology in anthropology, it is really a discussion of reproductive ecology. The power of the more

integrated bio-cultural perspective, framed by social production theory and biological embedding processes, is that we have the potential to use evolutionary frameworks to understand the constraints on human behavior, and to understand how these constraints play out within the diverse social contexts that humans are embedded in. Such a theoretical foundation, on some level, has a predictive power that can be applied within the public health arena. It can be used to explain how, and when life course trajectories change by understanding long-term, life course patterns of plasticity and ecological responsiveness. It can be used to understand risk-taking behaviors and evolutionary constraints on risk in decision-making. The power here is in constructing interventions that are informed by these constraints.

For example, according to White's ethnographic work on teenage pregnancy among Black girls in inner-city New Haven, Connecticut, the decision to become pregnant is motivated by both economic uncertainty, and the material benefits of having an older boyfriend (White, 1999). How do we reconcile these accounts with Westron and Eschenbach's argument that young girls with STDs have diminished reproductive opportunities, and thus need to get pregnant quickly in order to maximize their reproductive effort (Westrom & Eschenback. 1992)? It seems that young girls in White's example are susceptible to STDs because of their economic constraints. Using a social production theory perspective, we could systematically address such questions as: Is this behavior considered risk-taking? Furthermore, what experiences indicate uncertainty? Is it possible that the strain of economic uncertainty is being communicated through negative father-daughter relationships, and is this really the cause for changes in behavior towards early pregnancy, and not the material conditions themselves?

Social production theory might also help to resolve dissonance sometimes found between evolutionary theory and cultural observations. One example of this is Wasser's perspective on age and fecundity, and Bledsoe's observation of contingent time among Gambian women. Age, in reproductive ecology, is a marker of time to the end of a women's reproductive ability (Wasser & Barach, 1983). This model is founded on the idea that in a natural fertility setting, a female will have as many offspring as the time between menarche and menopause will allow, and physical changes accompanying aging are markers of a women's reproductive value (the number of offspring she can continue to have that will survive to reproductive age). Bledsoe (2002) observed that aging is not the passage of time, but the wearing down of the body through experiences of reproduction (stillbirths, miscarriages, and live births all impact the body and such events create a cumulative wear and tear). "Gambian women calculate birth intervals in terms of their strength, the strength and viability of their last child, and the demands of family ties (and fostering those ties) with their husband and in-laws. Women do use contraceptives for short times when they are younger. Frequency of contraceptive use is higher among women who have had stillbirths or miscarriages, and this group uses them for a longer period of time. The idea here is that they are not spacing between a birth, but regaining their strength to ensure that the next pregnancy will result in a live birth.

Not only must Wasser's theory be modified in light of this finding, but reproductive ecologists must be quick to test evolutionary models about humans within human populations, and across different social contexts. This is also true of processes of biological embedding. By bringing biological embedding processed together with social production theory, we can support the systematic integration of these two perspectives on

human experience. Furthermore, these two theories can inform each other, and create a more dimensional understanding of the way health is produced.

In Chapters 4 and 5, we demonstrate that the quality of the father's relationship might impact how a woman engages in health. If this finding is repeatable and supported by further work then it might be that this process of prioritizing one's needs, such as a decreased prioritization of emotional nurturing for one's self, is a mechanism through which the maternal drive to decrease prioritization of investment in emotional nurturing for her child is working.

The marriage of these two theories is also an attempt at creating a bridge between our humanistic understanding of health, and the biological production of that health. The conditions in which biological processes are produced and the biological processes themselves, sometimes, are not linked because biological studies are critiqued as being too particularistic or reductionist in their focus on isolated processes. However, humanistic fields of study are sometimes accused of being too imprecise, not repeatable, or not generalizable enough. There becomes an ethotic divergence where the fields have difficulty communicating. Anthropologists, epidemiologists, neuroscientists, and psychiatrists have really pushed the boundaries of this divide (Dressler, Hadley, Krieger, Geronimus, McDade, etc . . .). The challenge is that methods to empirically and systematically understanding social processes are not always engaged. When this occurs, what happens is that one side of the social production paradigm becomes more problematically represented than the other.

For example, it is often theorized that race is associated with increased exposure to stress, and this might be one of the driving reasons for continued health disparities

including reproductive health. In my study, I asked women to list the major stressors that they were exposed to during pregnancy in our Phase 1 population. From that list, we identified 18 major stressors that women are exposed to during pregnancy. We then asked our Phase 2 population of women to identify which of the 18 stressors they were exposed to during pregnancy and to rank their level of exposure (1=the stressor had a large impact on their pregnancy experience, and 6=the stressor was present but had very little impact on their pregnancy experience). I then went through each context factor from Chapters 4 and 5, and individually assessed whether the stressors listed were associated with any of these factors. What I discovered was that, once again, race and class did not emerge as the most important variable related to types of stress exposure (Table 6.1).

In Table 6.1, I have listed the results of a QAP regression analysis. See Chapter 4 Methods discussion for an explanation of this analysis. In this case, the outcome variable was the correlation matrix of types of stress exposure during pregnancy. Based on a p-value cutoff of 0.05, we saw that being White with private insurance did show significant grouping, but upon closer look I realized that what was driving this grouping was age, number of children in the home, and higher education. White women on private insurance tended to be older, were having their first birth, and had achieved a higher level of education. In this case, one interpretation I could propose is that these women were likely exposed to fewer stresses related to the economic pressures of child-rearing, and it is possible that they are more able to manage the stresses they are exposed to because of the social capital they had already obtained. This is just a hypothesis, but it is also an example of understanding the complex dynamics within the racial category that is more explanatory than just identifying this group as White women on private insurance.

Table 6.2 is a list of regression analyses that includes the total number of stressors a woman was exposed to during pregnancy, as the dependent variable, and competence score as the independent variable. In general, higher stress exposure was associated with lowers levels of cultural competence (S_total: β=-0.246, p-value = 0.000). This suggests that those women who are less able to enact the cultural model they hold are likely exposed to a greater number of stressors during pregnancy.

In Table 6.3, I looked at whether, either the total amount of stressors or the type of stressor that women were exposed to related to their race/class grouping. This table suggests that race does not predict exposure to a greater number of stressors during pregnancy. In fact, Black women on private insurance were likely exposed to fewer stressors than any other group (S_total: β=-1.44, P-value=0.002). This table also suggests that we do not see consistency in stressor exposure by race or class categories. For the individual association analysis of presences and impact of stressor on pregnancy with race, I observed that being a Black woman on Medicaid was significantly associated with having a strained relationship with partner (S6:β=-0.856, p-value=0.044), but this factor was significant in not impacting the pregnancies of Black women with private insurance (S6: β= 1.019, p-value=0.016). Being a White woman with private insurance was significantly associated with struggling to balance one's pregnancy needs with other life obligations (S7: β=-1.47, p-value 0.002). Being a White woman on Medicaid was significantly associated with having exposure to a greater number of stressors (S_total: β=0.939, p-value=0.049), and the stressors that had significant impact on their pregnancies were S2 (loss of job or inability to find one), S3 (struggling to meet work and home obligations), S4 (worrying about the health of the baby), S12 (having an

unstable home life), and S17 (having a partner who is unavailable and unsupportive) (Table 6.3). Interestingly, not all of these stressors were associated with competence (see Table 6.2).

