# A fate worse than death: Pregnancy weight gain and the thinness ideal

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**Abstract**

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This Master's thesis, entitled "A fate worse than death: Pregnancy weight gain and the thinness ideal," interrogates scientific discourse on pregnancy weight gain, focusing on medical literature published between 1990 and 2009. In 1990, the Institute of Medicine changed their official gestational weight gain recommendations out of fears that women were not gaining enough weight in pregnancy, resulting in low birth weights. More recently, a fervour surrounding the so-called childhood obesity epidemic has fueled much scientific debate about the possibility that women are gaining too much weight. Thus it is now being suggested that *women's* weight gain should be restricted to alleviate *society's* obesity.

Although the experts' position on pregnancy weight gain shifts over time, consistent across the dataset (1990-2009) is an understanding of women's bodies as the origin of childhood health. I argue that medical discourse on weight gain in pregnancy has historically created an embodied ideal as a requirement of motherhood and femininity; more recently this ideal has necessarily been linked not only to dominant discourses of obesity, which is seen as costly, burdensome, and undesirable, but also to dominant notions of good motherhood. Building on Foucault's genealogical approach, this thesis examines the medical/scientific discourse, and its claims to truth that have the effect of responsibilising and normalising pregnant women, both in terms of the feminine and motherhood itself.

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**Table of Contents**

**List of tables**

## Chapter I. Introduction

### Framing the discussion

One of my founding assumptions in taking up this thesis is that there has been a shift in the way we view, understand and discuss pregnancy weight gain. Informed by feminist theories of the body, especially those dealing with beauty and weight, my sociological interests have revolved around how we can understand certain bodies as ideal, and how people, especially women, strive to attain said ideal. Sociological understandings of disease and embodiment have been especially interesting for me. Since there is a breadth of research on body image and eating disorders in academia, and considering that Foucauldian understandings of eating disorders and ideal embodiment have already been taken up by scholars (cf. Bartky 1990), it became clear to me that my research would have to come at the concept of embodiment from a slightly different angle, and so, I have elected to study the medical/scientific discourse surrounding pregnancy weight gain - a contentious debate in the scientific community.

In 2007, CBC News published an article entitled "Pregnancy weight gain guidelines may be too high" (The Associated Press). In it, the AP reported on Dr. Emily Oken's new study that questioned the original pregnancy weight gain guidelines put forth by the Institute of Medicine in 1990. Oken et al.'s study entitled "Gestational weight gain and child adiposity at age 3 years" (2007), published in the *American Journal of Obstetrics and Gynecology*, argued that women's gestational weight gain had a far-reaching impact on children's weight status. Specifically, Oken et al. (2007) suggest that excessive maternal gains, "outside the recommended amount" fuel the so-called

"childhood obesity epidemic," and thus blame maternal weight gain for the growing incidence of overweight and obese children. In effect, Oken et al. argue that *women's* weight gain should be restricted to alleviate *society's* obesity; women who do not restrict weight gain (intentionally or unintentionally) are responsible for creating the societal problem of obesity. And if subsequent studies about fetal programming[1][2] of the propensity for obesity are taken into view, then women who gain excessive gestational weight are seen to program children for a lifetime of weight problems. From my perspective, the argument that women and their bodies have such a profound impact on their children and on society has even more profound implications for women's embodiment and autonomy. Since there is such intense scrutiny of women's bodies in pregnancy by the medical profession and public health officials – as evidenced by the litany of tests and standards for women to internalise – it begs the questions: are women under a form of repressive social control by institutions and professionals, are they free to choose to act as they like, or are they "empowered" to take control of health and embodiment? In any case, pregnancy is arguably a period of time in which the body undergoes significant physical changes, and the extent to which women do what they wish during pregnancy is debatable. If women cannot act as they wish – not because of

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[1] While it is not mentioned explicitly, Oken et al. (2007) article appears to be grounded in or at least dances with the theoretical framework of "fetal programming." Oken, herself, does not make any assertions on how the mechanism of "persistent programming" works (CBC News). The "fetal programming" framework is closely related to "Barker's hypothesis," or the idea of "the thrifty phenotype." "Barker's hypothesis" purports that when in utero, the fetus will pick up on the environmental cues (as given by the mother), and program itself for its future survival as an adult in that environment. Hence, when a fetus does not gain adequate weight in utero, it is programmed for a future of relative hardship. Since the conditions of its in utero environment indicated poor maternal weight gain rather than real conditions of scarcity, the programming is mismatched for the environment, and diseases such as diabetes and obesity emerge in adulthood. The Oken et al. article appears to be a part of the "fetal programming" framework, but disputes the mechanism and conditions of this programming.

[2] I worry about the possibility that a fetal programming framework will bolster pro-life or anti-choice positions.

threats to fetal livelihood, but because of the possibility to increase fetal health (which may already be very good) – then I argue that we will indeed see conflicts between maternal interests or "selfishness" and fetal interests or "rights."