This observation brings up the point that not all types of stressor exposures impact processes that might be associated with biological embedding. In Chapter 5, we discussed that concepts of cultural understanding have been associated with biological outcomes related to HPA-axis activation such as arterial blood pressure (Dressler & Bindon, 2000). How one internalizes their ability or inability to enact behaviors that they know are important for the production of health might be relevant to understanding why individuals within the same environment have different levels of allostatic load. More needs to be researched to understand this process.

In this study, we observed that Black women were not exposed to more stressors. A woman having a good relationship with her mother (β=-1.164, OR: 0.193, p-value = 0.040) and a woman having a good relationship with her partner (β=-1.361, OR: 0.256, p-value = 0.016) were both associated with having lower levels of stress exposure (Table 6.4). There were, however, key stressors that showed up more often by race. This means that stressors associated with competence were over-represented by certain race/class categories, but the size of our sample was not large enough to draw a definitive statement about these (Table 6.5).

In Table 6.5, I refer to those stressors that are associated with competence in Table 6.2 as “key stressors” because it is possible that they have a greater impact on the production of internal stress (HPA-axis activation), because they are independently associated with competence. It is possible that it is not just the amount of various

stressors one is exposed to that impacts biological processes but the type of stressor, and the timing of the exposure of that stressor. When we talk about race and weathering, for example, as a process of the accumulation of stress due to increased *stress* exposure over the life-course, we really need to examine what particular type of *stressor* exposure we are referring to.

Therefore, I also looked at factors that influenced the number of stressors a woman might be exposed to. The only factors that were significantly associated with the amount of stressor exposure were whether a woman had a good relationship with her mother (β=-1.164, p-value=0.04), and whether the woman had a good relationship with her partner (β=-1.36, p-value= 0.016) (Table 6.4). In these examples, a positive relationship was associated with fewer stressors. Once again, relationships proved to be the most important factor in this situation. Social production theory proposes that patterns of difference are based on the social impact a racial category might be having on an individual, but it is not race that defines the individual. It is the individual within the context of these dynamics of inequity associated with race that is at work. The purpose here is to understand the nuanced dynamics of inequity at the intersection of social context and biological activity.

Relevance Beyond this Work

The works presented and cited in this dissertation support the relationships illustrated in Figure 6.1. What I am showing here is that social contexts, in this case racially mediated social contexts, and health outcomes begin with understanding the social environment into which a body is embedded. Social environments, individual perceptions that are produced from and exist within those environments, health behaviors

that are the product of environment and individual perception, and ultimately health outcomes are the component parts of health production. I focus on reproductive health production, but such a paradigm of understanding could be applied to other health outcomes as well.

In Figure 6.2, I integrated my findings into this social production theory model to illustrate that maternal health is impacted by the social environment. This environment is framed by disparities in generational poverty (it is proportionally higher among Black women than White women (Williams, 1999), neighborhood levels of racial segregation are associated with giving birth to lower birth weight children (Naeye, et al., 1971), and one tends to find more majority-Black neighborhoods, as opposed to majority white neighborhoods (Grady, S. C., 2006). These are areas where you tend to find higher rates of food deserts (Zenk, et al., 2005) and greater limitations in access to high quality foods (Larson, et al., 2009).

On the other side of this production paradigm are risk behaviors that also have origins in historical disadvantage (Figure 6.2). For example, feelings of racial prejudice in a mother are associated with low birth-weight babies (Collins, Davit et al. 2000), and these feelings influence a women's trust in health care providers, which will in turn influence her future health care seeking behaviors (Dale, Polvka et al. 2010).

Figure 6.3 illustrates that internal processes are at work within these social environments involve such things as emotional support (how it is prioritized, and thus sought), medical adherence (whether one places high value on doctor's advice), and personal health (how one prioritized self-nurturing behaviors). The research presented suggests that cultural models of pregnancy might play a role in the production of

individual perceptions. This is just one layer amidst multiple layers of experiences that can impact reproductive health. Again, Figure 6.4 illustrates that relationships matter. What is potentially powerful in this work is the extent to which relationships might matter. Figure 6.5 illustrates that if these findings hold then focusing on relationships when trying to intervene on poor reproductive health outcomes we might impact the child being born, the development of that child, and possibly the reproductive health outcomes that child might experience during their adulthood. For example, deficiencies in social support are associated with birth outcomes such as fetal growth and birth weight (Feldman et al., 2000). Maternal social support is also associated with early infant care behaviors (Warren, 2005), childhood outcomes (Erickson, Sroufe & Egeland, 1985), and adolescent well-being (Taylor & Roberts, 1995).

There are many studies to support the idea that maternal stress impacts the baby, the child, and the adolescent health outcomes. In Figure 6.5, I am focusing on the individual to illustrate that the embedded biology of the mother is closely linked to the biology of the child. During fetal development we see a physical link, as illustrated in Figure 6.5 by the overlap of the circle. As a child develops, the physical bond gives way to an emotional bond that continues to effect the child's health outcomes. Social production theory asks: What are the contexts in which such processes are differentially activated due to social condition, context, or exposure? There are many examples of how such as integration might be relevant.

- Maternal nutrition influences brain development (Monk, Georgieff & Osterholm, 2013). What are social constraints on maternal decision-making around nutrition

behaviors that might be influencing differential outcomes in the baby's brain development?

- Microbiotic environment in the gut and cognitive development have been linked (Collins, Surette & Bercik, 2012). There is also evidence that the microbiome that infants are exposed to via breast milk is influenced by how the milk is delivered and maternal weight status (Cabrera-Rubio et al., 2012). How might environmental exposures ranging from birthing choices to environmental cleanliness impact microbiome development, and how do cultural norms of cleanliness and dirtiness within a child's environment impact long-term patterns of cognitive development?
- Socially embedded "double-whammies." The idea here is that certain contexts of development could breed long-term deficiencies in certain biological mechanisms associated with health and cognition. For example, socioeconomic status has long been associated with rates of dyslexia (Berger, Yule & Rutter, 1975). Maternal education, time spent reading at home, and the availability of reading materials at home are important for reading development (Raz & Bryant, 1990; Thambirajah, 2010). These are also contexts where access to the interventions needed to remediate or treat these conditions such as dyslexia are limited by the high cost of the interventions (Roijen et al., 2011). The double whammy here is both the context that promotes higher rates of a given condition, and the context that suppresses treatment of that condition if it arises. What are the contexts and constraints that give rise to such double whammies?

Combining social production theory with biological embedding is really a formal way of pushing forward what many bio-cultural anthropologists have been doing for a long time; that is providing a way to understand embedded, cyclical or generational productions of health outcomes. In Figure 6.4, I am illustrating that my work points toward a focus on early relationships during pregnancy, and early parenting as a potentially powerful point of entry into breaking this cycle. In order to fully engage this perspective, the social production tool box needs to be built and expanded. This means that the tools we use to systematically engage these very dimensional associations need to be "collected," tested, revised, improved upon, and integrated into medical and biomedical education and studies.

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Figures and Tables

Table 6.1: Quadratic Assignment Procedure (QAP). QAP regression analysis was performed to examine patterns of stress exposure by context category.

Independent Variable QAP	Beta (p-value)
Current pregnancy is woman's first child	β = 0.027 (0.020)
Woman is between the ages of 30-35	β = 0.022 (0.066)
Woman is White	β = 0.027 (0.024)
Woman is on Medicaid	β = -0.013 (0.164)
Woman is Black on Medicaid	β = -0.024 (0.060)
Women is White with Private Insurance	β = 0.028 (0.033)
Woman has been educated beyond high school	β = 0.022 (0.052)

Table 6.2: Stress. This regression analysis has total number of stress exposures as the outcome variable regressed against an average competence score.

Dependent Variable (All)	Average Competence Beta (OR)	P-Value	CONSTENT	Definition of stress category
S_total	-0.246 (0.78)	0.000	5.790	TOTAL NUMBER OF STRESSORS
S1	0.329 (1.39)	0.004	3.113	FINDING HELP WITH OTHER CHILDREN
S2	0.084 (1.09)	0.111	4.59	LOSS OF JOB OR INABILITY TO FIND ONE
S3	0.071 (1.07)	0.198	4.66	MEETING WORK/HOME OBLIGATIONS
S4	0.011 (1.01)	0.789	4.989	WORRY ABOUT HEALTH OF BABY
S5	0.129 (1.14)	0.012	4.388	PERSONAL HEALTH CONCERNS
S6	0.156 (1.17)	0.002	4.232	STRAINED RELATIONSHIP WITH PARTNER
S7	0.039 (1.04)	0.387	4.854	BALANCING PREG NEEDS AND LIFE OBLIGATIONS
S8	-0.084 (0.919)	0.193	5.497	DECIDING TO LEAVE JOB/PROFESSION
S9	0.089 (1.09)	0.203	4.543	HUSBAND UNAVAILABLE DUE TO TOO MUCH WORK
S10	0.045 (1.05)	0.399	4.801	CHILDRENS SITUATION AFTER BIRTH
S11	0.015 (1.02)	0.843	4.953	FEAR OF ANOTHER CHILD IN HOME
S12	0.273 (1.31)	0.004	3.445	UNSTABLE HOME LIFE
S13	-0.045 (0.956)	0.624	5.29	PARTNER ABSENT DUE TO MILITARY
S14	0.028 (1.03)	0.763	4.872	DID NOT WANT TO BE PREGNANT
S15	0.109 (1.12)	0.305	4.398	TREATED POORLY BY HEALTH PROVIDERS
S16	0.053 (1.05)	0.398	4.746	FAMILY MEMBERS STAYING WITH YOU
S17	0.090 (1.10)	0.267	4.522	PARTNER UNAVAILABLE AND UNSUPPORTIVE
S18	-0.181 (0.834)	0.229	6.111	FATHER DOESN'T ACCEPT RESPONSIBILITY

Table 6.3: Race, Class, and Stress. This regression analysis has the race/class category as the independent variable and first total number of stress exposures as the dependent variables. The subsequent dependent variables are each individual stressor regressed against race.

Dependent Variable	BM Beta (p-value)	BP Beta (p-value)	WM Beta (p-value)	WP Beta (p-value)
S_total	-0.035 (0.942)	-1.44 (0.002)	0.939 (0.049)	0.568 (0.229)
S1	-0.047 (0.802)	0.220 (0.242)	0.217 (0.258)	-0.382 (0.040)
S2	-0.289 (0.488)	0.983 (0.017)	-1.112 (0.007)	0.381 (0.361)
S3	0.147 (0.715)	0.615 (0.123)	-0.039 (0.923)	-0.724 (0.069)
S4	0.599 (0.273)	0.064 (0.908)	-0.405 (0.468)	-0.271 (0.621)
S5	-0.369 (0.384)	0.167 (0.694)	-0.241 (0.576)	0.435 (0.304)
S6	-0.856 (0.044)	1.019 (0.016)	-0.599 (0.168)	0.416 (0.332)
S7	0.943 (0.055)	0.207 (0.677)	0.328 (0.516)	-1.47 (0.002)
S8	0.092 (0.790)	0.225 (0.512)	0.617 (0.076)	-0.913 (0.007)
S9	0.142 (0.656)	-0.193 (0.543)	0.046 (0.888)	0.008 (0.981)
S10	-0.136 (0.742)	-0.136 (0.742)	0.354 (0.399)	-0.069 (0.867)
S11	-0.210 (0.484)	0.325 (0.278)	0.098 (0.748)	-0.210 (0.484)
S12	0.254 (0.258)	0.254 (0.258)	-0.789 (0.000)	0.254 (0.258)
S13	-0.064 (0.793)	0.003 (0.989)	-0.08 (0.745)	0.137 (0.57)
S14	0.138 (0.562)	-0.264 (0.267)	-0.221 (0.361)	0.339 (0.152)
S15	-0.198 (0.343)	-0.131 (0.53)	0.20 (0.347)	0.136 (0.514)
S16	-0.108 (0.761)	0.427 (0.229)	-0.425 (0.239)	0.092 (0.796)
S17	0.055 (0.841)	0.189 (0.491)	-0.656 (0.017)	0.390 (0.153)
S18	-0.250 (0.086)	0.085 (0.564)	0.083 (0.577)	0.085 (0.564)

6=not present at all, 1=very strongly present

Table 6.4. Stress and Context. In this analysis, the outcome variable is the total number of stress exposures during pregnancy, and the independent variables were the context factors assessed. This table is a list of the independent variables that were associated with stress.

	Mother_Good	Father_Good	Partner_Good	Family In Town	Mother's Father Jailed	Baby's Father Jail
Beta	-1.164	-0.229	-1.361	-0.786	0.245	0.549
p-value	0.040	0.578	0.016	0.094	0.650	0.230

Table 6.5. Key Stressors. This table summarizes the stressors that were associated with competence at the level of the individual. Below we state which if any of them were over represented by race/class category.

	WP	WM	BP	BM
Key Stressor	S1: Finding help with other children	S12: Unstable home life	(None) Not S6: No strained relationship with partner.	S6: Strained relationship with partner.

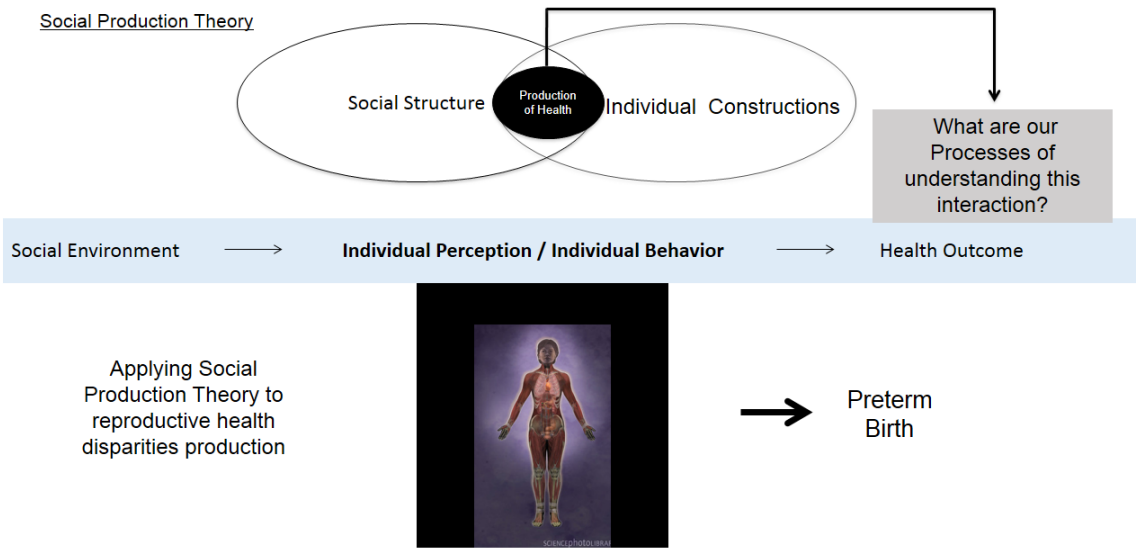

***Figure 6.1*.Social Production Theory**. At the intersection of social structure and individual construction we find the production of health. Our goal should be to continue to ask what are our processes for understanding this interaction of social inequity and individual candidate biological processes susceptible to different equitability conditions.