Recommendations such as those prescribed by Oken et al. are not new. In the history of scientific study of the pregnant body, they appear to be just the latest attempt at uncovering the truth of what has been considered a very mysterious, fragile and powerful kind of body. Women – whose bodies were already mysterious and unpredictable – became even more elusive and possibly dangerous in pregnancy (Kukla 2005). Through examining medical treatment of pregnant women over time, one sees that this history is rife with fear of pregnant women's desires, their corrupting influence on men's children, and their unruliness, all of which obviously necessitated supervision and management. Here, regulation by medical professionals was arguably more repressive in nature since pregnancy was deemed dangerous, especially to men's children. It appears as if this history impacts how we think about pregnancy today, as a phenomenon fraught with risk – risk which is inherently bound up with maternal desire. Today, I would argue that pregnancy requires regulation of a different kind, one that we might not recognise as regulation, per se. This type of regulation is carried out via pregnant women themselves, who manage their own desires, health, and wellness, and thus take responsibility for their own actions. Although pregnancy and its outcomes may no longer be feared, it is still something that requires purposeful action to fashion oneself in accordance with a set of normative standards. Here we can see a shift away from traditional conceptions of regulation and towards the concepts of responsibility and freedom (cf. Rose 1999) – which, in my research, are different and specific types of regulation.

Some may argue that the argument presented here is unfair because of the insinuation that scientists seek to blame or control pregnant women, and would rather suggest that the role of science is not to blame mothers, but to empower them with the right information to help them craft their bodies and those of their children into a healthy ideal, minimising risk and maximising potential benefits. I maintain that while scientific research serves the public good by empowering women to maximise fetal and maternal health, it does so at the expense of women's well-being, autonomy, and sometimes health; it creates good mothers who adhere to these regulations and bad mothers who do not or cannot. This is especially complex in the context of a culture that is arguably obsessed with beauty and thinness, and (paradoxically) suffers from 'epidemic' obesity. Moreover, the pressure women face to have an ideal body is astounding, and so it is problematic to admonish women and make them accountable to yet another regulation related to embodiment. While the concern with obesity is well-founded and fears about childhood obesity are legitimate - the health risks associated with obesity are real - it is this researcher's contention that placing the onus on women to control their bodies and comport themselves in particular ways to attain a maternal ideal is fundamentally political. I suggest that attaining an ideal body is fundamentally linked to discourses around productivity, morality, and so forth.

## Objectives and research questions

I suggest an approach to the research that combines critical scholarship on pregnancy, ideal embodiment, obesity, health, mothering, and science, while maintaining a Foucauldian theoretical framework. Thus, my analysis of the medical discourse surrounding gestational weight gain will be driven by the following research questions:

- How has scientific discourse helped create an ideal body and weight for pregnant women?

- How has that ideal weight shifted over time and what is the significance of these shifts?
- What is its connection to women's normalisation and responsibilisation?
- And finally, how is this public health discourse related to the imperative of governmentality?

These questions are addressed in three substantive chapters. Ultimately, these research questions reflect my desire to understand and examine the contemporary story of pregnancy weight gain through a critical lens. My purpose here is to understand how the notions of health, responsibility and ideal embodiment figure together in the experience of pregnancy. My objective is to argue that medical discourse on weight gain in pregnancy creates an embodied ideal as a requirement of motherhood and femininity. Building on Foucault's genealogical approach (cf. Foucault 2003), it will examine this changing discourse and its claims to truth that have the effect of creating docile maternal subjects through an ethos of self-care (Foucault 2003). My purpose is to critically analyze the medical discourse about pregnancy weight gain, and weave a narrative of how techniques of regulation borne of medical truth significantly impact actors who are subject to said truth.

**Tensions evident within this thesis**

I maintain a Foucauldian framework throughout this thesis, however, I did and do remain skeptical about the extent to which this theoretical framework accounts for the entire narrative of the embodied experience of pregnancy. Certainly, I assume that knowledge about pregnancy is transmitted through scientific studies, and thereby has a pervasive

impact on pregnant women's experiences. I also maintain that power does not operate simply through this one facet of medical knowledge. Foucault himself would suggest that power is exceedingly complex. I contend that power works in a heterogeneous manner to produce the pregnancy experiences I am interested in. I acknowledge that many discourses constitute pregnancy in ways that are not easy to pin down. My thesis explains one aspect of embodiment in pregnancy, namely the component constituted by a discrete set of texts, with a specific set of hypotheses in view. I analysed one set of texts for reasons of scope, ensuring an exhaustive treatment of this specific dataset concerned with medical/scientific discourse, as gleaned from published articles.

One may ask after an unspoken tension existing in this thesis, specifically pertaining to the debates around structure and agency. These difficult questions troubled me throughout the course of doing this research, and likely bled into the thesis, written somewhere in between the lines, as it were. Foucault's aim, as I understand it, was to move beyond the structure/agency debate, but there is much controversy concerning the success of this attempt. A great many take issue with Foucault's apparent evacuation of agency, and suggest that he only provides an account of the structural forces which shape individuals, leaving little room to theorise many important and unanswered questions about the self. As I moved through this study, I had many lingering questions about this topic, and I saw where a Foucauldian approach should be augmented to account for individuals' sense of agency. I was curious about women's feelings about their changing bodies, their desires with respect to embodiment and health, and their relationships to their fetuses, for instance. I am especially interested in a woman's sense of commitment

to and love for the fetus, which complicates the notion of responsibilisation I put forward in this thesis.