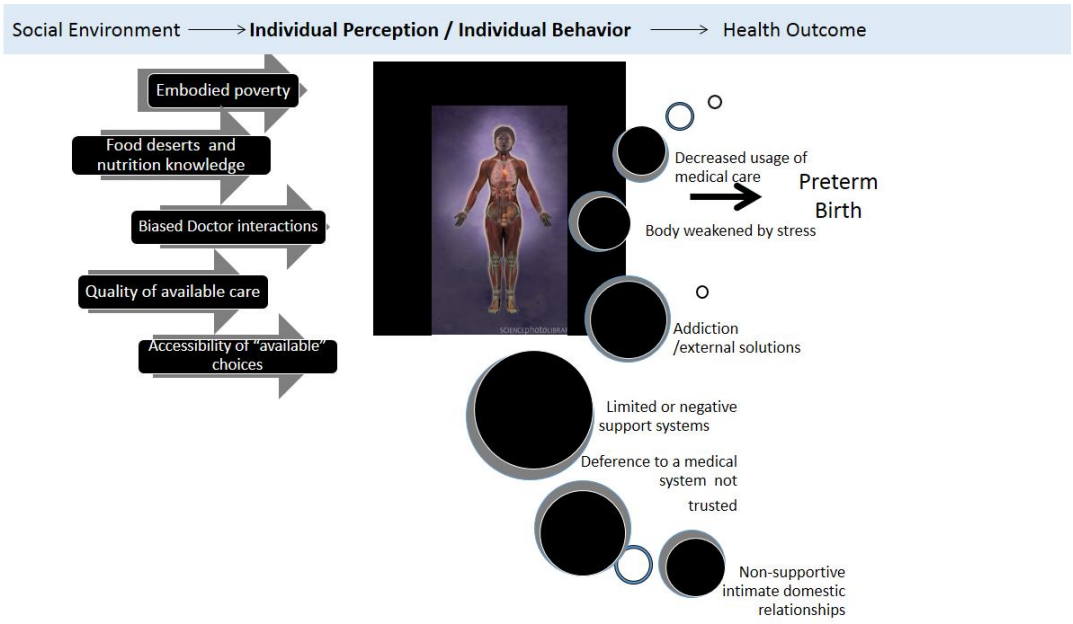

***Figure 6.2*: The Environment of Health Production**. Historical contexts have led to current day environments that contain racial disparities in both social exposure and risk behaviors. These environmental exposures contribute to disparities in health outcomes such as preterm birth.

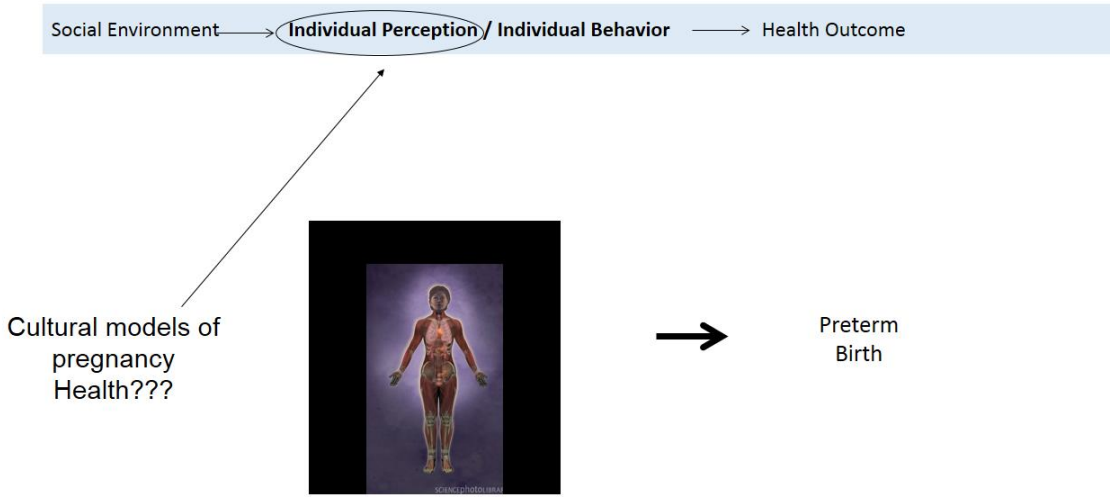

***Figure 6.3*. Individual Perceptions.** Social production theory together with biological embedding can be used to better understand how differences in individual perceptions can impact health outcomes, and in understanding the role cultural models play in influencing individual perceptions.

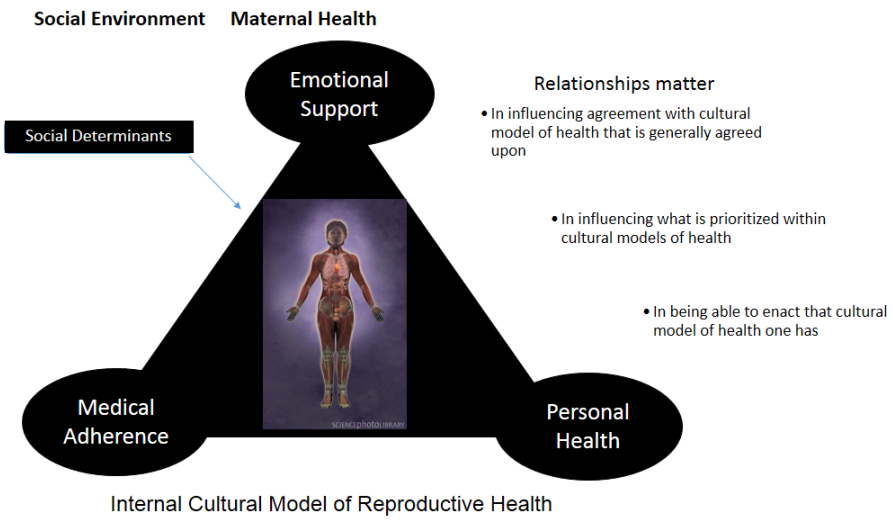

***Figure 6.4*. Relationships Matter.** One of the consistent findings throughout this dissertation is that relationships matter when discussing women's beliefs of health and their ability to act on those beliefs.

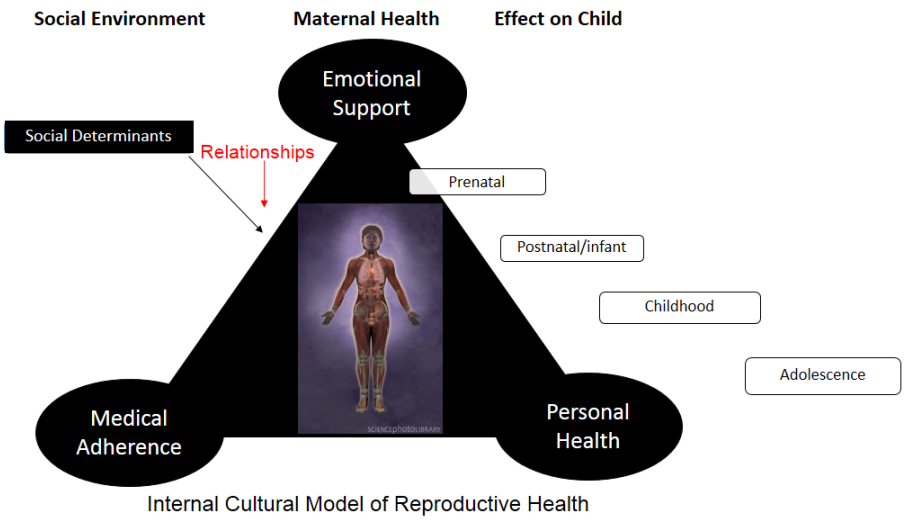

Figure 6.5. **Relationships and Effects on the Child.** Because reproduction has a potential generational effect on health production relationships offer a point through which long-term changes in patterns of health production can be influenced.

CHAPTER 7

Birthing Black Mothers: How Race Shapes Childbirth as a Rite of Passage

The birthing process is not just the "re/production" of a child, but also the act of "re/producing" a mother, and in doing so transforming a woman, both physically and culturally, into motherhood. Racial health disparities within this "re/production" process suggest that socially mediated factors disproportionately place Black women at greater risk for poorer outcomes including higher rates of pre-term birth (18.4% for Blacks versus 11.7% for Whites), higher maternal mortality (11.7 per 100,000 live births for White women compared with 39.2 per 100,000 live births for non-Hispanic Black women), greater risk for still birth (11.3 per 1,000 deaths for Blacks compared with 5.0 per 1000 for Whites), and greater risk for neonatal morbidity than their White counterparts even in the absence of other known risk factors such as smoking, drinking, poverty etc. (Bryant et al., 2010). As discussed in previous chapters, Blackness, both inherited and embodied, has become a risk factor for poorer reproductive health outcomes, however, the mechanisms of this embodiment are poorly understood. In this chapter, I take an observational and ethnographic approach to examining race and reproductive health experiences. I focus on the voices of patients and doctors, the voices of women who gave birth in the hospital and those who gave birth at home, and the voices of midwives in order to more contextually understand some of the empirical findings gathered.

Anthropologist Davis-Floyd has argued that American society has designed an obstetrical ritual where the medical system, defined by obstetricians, hospitals, and neonatal care providers, "symbolically demonstrates ownership of its product"—the

healthy baby, and the mother is the machine through which that product is produced (Davis-Floyd & Sargent, 1997). Such technocratic orientations in the ritual production of a child take agency away from the birthing mother, and makes the medical system the guardian of the birthing practice. This technocratic orientation creates power dynamics between the mother and medical provider within obstetrics care that unnecessarily limits maternal choice. Solinger, in her 2005 book, *Multiple Histories Pregnancy and Power: A Short History of Reproductive Politics in America*, said that reproductive rights are about more than just abortion choice. Reproductive rights are about the negative consequences of misguided public/private interactions. Women's private choices in pregnancy and birth are shaped by responses to public policy. Where to have a baby, how to approach prenatal care, and when and how major interventions are decided upon (such as C-sections) frame the contemporary dimensions of the reproductive rights discourse. When known medical health disparities exist that are drawn upon racial lines, but the causes are poorly understood—or not understood at all, the population considered to be at higher risk, increasingly becomes the subject of public policy, and hospital procedures that impose on choice. The public/private interactions that women in general and Black women in particular have in the birth process, create a public space within a private body, in which obstetrics care, policies, procedures, and regulations take the agency of choice away from Black mothers. Detrimentally, Black women who are in the re/productive process of becoming mothers are responding to this by negotiating choice that hinges on the fulcrum of deference versus rebellion.

I suggest that a Black woman's reliance on the obstetric rituals of birth is grounded in this deference and rebellion. Social and political limitations on birthing

choices, race-as-risk factor within obstetrics care, and needs for "safe spaces" of choice mean that women negotiate obstetrics care by rebelling from domineering forces of risk and power, or deferring to ill explained criteria and policy-driven procedures that can dramatically impact this ritual transition into motherhood, and, as such, the mother being produced.

Race, as a culturally constructed concept, has both fluidity and resilience. Representations of blackness and whiteness, who identify with these representations, and how that identity is defined, are all contested categories that fluctuate within the tides of varying social dynamics. The resilience of these categories has emerged out of economic necessity, and continues to have social and political power in America. Economically, socially, and politically, these contested identities have been explored, but despite these complex explorations, the relationship between biology and race can get commingled. Born from "folk racial categories" that are often conflated by what Dressler refers to as "ethnic group membership," these "folk" groupings have not only promoted more racialized approaches to the treatment of health, but have shifted the focus away from understanding the ecological realities that maintained the boundaries of racially defined disparities to begin with (Dressler et al., 2005). In response to this assertion by Dressler and others, early works on reproductive health disparities began to focus on racism and racism associated stress. Today, these explorations have been extended into environmental contexts that define the ecological realities in which women's health is expressed (Kramer & Hogue, 2009).

More contextualized understandings of race show that neighborhood levels of racial segregation are associated with giving birth to lower birth-weight children.

Minority populations are more likely to live in environments that contribute to greater risk of being overweight or obese, and obesity increases the risk of pre-term birth, fetal death, gestational diabetes, cesarean delivery, and fetal growth restriction for Black women (Bryant et al., 2010). Feelings of racial prejudice in a mother are associated with low birth-weight babies (Collins et al., 2000), and these feelings influence a woman's trust in health care providers, which will in turn influence her future health care seeking behaviors (Dale et al., 2010). Blackness as an object of inheritance, in this context, is not just defined by genes but also by the environments in which those genes are being expressed.

That Blackness is embodied also has significance in the context of reproductive health production. Marginalizing Black American women, their sexualities, their bodies, and their motherhood creates a uniquely dynamic experience that Rosenthal and Lobel (2011) argue culminates during pregnancy. In chapter 2 I discuss how complex and contentious histories of choice, race, and gender, within reproductive health uniquely defined the reproductive health movement for women of color during the 1970's beyond the abortions rights debates. I also discuss how defining contentions within the women's health debate resulted in residual messages, stereotypes and biased health care experiences within reproductive health that persist today. The construction of the identity of motherhood does not just begin with the reproductive process. Encounters with negative stereotypes of Black motherhood, from hyper sexuality and promiscuity (Collins, 1990), to the single young mother who diverges from the married ideal, contribute to public messages of devaluation that Black women experience before entering into the reproductive process.

In Georgia, similar social voices, that both values motherhood in general while devaluing Black mothers, contribute to the atmosphere of mixed messages that Black mothers must negotiate. In 2010, 80 billboards went up all around Georgia stating that, "Black Children are an Endangered Species." Accompanying these messages were sorrowful pictures of a young Black child. Public messages, such as this, that reprimand abortion choices paradoxically put into question Black women's abilities as mothers because they highlight the hurt child. This is part of the wider ongoing battle over control of reproduction waged against all women. The point here is that the costs and risks from the battle and its outcomes are borne differentially by race and class.

Atmospheres of persistently negative and/or ambiguous stereotypes aimed at Black women contribute to environments of high effort coping. High effort coping exists when the bridge between the individual and the stressful world that the individual inhabits is reinforced through the embodiment of that stress. It is the embodiment of the stress that directly impacts health. Sustained stress activation at the level of neuroendocrine processes that directly impact fetal growth and development, and maternal behavior are the results of this embodied stress context, and race identity frames this embodiment experience.