I imagine this would give some Foucauldians pause, and they would give me a very good explanation of how discourse molds individuals to feel as if they are agential, when they are in fact effects of power. This understanding of the self and of social life is not satisfying for me. I believe people's actions are exceedingly complex, and accordingly, a satisfying explanation of one's experience much necessarily delve into the issue of agency. Suffice it to say, I understand agency as always constrained, yet I believe it does exist, and that it is a valuable concept to interrogate.

In this thesis, I do not give an extensive account of experience and agency. I argue that women's experience in pregnancy is largely ignored by the scientific studies. While I have given the notion of agency much thought, it does not figure prominently in my analysis for an important reason: the objects of inquiry do not lend themselves to an analysis of resistance and agency. They allow for one to give an account of a structural aspect of the phenomenon of pregnant embodiment. Likewise, the method I employ is best utilised to explain the structural aspects of this object, in a specific way.

## Chapter II. Theoretical Framework

The objective of this theoretical framework is to articulate the assumptions and guiding principles of my research. Specifically, the aim of this section is to provide an overview of Michel Foucault's major contribution to social theory, namely a unique analysis of power and subjectivity. In this chapter, I discuss his notions of pastoral power, biopower, governmentality, and responsibility, which serves to clarify the mechanisms through which power and knowledge act. Nikolas Rose extends these Foucauldian ideas, and expands upon their significance for theorising biomedicine and health. For Foucault, since the shift towards modernity, we have witnessed an accompanying shift in the mechanisms of power, from power that emphasises the sovereign's right to punish and kill his subjects (1990, 135) to a power that normalises, regulates, and organises the lives of those subjects (136). In such a way, power has moved from the hands of one powerful leader who represses his subjects and is instead multiplied, diffused, and made productive. That is, power works not through decimating subjects, but through producing them into subjects that are valued, disciplined, and efficient. In *The History of Sexuality: An Introduction* (1990), Foucault argues that "the biological existence of the population" (137) is at stake. This means that it is not within the interests of the state to kill individuals, rather the state must focus on the health and well-being of the population as a whole, or as Foucault notes, "its main role [is] to ensure, sustain, and multiply life, to put this life in order" (138). Ordering life is inherently wrapped up in discipline rather than death; discipline necessarily emerges out of discourses which function to parse out the normal from the abnormal. So, normalising discourses function to order the life and health of individuals, and accordingly, the population.

This chapter expounds upon Foucault's analytical work, which suggests power is related to governmental strategies to guide the conduct of others, and the research of other theorists who add to this theoretical sensibility. As Nikolas Rose (1999) writes, this theoretical framework and thesis examine "the invention, contestation, operationalisation and transformation of more or less rationalised schemes, programmes, techniques and devices which seek to shape conduct so as to achieve certain ends" (20). First, I discuss Foucault's understanding of power, and in turn, the notions of governmentality, "freedom," "truth," and responsibilisation. Then I turn to Nikolas Rose, who makes crucial contributions to Foucauldian theory, especially in the areas of health and biomedicine. Then I move to a discussion of Elizabeth Grosz, whose research on the body, gender, and science is important to my topic. Finally, I take up Judith Butler, whose discussion of norms, the Other, and abjection proves valuable to this thesis.

## Foucault on power

### *Pastoral Power*

Much in line with his theorising of modern power being fundamentally productive rather than repressive, Foucault suggests that pastoral power is a modern type of power that governs through guidance, the roots of which can be traced to the Judeo-Christian metaphor of a shepherd tending to sheep. The first point Foucault makes with regard to pastoral power is that it is "not exercised over a territory but, by definition, over a flock....in its movement from one place to another" (2007, 125). Secondly, he suggests that "pastoral power is fundamentally a beneficent power" (126). The shepherd is entrusted with the salvation of the flock; it is his duty to care for, watch over, and even

sacrifice himself for them. The principal shepherd in Christian mythology is, of course, Jesus, whose guidance over, and sacrifices for, humanity have served as the cornerstone of the faith (152). However, unlike kings and the God of the Old Testament who ruled by force and domination, Jesus had no interest in rule and tyranny. Rather, it can be argued that he courted his followers by teaching and leading by example (180). This leadership style permeates the whole of Christian doctrine; it is indicative of the pastor's responsibility to his followers, and his own membership in the flock.

Accordingly, the Christian pastor shepherds the congregation toward salvation, protecting them from damnation and other terrible fates, while in the same instance, he "becomes accountable for the actions of all" (Dean 1993, 75). Likewise, modern subjects begin to see themselves as members of the flock, willing to be governed – in the Church and in other aspects of their lives. This brings to mind another central feature of Christian belief, namely that of "free will." It is of the utmost importance to Christians that followers are not coerced to attend service, nor are they forced to believe. It is vital to Christianity that followers are convinced by not only the pastor's compelling arguments about salvation, but also by his commitment to their salvation. Or in other words, they must sincerely trust his judgment, conviction, and devotion.