> Negative stereotypes about our identities hover in the air around us. When we are in situations to which these stereotypes are relevant, we understand that we could be judged or treated in terms of them. If we are invested in what we're doing, we get worried; try to disprove the stereotype or avoid confirming it. We present ourselves in counter-stereotypical ways. We avoid situations where we have to contend with this pressure . . . We think of ourselves as autonomous individuals. After all, we make choices. But we often forget that we make choices within contexts, always (Steele, 2010)

Embodied blackness, from this perspective, results in greater rates of hypertension, prolonged cumulative stress exposure before pregnancy, and more negative

experiences during pregnancy (Rosenthal & Lobel, 2011). Martin (1987), in her early work on medical metaphors of birth, said that Black women facing interactions with the medical world have a justified sense that they have more to resist, not only because of "a greater chance of having interventions and operations used on them, but the demeaning burden of racism instantiated in ways they are treated" (p. 155). Though the fluid dynamics of race, and racism, have changed dramatically since Martin's work, first published in 1987, where sterilization and forced abortion were the interventions of concern, disparities in intervention rates by race have continued to exist. One of the most dynamic reproductive health interventions is the Cesarean-section (C-section).

Black women have more C-sections than White women, even when controlling for known C-section risk factors (Menacker & Hamilton, 2010). C-sections always result in an increased hospital stay and pose higher infection risk. C-Sections can also lead to increased maternal pain, lower-quality birth experiences, future infertility, less desire to become pregnant again, respiratory problems for babies including infant and childhood asthma, reduced breast feeding, and a number of other less frequent risks that effect both the mother and the baby (Miesnik & Reale, 2007). Beyond the physical consequences of healing from surgery, some women who have had C-sections may not have felt that they had a choice, or a voice in the decision to proceed with surgery despite its increased risk factors.

A national survey called *New Mothers Speak Out*, which highlights the postpartum experiences of women during the first eighteen months after giving birth, assessed over 900 women for symptoms of post-traumatic stress disorder (PTSD) following childbirth. Using a survey based on the Diagnostic and Statistical Manual of

Mental Disorders (DSM-IV), the author concluded that 18% of all the mothers surveyed appeared to be experiencing some level of PTSD symptoms, and 9% of the mothers surveyed appeared to meet all formal criteria for PTSD. Black women and those without private health insurance were even more likely to have PTSD symptoms than other groups with private insurance and greater access to health care (Declercq et al., 2008). Cheryl Beck, a professor at the University of Connecticut School of Nursing and adviser to the study, said that "higher rates of medical interventions leading to feelings of powerlessness in a hostile environment appear to be one of the primary factors distinguishing these women" in a Washington Post article about the findings of this report (Zimmerman, 2008). Not every C-section is an unnecessary and/or traumatic event, and not all traumatic births lead to PTSD. Many interventions are medically necessary, and vitally important to the health of both the mother and the child. But many are not, as evidenced by the fact that hospitals have successfully reduced C-section rates by creating different criteria before they are performed (Miesnik & Reale, 2007).

Rates of C-sections have been reduced by applying objective criteria for the four most common indications for C-section delivery, including obligating a second opinion and creating a peer-review process before proceeding with the surgery. Additionally, abolishing financial enticement for physicians and hospitals by equalizing the reimbursement for vaginal and cesarean deliveries, and distribution to the public of physician- and hospital-specific cesarean delivery rates to increase public awareness of differences in practice (Myers & Gleicher, 1988) has been suggested. While it is not in the prevue of this paper to examine the rationale beyond C-section deliveries, what is relevant is the potential effects that the intervention may have on the re/productive

process of the Black mother.

When C-sections are unwanted and unplanned, the women experiencing them find themselves on course towards compounding limitations. In addition to not being able to hold the baby immediately upon delivery, before it is dressed, washed, and weighed, women who have undergone C-section may have reduced contact with their child during their hospital stay. More powerful and often sedating pain medications including morphine and other opiates can hinder their ability to care for their child. Children delivered via C-section are more likely to require neonatal respiratory care away from the mother, and nursing staff may takeover feeding due to slower recoveries. Mothers who did not choose C-sections may feel that their body has been invaded without fully understanding the medical reasons why. Whether these decisions are made by medical necessity, or a heightened sense of risk, the consequences for the mother may be a feeling that the medical system seems to care little and, at times, not at all, for the mother she is in the process of becoming (Childbirth Connections, 2006).

Some women choose alternatives to avoid even entering hospitals. Motivations behind the homebirth decision have not been sufficiently studied, but when I talked with a small group of 18 homebirth mothers (both Black and White) living in Atlanta, Georgia, in 2012, a few consistent themes did emerge and warrant further investigation. These included the desire for a more intimate experience of birth, the avoidance of the hospital context based on previous negative experiences, the fear of undue medical interventions, and the desire for a mode of birth that reflex experiences their mothers, grandmothers, or other women in their families may have had.

The American College of Obstetricians and Gynecologists (ACOG) does not

support homebirths, stating that choosing a homebirth means putting the birth preference of the mother over the health of the baby. Safety concerns associated with increased neonatal mortality, and care provider training (The Lancet, 2010) are confounded by the reality that lack of follow-up after the delivery, varying definitions of perinatal mortality internationally, lack of clarity regarding the identity and education of delivering providers, and the very small number of actual neonatal deaths that can used "from which to extrapolate reliable rate calculations" makes the homebirth studies very difficult to interpret (Fullerton et al., 2007).

In the background of this debate is a growing dissatisfaction with obstetrical care. Terms such as "birth rap" are emerging, and a growing number of women are feeling abused by their obstetrics experience (Elmir et al., 2010). During the courses of my work with women in the hospitals I began to wonder how mothers who gave birth to their babies at home fit into this discussion. Throughout the time that I conducted hospital interviews, I contacted three midwives and three doulas in the Atlanta area, and I asked them if they could talk with me about their experiences assisting births both inside and outside the home. They also connected me with mothers who had homebirths in the last year. I was able to interview 18 homebirth mothers at their homes in the Greater Atlanta Metropolitan area. This was an open-ended interview during which I asked them why they chose a homebirth and what that experience was like. Of the women interviewed, 70% made some reference to having to contend with not being supported by their obstetrician to the extent that obstetric prenatal care was limited, or refused when the woman disclosed that she planned to have a homebirth. The American College of Obstetricians and Gynecologists has also asserted that homebirths are made safer: "In

those circumstances in which obstetrician/gynecologists and certified nurse-midwives/certified midwives collaborate in the care of women, the quality of those practices is enhanced by a working relationship characterized by mutual respect and trust" (ACOG, 2008).

I also interviewed seven nurse-midwives and direct entry midwives working in Atlanta, Georgia. These midwives were initially found through references from mothers living in DeKalb County who used midwives during their deliveries. All of the midwives stated that integration at multiple levels of care is preferred. In fact, Georgia law requires midwives to have a back-up doctor. In an environment where maternal choices are valued, this is a reasonable policy position. But as it has been applied in Georgia, this has created inconsistent trends in continuity of available certified nurse-midwife care. According to one certified nurse midwife we talked to in Georgia, who works in one of the most active midwifery practices in Atlanta, she stated:

> Over and over again, the doctors would just decide, oh we're not going to use midwives anymore . . . One of the physicians that I've worked with said that he was just over midwife patients. They felt that midwife patients were very highly educated and asked too many questions, and didn't just kind of go along with what the doctor said 'so, why are you questioning me, I'm the doctor.' So it took a lot of energy and a lot of… like… true dialog back and forth, and they just didn't feel like they wanted to put up with it so they decided to close the midwife service.