On this point, Foucault would not completely agree. He argues that "spiritual direction will not exactly be voluntary" (182). While the traditional notion of the shepherd tending to his sheep brings to mind nurturance and caring devotion, Foucault suggests that pastoral power "establishes [an] exhaustive, total, and permanent relationship of individual obedience" to the Christian pastorate (183). The Christian pastor, it should be clarified, has vast control over every movement conducted by his

followers, as a matter of spiritual import. In entering into this relationship, "complex and profound moral ties bind...the shepherd and the members of his flock"; strident obedience of followers is valorised, and the pastor's knowledge of each individual is made paramount (Dean 1993, 75).

Since the Church has inserted itself into the minutiae of parishioners' daily lives and there exists a kind of compulsion towards salvation, spirituality begins to revolve around the constant examination of one's actions, thoughts, and conscience (Foucault 2007, 182). So too, does it revolve around complete dependence on, and reverence and obedience to, the shepherd for guidance in seeking out the hidden truth of oneself. The Platonic understanding of self-mastery is transformed into self-mastery in the service of God, the pastor and the church. And this self-mastery is policed and maintained through the act of confession (cf. Foucault 1999). Thus, Foucault suggests that "[t]he Church is a religion that thus lays claim to the daily government of men in their real life on the grounds of their salvation and on the scale of humanity" (148). This intervention of religious belief on the conduct of individuals is a unique historical moment, where "an institution...governs men in their daily life" (148). It does so vis-à-vis the shepherd, who does not coerce or maim with his staff; he simply convinces the flock of the correct direction to move in, and they, in deciding that this is indeed the best course of action to assure their salvation, move on their own, but do so collectively and obediently.

What is clear is that this form of pastoral power has transcended the Church, and as such, impacts secular institutions and ideas. In Foucault's words, "the pastorate burst open, broke up, and assumed the dimension of governmentality" (193). While his work is not a genealogy of the pastorate per se, he cites several events as transforming pastoral

power into governmental power, or the power to govern the conduct of others: first, the Reformation and Counter Reformation as giving religious authorities far greater control over the lives of others, especially in educating children; second, the re-emergence of philosophy prompting academics, such as Descartes, to ponder how best to conduct oneself; and lastly, the preoccupation of those in the political sphere on if, how, and to what extent a sovereign should take up the conduct of the populace (230-231). In sum, Foucault argues that "there was not a transition from the religious pastorate to other forms of conduct...[rather]...there was an intensification, increase, and general proliferation of this question and of these techniques of conduct" (231).

On first glance, it is quite clear how one can link pastoral power with medical expertise; a doctor or expert may act as a guide to health, and so governs the conduct of his/her patients.

***Biopower***

Biopower and biopolitics are related closely to pastoral power. Dean (1993) argues that biopolitics is a contemporary version of pastoral power insofar as "the individual is now 'normalised' in relation to scientific knowledge of populations" (76). Likewise, power – as Foucault conceives of it – is "now carefully supplanted by the administration of bodies and the calculated management of life" (1990, 140). Or as Rose (2007) notes, biopower refers to "strategies involving contestations over the ways in which human vitality, morbidity, and mortality should be problematised, over the desirable level and form over the interventions required, over the knowledge, regimes of authority, and practices of intervention" (54). Simply, biopolitics can thus be understood as a strategy of managing

the life and health of an entire population often through acquiring knowledge of the biological function of bodies and vital population statistics.

Foucault understands power over life in this sense as having two poles: 1) the body as machine or anatomo-politics of the human body, and 2) the species body or the biopolitics of the population (139). By body as machine, he is referring to optimising bodily function, or simply, individual bodies becoming as useful, efficient, and disciplined as possible. Foucault argues that bodies are moulded and optimised into bodies that fit a specific modality of life; bodies are made docile. By species body and biopolitics of the population, Foucault is referring to power focused on "the body imbued with the mechanics of life, and serving as the basis of the biological processes: propagation, births and mortality, the level of health, life expectancy and longevity, with all the conditions that can cause these to vary" (139) or "the set of mechanisms through which the basic biological features of the human species became the object of political strategy" (Foucault 2007, 1).

Accordingly, modern power is now focused on maximising health, efficiency, and well-being in both the individual body and the social body, or "the population." Rose (1999) suggests we must apprehend discourse in action – those legal texts, government programs, and funded studies, for instance, that exist to help *responsible, free* individuals to make the *correct* choices. He utilises Foucauldian notions of discipline and biopower to understand the ways in which strategies of governance "act upon ...domains [such as population health and reproduction] by reshaping the conduct of those who inhabit them without interdicting their formal freedom to conduct their lives as they see fit" (23).

*Governmentality*

As noted above, Foucault's understandings of pastoral power and biopower are integral to the mechanism of governmentality. The concept of governmentality is compelling for my purposes, as an analysis of "the formation and transformation of theories, proposals, strategies and technologies for 'the conduct of conduct'" (Rose 1999, 3). Foucault asserts that the phenomena of rulers being concerned with the way to govern or with 'the conduct of conduct' emerged in the sixteenth to eighteenth centuries (Foucault 1991, 87). Therefore, his study of governmentality concerns "the institutions, procedures, analyses and reflections, [and] the calculations and tactics that allow the exercise of this very specific albeit complex form of power, which has as its target the population" (102). In addition, Foucault is interested in the creation of governmental apparatuses, and the development of particular types of knowledge that are useful in targeting the population, which he argues are all part and parcel of governmentality.

Governmentality has been taken up by Nikolas Rose, Peter Miller, and Dean Mitchell, amongst others, however, for my purposes, Rose's work figures most prominently in the present discussion, as he is, like me, specifically concerned with medical and scientific knowledge. According to Rose (1999), government is about those efforts which direct citizens towards the "right" kinds of behaviours, and "it also embraces the ways in which one might be urged and educated to bridle one's own passions, to control one's own instincts, to govern oneself" (3). Governmentality, then, concerns the ways, ideas, and methods through which to implore people to comport themselves into a healthy standard for the purposes of having a healthy populace, or for the public good. At the same time, it is also about the ways in which those who govern

come to understand their own responsibility in assuring the well-being of both individuals and the entire population, and accordingly, how their influence and interventions into the lives of the citizenry is vital.

***"Freedom"***

In *Powers of Freedom: Reframing Political Thought* (1999), which is a 'genealogy of freedom,' Rose endeavours to understand how "the values of freedom have been made real within practices for the government of conduct" (1999, 10). Since freedom has often been associated with the most righteous and ideal political systems, Rose asks after the emergence of freedom as a valuable and ethical concept and the implications of its emergence. He argues that the popular conception of freedom is related to individual autonomy and the active shaping of one's identity. He notes that "[f]reedom is seen as autonomy, the capacity to realise one's desires in one's secular life, to fulfil one's potential through one's own endeavours, to determine the course of one's own existence through acts of choice" (84).

Moreover, he argues that a discourse of freedom works to ensure that formal governance is not required, rather, governance transpires vis-à-vis responsibilised subjects who govern or conduct themselves; therefore, governmentality is invested in upholding notions of freedom, as it ensures that people conduct their own conduct. Laws and regulations emerged to protect freedoms, and likewise, subjects were free to do what they wished as long as their actions were under the auspices of the law. Rose further argues that something rather paradoxical occurs with respect to being "free." Specifically, it "was accompanied by the invention of a whole series of attempts to shape and manage

conduct within [individuals] in desirable ways"(69). Therefore, freedom is not the antithesis of regulation, "but is instead central to the workings of state power, used as a technique in governing" (Brown 2008, 293). Governmentality then, is a method to ensure particular types of behaviour, and is explicitly linked to the idea of individual freedom; this ethos of freedom is actually another method of regulation. As Rose notes, "modern individuals are not merely 'free to choose,' but obliged to be free" (87). Action is understood as a reflection of the individual's inner self or their ethics. This so-called free choice is understood through a sensibility of governmentality, which requires individual choices to be made in particular ways; it becomes increasingly critical for individuals to act ethically, and in accordance with laws. Rose goes on to suggest that both public and private behaviours are subject to regulation. While public behaviour is guided by "codes of civility, reason, and orderliness," private behaviour is "civilised by equipping [individuals] with languages and techniques of self-understanding and self-mastery." (69)

***"Truth"***

Rose makes clear that the authority of government to guide the free choices of individuals is intertwined with truth. While the nature of the truth (where truth is found) has changed, the link between the ability to expound upon the truth of anything and the authority to guide the conduct of others has remained relatively unchanged. So whilst the nature of truth may change from truth found in religious texts to truth found in legal texts, the ability of those who are governing to exploit whichever truth exists grants them authority to govern over others (1999, 9). In the present context of a thesis which concerns the sociology of science and knowledge, Rose makes an especially salient observation that "technologies for the conduct of conduct...since the nineteenth century have paid

particular attention to the...discourses organised around scientific norms of truth" (9) that relate specifically to the human body. Significantly for us, he makes clear that the articulation of scientific truth about the human body subjects people to modes of correction. From this perspective, the emergence of medical studies about optimal weight and wellness in pregnancy implores individual women to correct their weight to fit a certain norm.

***Responsibilisation***

On a closely related topic, I now turn to self-discipline or responsibilisation. Since Foucault does not understand power to be essentially repressive, but instead bound up with processes of normalisation and optimisation, it goes almost without saying that subjects internalise norms, understand themselves through these norms, and craft themselves into the right kinds of subjects[3]. Likewise, people who are self-govern are responsible for their own successes and failures at approximating the norm. Or as Reuter (2007b) explains it, responsibilisation is "a Foucauldian technique of power whereby the individual comes to accept responsibility for her/his own health and therefore undertakes various operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves" (238). Governmental reason is thus essentially individualising.

The Foucauldian notion of responsibilisation is vital for this thesis in that I hypothesise that pregnant women seek out ways to maximise their own health, and also

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[3] I do not want to suggest that responsibilisation individuals become who they are is through a process of responsibilisation and normalisation, or as effects of power. I suggest that the process of becoming who one is a exceedingly complex, responsibilisation being only one facet of this process.

accept the blame when their health is not optimised, or conversely, accept the accolades when they do. Rose (2007) argues that women "are [especially] obliged to take on responsibility for their own medical futures and those of their families and children" (29). This assertion links quite clearly to the literature regarding the asymmetrical responsibility women are accorded in maintaining the health and wellness of their families vis-à-vis pregnancy. I expand upon the obligation towards health below.