Homebirthing will not simply go away because of a policy statement. Rather, like the consequences of illegal abortions before Roe versus Wade, they simply continue to exist within a context that might be less safe for both mother and baby because options of integrated levels of care are impossible. Furthermore, birthing choices such as using a midwife, and/or having a doula present to advocate on behalf of the birthing mother are not just about what women choose, but how women embody the knowledge that they

have the freedom and agency of choice. The trajectory of women's reproductive health, from liberation from forced sterilization to abortion rights, has had a political resonance in the distribution of power (Browner, 2000; Nelson, 2003). Browner (2000) has argued that these structural factors "shape the climates and contexts within which women's reproductive activities are situated and take place" (p. 773). In a climate where women are reprimanded for even thinking about alternatives to entering into contexts of deference, and where choice becomes interpreted as selfish rebellion even for women who feel abused by the obstetrics system, the message that resonates is one of restriction from freedom of choice within the very body she inhabits.

A countering reproductive health movement is gaining momentum in Atlanta, Georgia. Coalitions and networks of obstetricians, midwives, doulas, chiropractors, and a host of other practitioners offering pregnancy and early parenting support for new mothers are organizing to connect mothers with educational resources, and current research so that they can make informed decisions. But, are these services really available to Black mothers? And, when they are available, are Black mothers choosing them? Many of the practitioners I talked with had only a handful of Black clients, and had trouble understanding the whys beyond the assumption that Black women may prefer Black practitioners. I am suggesting here that it is not simply Black practitioners that Black women are seeking, but signs that practitioners are offering safe spaces of racial valuation, and not just other Black faces.

Parallel organizations targeting Black and minority mothers are uniting around birthing choice and reproductive freedom as well. Organizations and individual practitioners who intentionally target Black women are also intentionally presenting

counter messages to prevailing devaluations. They demonstrate that they are safe spaces in which to engage the very private and personal acts of pregnancy and birth. In her work on the history of the reproductive rights movement from the perspective of women of color, journalist Jennifer Nelson (2003) asserted that:

> Contemporary feminists need to ask themselves: Are we still fighting for the rights of the women with the least? If we don't fight from the bottom up, we betray the best sentiments of feminism – to give all women access to the freedom to make real reproductive choices for themselves and their families without coercion (p. 189).

Freedom to make real and informed reproductive choices means that Black women seek spaces that actively counter devaluations. Of the small number of Black women we talked with, who had a homebirth, every single one expressed in some way that the homebirth experience enabled her to redefine her motherhood in a way that empowered her as a Black mother, even when so many messages expressed or focused on her inabilities as a mother. Current reproductive rights movements continue to reflect some level of segregation possibly because, in the context of reproductive freedom, they ignore the Black women's need for active messages that value them, and counter devaluing messages. In order to involve a diverse population that includes Black women, the images that are used in media communications, the practitioners who are included, and the groups who are directly targeted should be actively addressed to reflect that this is a safe space of valuation for Black women specifically. Without these steps of inclusion, coalitions do not become an easy option for Black women negotiating the realities of Black motherhood.

In the absence of clear signifiers of safe spaces where Black women have reproductive choices and freedoms, the paradigm of deference and rebellion dominates.

Deference and rebellion balance on the fulcrum of agency. When agency in motherhood is defined by the obstetrical care provider, and the pregnancy event becomes, as Davis-Floyd says, a "demonstration of ownership" of the process of producing a baby (Davis-Floyd & Sargent, 1997), then mothers in general, and Black mothers in particular, must either defer to this domineering culture or rebel against it. Rebellion can consist in preparing a defensive strategy when going into the hospital, delaying interactions with the hospital, or avoiding the prenatal obstetrics care altogether.

Significantly, over what time period, where 17.8% fewer Black women receive prenatal care in the first trimester of pregnancy than White women (58.4% compared with 76.2%), with reasons that include lack of education, lack of insurance coverage, ambivalence about pregnancy, and negative perceptions of health care providers (Bryant et al., 2010). Black women who do not have prenatal care are more likely to have adverse pregnancy outcomes, and even with prenatal care, Black women dealing with asthma, connective tissue diseases, human immunodeficiency virus, genitourinary infections, and periodontal disease have worse pregnancy outcomes then Whites (Bryant et al., 2010). For Black women, finding ways of avoiding mistreatment and finding ways of having things explained to them without being demeaned within obstetrical medicine becomes a challenge that can limit prenatal care, lead to unintended and unplanned homebirth, or lead to emergency care (Milligan et al., 2002), resulting in the very deference many women are trying to avoid.

For some Black women, rebellion can come as a form of self-empowerment. In the face of their knowledge of race and racism, and mixed messages of Black motherhood, many Black women claim identities that counter public messages by going

to the Internet, forming groups, and finding midwives to help them reach the birth solutions that are right for them. But reclaiming empowered identities may render these women more susceptible to stress-induced negative health consequences when the stereotypes they are countering persist (Steele, 2010). Among poor Black women, these limitations can be compounded. Finances, transportation, childcare, and time constraints add to limitations in the type of care these women have access to, and this can also result in stalling going to the hospital or stalling care.

During my research on cultural consensus in pregnancy beliefs and behaviors, I spoke with one new Black mother, who was still in the hospital after just giving birth. She was on Medicaid, and had not received prenatal care before birth. Dim light surrounded us as she spoke softly about what was important to her for a healthy pregnancy. After sitting next to her, speaking eye to eye, for about 25 minutes, the obstetrician open the door, turned on the lights, and said, while standing over her, "Good morning. I notice that you did not have prenatal care. You know that this is dangerous for both you and the baby." The doctor then turned to the intern who had followed him into the room, and asked her about tests that needed to be performed on the baby. After about 10 minutes, the doctor turned to me and said, "Oh, are you the social worker?" "No," I replied, "I am just interviewing her for a study. Do you think maybe I should step out of the room to give you both some privacy?" "Oh, yes, of course," he replied, "This will only take a minute."

This negative experience with obstetrics care that I witnessed seemed to be reinforced the moment the doctor opened the hospital door. He immediately turned the dim lighting up to full brightness, and stood over the woman without addressing her on

her level. The doctor did not wait for the woman to respond to him after he had spoken to her. He simply turned to address the intern, affectively dismissing the mother from the examination. He then turned to me asking if I was with social services, implying that her mothering ability was in question without considering that I could have just as easily been a friend or a relative. What was missing from this doctor/patient interaction began with the fact that the doctor immediately changed the atmosphere in the room by turning the lighting up, not considering patient comfort. He did not take the time to introduce himself to his patient, ask her name, or introduce her to the intern and explain the intern's role in the examination. Most importantly, rather than asking the mother why she had not received prenatal care, he immediately placed a judgment on the fact that she had not received such care. When I came back into the exam room, I felt comfortable asking this mother why she did not have prenatal care; after the rapport we had built up during our prior conversation, she replied:

> It was difficult in the beginning because I have three other kids, and I had to take the bus. I could not find anyone close who took Medicaid, and by the time I was able to go to someone, they said I was high risk so they would not take me as a patient.

Despite these supposed and real risk factors, this mother managed to produce a healthy child. The consequences on motherhood production conversely were much more negative. The doctor did not give the patient an opportunity to speak, and he judged her behavior without seeking any context for them; she had only two options—she could either defer to his authority thus internalizing the idea that she was a bad mother, or rebel against it once she left the examination room by refusing to return. Dissolving this deference/rebellion context requires providing women in general, and Black women in particular, with real choice options that place them at the fulcrum of agency.