**Surveillance and normalisation**

In *Discipline and Punish: The Birth of the Prison* (1995), Foucault elaborates on the above ideas regarding surveillance, productive power, docility, and responsibility. In this text, Foucault discusses Bentham's design for a prison – the 'Panopticon' (200), and argues that "the major effect of the Panopticon [is] to induce in the inmate a state of conscious and permanent visibility that assures the automatic functioning of power" (201). In other words, prisoners are never certain of the level of surveillance because they can never see when their jailers are watching them. As such, the prisoners internalise the rules and regulations as set by their jailers, and employ techniques of self-surveillance to be sure that they are not found violating any regulations; or as Foucault states, the prisoner "assumes responsibility for the constraints of power...[and] he becomes the principle of his own subjection" (202).

Fundamentally, this self-surveillance ensures that the body of the prisoner is actively normalised; expert medical knowledge also functions through self-surveillance and normalisation, where patients must take account of their own bodies. The prisoner or patient's very movement and bodily comportment is governed to ensure that "each

individual...will conduct him- or herself in a space of regulated freedom" (Rose 1999, 22). Foucault argues that Panopticism is a good metaphor for how we generally operate in society. That is, we internalise rules and surveillance, employ strategies of self-discipline, and craft our bodies and bodily movements to best approximate the ideal. One can see how we are not disciplined through threat of punishment, but through our own actions that are directed towards the best approximation of rules, regulations or norms. Thus, recalling previous arguments, one can identify that power works efficiently without the threat of death and punishment, but through imploring citizens to take up the task of disciplining themselves. Most significantly, conducting the conduct of subjects takes place without impinging on their sense of freedom (23). Notions of the public good, freedom, liberalism, democracy, rationality, and the like are reified, while the power of the political system is held intact and lies unquestioned.

**Nikolas Rose on health and biomedicine**

Following from Foucault's analytics of power and governmentality, Rose's extension of Crawford's (1980) notion of 'healthism' – a kind of societal obsession with healthiness and a perceived personal obligation towards optimal health – is a pivotal dimension of this thesis because many women are interested in maximising their health and the health of their fetuses in pregnancy. His analysis of healthism also points to issues of 'empowerment' and responsibilisation in the desire for good health, and the dependence of people upon health professionals to seek out the right information to optimise their health. Indeed, being healthy is no longer a matter of being a passive participant, rather, the healthist actively seeks out medical treatment "to maximise and enhance [his/her] own vitality" (Rose 2007, 23).

An extension of these ideas is evident in Rose's contention that though medicine is central to conducting the conduct of others, current biomedical realities (especially those related to life at the molecular level) ensure that pastoral power works differently. Rather than solely consisting of an ethos of expert guidance, pastoral power today "entails a dynamic set of relations between the effects of those who council and those of the counselled" (2007, 29). The responsibilised consumer of medical knowledge is not ignorant, rather, this subject interacts with expert interlocutors with vast knowledge of their own sets of risk factors and concerns (cf. Castel 1991). Likewise, those who possess expert knowledge take great care to not coerce their patients. Rose argues that the "new pastors of the soma espouse the ethical principles of informed consent, autonomy, voluntary action, and choice and nondirectiveness" (29). Patients are guided, but only to the extent that they are knowledgeable about what ails them and that they desire advice and guidance. Considering that responsibilisation of individual health is on the increase and that sickness is now a form of deviance (Crawford 1980, 380), unknowledgeable patients are pathologised.

**Neoliberalism and health**

Although healthism would seem like a reasonable endeavour, health, in this context it is still a matter of governmental strategy; the regulation of health takes on an ethos of rationality, responsibility, choice, self-mastery, and individuality – in short, neoliberal subjects are responsibilised to take matters of health into their own hands. A neoliberal sensibility, reflected in the move towards free market capitalism and the decline of Keynesian economic policies, privileges the notion of individual responsibility to the detriment of other ideas, such as government spending and regulation. For instance, a

neoliberal approach towards health forestalls an analysis of health from a variety of perspectives. Even an individual who makes "rational" and "responsible" health choices may succumb to illness. Moreover, neoliberal attitudes towards health ignore the structural inequalities which cause illness, and allow others to blame those who are ill rather than addressing their problems in a meaningful way. Rose argues that "individuals are addressed on the assumption that they want to be healthy, and enjoined to freely seek out ways of living most likely to promote their health" (Rose 1999, 86). In a healthist society, subjects are consumers that "are constantly urged to conduct [their] private lives in order to avoid potential disease or early death" (Jardine 2004, n.p.). Certainly, health is important to most people, however, it is false to assume that health is easily attainable for all who want it.

**Elizabeth Grosz**

Elizabeth Grosz takes a keen interest in theorising the body, and is especially interesting for a thesis regarding women's embodiment and health and how these issues are related to the scientific study of women's bodies. In *Volatile Bodies* (1994), Grosz aims for "a refiguring of the body so that it moves from the periphery to the centre of analysis, so that it can now be understood as the very "stuff" of subjectivity" (xi). She and other theorists of sexual difference are committed to understanding the sexual specificity of the body in the context of the body being socially constituted. That is, the body is not pre-cultural, given, or wholly natural, rather, it is constituted and reconstituted over time, in countless ways (18). In this case, the pregnant body is undergoing redefinition by medical/scientific discourse. Theorists of sexual difference, such as Grosz, rally against Cartesianism, and take great issue with the suggestion that women are more closely connected to the body

then men. Pregnancy is a period of time when women's connection to the body is made explicit, and both cultural and medical/scientific discourses often valorise this connection.

In *Volatile Bodies*, Grosz makes six suggestions for analysing the body without reifying the dichotomy between nature and culture (or other binary relationships, for that matter). First, she demands that Cartesian dualism must be disputed; second, particular groups such as women and minorities cannot be associated with the body while dominant groups transcend the body, and further, it must be contested that those who transcend the body are ideal, while those associated with the body are inferior; third, there should be no universal or neutral human body, but rather, multiple bodies always exist and should be taken into account; fourth, it is crucial to refute essential or biologistic accounts of the body; fifth, great care should be taken to understand the connections and disconnections between thought or psychological processes and embodiment and bodily processes; and lastly, the body ought to be thought of as an object that exists between binary pairings, and thus holds the capability to help dispute binary logic. I keep these suggestions in mind when making sense of how women's bodies are traditionally framed, especially through medical/scientific discourse. Additionally, refuting the binary between nature and culture is of vital importance to my project, as I endeavour not to privilege either category, but understand how they vitally inform one another. (21-24)

**Judith Butler**

Butler is interesting for my purposes because of her interest in how discourse and norms create the very materiality of our bodies. Significantly, she brings gender to the fore in

Foucauldian analysis. In that I am taking a Foucauldian approach to the study of women's bodies, her work lends theoretical support to my project, especially with respect to normalisation.

***Normalisation, intelligibility and gender***

In her analysis of gender, Butler uses two major concepts from Foucault; first, she concurs that power has effects which work to regulate subjects, and second, she argues that this very regulation is what makes us subjects. That is, we are formed meaningfully through these very regulations. She maintains that the norm acts as a verb; that is, it *does* something, it produces people. It does not simply produce subjectivities, it produces bodies. Normalisation, she argues, is that through which "the body is effectively materialised" (1993, 33). The materiality of the body is not given, rather, it is bound up with the productive effects of power (34).

Yet, Butler departs from Foucault in that she understands gender to be its own regulatory regime, not an effect of the overall regulation of the subject. She argues that "gender requires and institutes its own distinctive regulatory and disciplinary regime" and it "operates within social practices as the implicit standard of normalisation" (Butler 2004, 41). For Butler, norms are difficult to analyse, except in the "effects they produce" (41) In terms of the regulation of gendered bodies, norms govern what it means to be intelligible; specifically, they determine which actions, experiences, and bodies are liveable, recognisable, and acceptable. Butler suggests that while the norm frames who is intelligible, it also frames who is unintelligible because unintelligibility is always formed in relation to the norm. She maintains that "if the norm renders the social field intelligible and normalises that field for us, then being outside the norm is in some sense being

defined still in relation to it" (2004, 42). Thus, being unintelligibly gendered necessitates a comparison to the intelligibly gendered, just as being categorised as abnormal always requires a comparison and reification of the norm. And most significantly, simply being compared to the norm reaffirms the norm and re-establishes its authority. In short, norms have the power to tell us who has access to legitimate personhood, and who is Othered by them. Additionally, gender norms work to make masculinity and femininity normal and natural, and force us to think of gender in bifurcated terms. For our purposes, it will be interesting to investigate the particularities of the regulation of gendered bodies and also to understand how pregnancy, itself, is a regulatory apparatus in this sense.

While the norm sets a gender ideal or standard that all subjects approximate in different ways, this approximation should not be mistaken for a performance of a gender role that is based on personal choice or agency. As Butler argues, it is not as simple as "a wilful and instrumental subject" (1993, *x*) donning whichever gender s/he pleases for the day. She is clear in her argument that the subject always exists in "the context of a set of norms that precede and exceed the subject" (2005, 17). This means that one is produced through discourses around gender; and from Butler's point of view, one does not actively make up one's gender, rather, one reaffirms those gendered regulations through daily action. She argues that this could theoretically grant a subject some leeway in how closely they approximate the norm (meaning that one can still be read as intelligible if one does not approximate the norm perfectly). However, Butler clarifies that though this may be a possible inroad to the denaturalisation of the norm (2004, 218) it is also a place for violent reassertion of the norm. When one deviates too drastically from the norm, regimes of regulation may address the subject by correcting his/her behaviour, or even

his/her body, as she exemplifies in the case of the surgical intervention of intersexed children (Butler 2004). Butler argues that the ability to make choices is limited in this framework. If the choice is within normative ideals, it can be made. When a person acts in ways that do not create him/her into an intelligible subject, s/he may not have access to rights and personhood. For instance, my use of him/her and s/he in this sentence actually works to reinforce binary notions of gender, and could render those who do not fit into either category unintelligible. In terms of this thesis, intelligibility will be related to notions of weight and mothering.