Furthermore, they need a safe space in which their agency can be freely expressed, rather than being regarded as a rebellion against policy and practice, as expressed in the homebirth debate. Their individual choices should be able to not only enter the debate; it should be able to inform policy and practice as well.

Reliance on the hospitals and obstetrics practices that impose technocratic means of giving birth without considering viable alternatives (nurse-midwife care, birthing centers. etc.), not only contributes to limitations on birthing choices, it denies a safe space in which motherhood can be reproduced. The environment of birth production constructed, is one in which women are forced to negotiate the domineering forces of policy-driven procedures that systematically ignore the mother being produced, because the focus is on the mother as a mechanical producer in the birthing process. Applied to Black mothers, the intractable race-as-risk factor compounds the technocratic procedural response, despite the fact that ecological factors influencing race and risk are ambiguously understood at best. Additionally, Black mothers exert increased effort in order to counter prevailing messages that devalue them as mothers, as they are being re/produced into this very identity. When the intractable race-as-risk factor is applied in this context, along with social messages that devalue Black women as mothers, the cumulative stress placed on the mother/child being re/produced is compounded, and may manifest in medical health disparities that persist between Black and White mothers. Furthermore, women who defer to obstetric authorities may place themselves at increased risk for unnecessary medical interventions, and women who rebel against the authority may place themselves and their children at increased medical risk by avoiding care altogether. These are the intersections of experience unique to constructions of Black

motherhood that can dramatically impact a Black woman's ritual transition into motherhood, and, as such, impacts the mother being produced.

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CHAPTER 8

Conclusions and Future Directions

Chapter 1: Concluding Point. In this section, I define social production theory and discussed processes of biological embedding.

Future Directions. I would like to further develop this integration by more substantively operationalizing the social production theory. This would include systematically collecting the "tools" used to make such complex connections, and more systematically developing how to make the link between social production and biological production so that its inclusion is more accessible to other disciplines.

Chapter 2: Concluding Point. The purpose of this chapter was to bring the evolution of feminist thought into the fold of reproductive health disparities. From this perspective, I presented an historical discussion about how women's health and race have been understood, and how these socially mediated understandings did not always represent minority experiences and needs. In doing this, I laid the foundation for our understanding that the presence of racial disparities in reproductive health outcomes is a reflection of the social inequities present at multiple levels of experience. Beginning with a review of the engagement with Black women's bodies, and ending with a call for the inclusion of social theory into the academic discourse on reproductive health production, my goal in this space was to focus on the social theorists that I utilized to support the social production perspective.

Future Directions. To understand this fully, Hargraves's analysis of claims need to be carried into the mid and later parts of the 20th century, and on into the present. Another interesting point of exploration would be to understand the impact that the public

health community has had in influencing the reproductive health experiences of minority women. Throughout the 1980s and onward, publications on the concerns of the relationship between social inequity and minority reproductive health disparities existed. Understanding ways in which these publications were able to directly impact women's experiences would be helpful in understanding paths towards creating translational bridges between research and application.

Influenced by Sarah Hrdy's *Mothers and Others'* discussion on the role of social context within human evolution, it would be interesting to investigate how the modern day nuclear family myth, even as it has evolved to include very diverse players from same-sex couples to interracial couples, promotes an accepted context of isolation. I would also be interested in understanding the dynamic between national level action, associated with the politics of motherhood and reproduction, and what is going on in local communities to influence how reproduction is being experienced at the local level.

Chapter 3: Concluding Points. The methods engaged during the course of this dissertation work were presented in detail.

Future Directions. I am interested in being involved in the continued development of methods that support and communicate these more nuanced connections with inequity and reproductive health.

Chapter 4: Concluding Points. I found that women have a shared cultural model of pregnancy health across race/class categories, but race might play a role in impacting how context factors influenced those models. Also, by informing medical professionals that women conceptualize health behaviors similarly across race and class categories, health care could be refocused to highlight contexts that impact healthy pregnancy

behaviors, and carefully consider assumptions being made about race when engaging a cultural competency perspective.

Future Directions. Black women who reported poor relationships with their fathers placed significantly lower value on emotional support and medical adherence, but placed higher than average value on personal health categories; while women who reported poor relationships with fathers placed higher value on emotional categories and medical adherence, but lower importance on personal health categories. I would be interested in testing whether this observation holds true in a larger, more statistically powered sample of women. I would also be interested in testing the relationship with such findings that they might have with birth outcomes such as pre-term birth and infant mortality.

Another interesting question is the level to which historical contexts influence current contexts in reproductive health. For example, does race mean something different when women are under stress? When we look at historical production, Blackness has been associated with something dirty (justifications for Jim Crow and separation so as not to encounter Black bodies). Hargraves laid out the hypocritical pattern where Black women cleaned homes, and took care of White women's children but were simultaneously viewed as unclean in their own private spaces. What does it mean that, in a stressed developmental context, Black women place higher value on personal hygiene than emotional support? Are there social messaging remnants that the stressed body is more susceptible to?

Chapter 5: Concluding Points. Neither race nor class were the overriding factors driving cultural competence, i.e., what one was able to do during pregnancy. Taking Chapters 4 and 5 together, it was striking that of all the demographic, physical, behavioral, and relationship factors examined, only relationship factors emerged as important both in what women believe, and in what women actually do during their pregnancy. Given these observations, the quality of women's relationships need to be measured in reproductive health care, and interventions to improve relationships or mitigate the impact of poor relationships should be tested prior to pregnancy and within prenatal care.

Future Directions. Again, as a follow-up to this work, I would like to test these findings in a larger sample, and test whether they link to health outcomes. I would also be interested in putting my call of the inclusion of social theory to the test. For example, do elevations in stress reflect nuances in experiences that have been laid out by Black feminist studies? Can we measure the extent to which one is carrying the shame produced from public discourse on the Black female body, and does this have an impact on reproductive health behaviors and outcomes? Also, how might these private responses to public discourse discussion write itself on the female body, and is the physiological cost of "strength," that I argue becomes a necessary response or way of coping, physiologically measureable?

I would also like to explore how the parent-child relationship might be foundational to how children construct health beliefs and behaviors from eating patterns to reproductive health beliefs.

Chapter 6: Concluding Point. This chapter was designed to discuss how biological embedding and social production theory complement each other quite well..

Future Directions. In line with the future directions stated in the introduction, I would like to contribute to more systematically integrating social production theory with biological embedding. Biological embedding has been very well articulated. Social production theory is a developing concept that needs refining. We know a lot about the candidate mechanisms for bio-embedding, but what are the candidate mechanisms for social production?

Another interesting line of questioning is the mediation life-history processes. It would be helpful to understand whether patterns of reproductive behaviors depend more on the communication of "safety" through an acquisition of emotionally safe and protective relationships than does an acquisition of material goods needed for survival. This could benefit our understanding of the mechanisms through which poverty influences health behaviors and, as a result, health outcomes.

Chapter 7: Concluding Points. This chapter was the first time I stepped back from the qualitative constraints of the data, put on my anthropological hat, and gave voice to the ethnographic experiences that the women in my study were having. This was important because it offered a substantive experiential quality that was difficult to capture when focusing on the data alone.

Future Directions. I would like to revisit the deference/rebellion paradigm in the context of claim-making to better understand how the realities of power and authoritative knowledge in medical and public health spheres can influence what women actually do within their personal spaces.