***Abjection***

Building on the work of Kristeva (1982), Butler interrogates the notion of the abject. Butler ascertains that bodies are produced within a field of intelligibility, and by its very nature, the matrix that governs intelligibility functions to exclude certain subjects or bodies. Butler recognises that this produces a "domain of abject beings, those who are not yet 'subjects,' but who form the constitutive outside to the domain of the subject" (3). The existence of the abject – those unliveable subject positions – is required to mark the limits of the subject. Simply, the subject must repudiate the abject to meaningfully constitute him/herself. It is evident that her formulation of the abject is related to notions of intelligibility and normalisation.

This concept is useful for this thesis because of the kinds of dichotomous subject positions that emerge, such as thin and fat, healthy and sick, male and female, responsible and irresponsible, white and black, docile and unruly. The idea of abjection sheds light on how and why certain bodies are castigated or "Othered" and made into 'bad' bodies. Following Reuter (2007a), I connect Butler's notion of the abject Other to disease.

Individuals who are overweight, obese, or otherwise "unhealthy" are deemed abnormal; these abnormal bodies serve as a basis from which to compare normal bodies, and thus normal bodies are always constituted in relationship to those abject bodies. That is, good bodies can only be good through the existence of bad bodies. Additionally, abjection connotes disgust, which is particularly relevant to the study of bodies. Considering the subjects garner hatred and contempt because of their bodies or bodily movement, utilising theories of intelligibility and abjection is apt.

In this chapter, I expanded upon the theoretical framework of my thesis, which is primarily based on the work of Foucault. To more fully understand the work of Foucault with respect to the body, health, and gender, I included concepts from Rose, Grosz, and Butler.

## Chapter III. Methodology and Method

### Methodology

Building directly on the theoretical assumptions outlined in the previous chapter, I now describe the methodological underpinnings of this research project, which makes explicit how and why discourse analysis is vital to the critical study of pregnancy weight gain. This chapter also clarifies the rationale for employing this particular method of analysis and interpretation. I begin with an explanation of and rationale for discourse analysis generally. I then move to a discussion of medical/scientific discourse and its relationship to genealogy, thereby illustrating the interconnectedness of scientific knowledge, truth, and power. Finally, I describe my method in detail, including the practical aspects of the data collection.

#### *Discourse analysis*

There is great difficulty in delimiting a singular definition of discourse; as such, I employ several interpretations in combination. These definitions come from researchers who utilise and build upon Foucauldian methods in their own work. Phillips & Hardy (2002), for example, explain succinctly that "a discourse [is] an interrelated set of texts, and the practices of their production, dissemination, and reception, that brings an object into being" (3). Importantly, they focus on a body of texts and the interrelationships between texts to elucidate the emergence of the discourse and how it is sustained over time (5), while they also maintain that "language constructs[4] phenomena, [rather than] reflects and

[4] Ian Hacking (1999) gives a compelling critique of social constructionism. Nonetheless, arguing about the construction of facts is still useful in many ways. What is vital is not conflating the idea of construction of

reveals it" (7). Carabine (2001) puts forth a similar understanding of the productive nature of discourse, suggesting that it consists "of groups of related statements which cohere in some way to produce both meanings and effects in the real world" (268). Perhaps the most satisfying explanation comes from Phillips & Jorgensen (2002) who propose that discourses privilege certain understandings of reality, and therefore "constitute subjects and objects in particular ways, create boundaries between the true and the false, and make certain types of action relevant and others unthinkable" (145). This definition links directly to "normalisation," the process through which discourses establish a norm (Carabine 2001, 277), and thus define categories of normality and abnormality. Especially relevant in this context are categories of health and sickness and, in particular, thinness and obesity. Discourse analysis enables me to show how medical/scientific discourse actively produces the meanings, truths or facts associated with pregnancy weight gain, pregnant women, obesity, risk, and responsibility, and so forth. Specifically, medical/scientific discourse reflects a perceived norm for healthy weight, and thus establishes who fits the definition of "normal," and conversely, who does not - "the deviant."

Phillips and Hardy also distinguish between two distinct theoretical sensibilities evident in discourse analysis; they concern the degree to which either 1) context, or 2) power are emphasised (18). The research presented here reflects the latter approach; following Phillips and Hardy, I proceed from the assumption that critical work, specifically "Foucauldian-informed work[,] often focuses on unmasking the privileges

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facts with the falseness of those facts. The point I am making about scientific knowledge is that it does emerge out of a specific cultural and historical context that cannot be minimised.

inherent in particular discourses and emphasises its constraining effects"(21). Such a critical approach facilitates understanding the discourses evidenced in scientific studies, the social space that is made possible through those texts, and the types of subjects emergent from them.

I use discourse analysis in this project because of my interest in critically analysing the truth claims of medical/scientific discourse, and the pregnant subjects who emerge from this discourse, as well as the possible negative implications of discourse for them. I ground my approach in the work of several researchers. Parker (1999) suggests that providing the new discourse analyst with a set of steps is restrictive, and that the process must instead be "characterised by a sensitivity to language above any 'steps' to analysis" (2) this sensitivity being necessarily interpretive in nature. Considering that interpretation depends on an analyst's theoretical framework, I took seriously the suggestion that a discourse analyst should be particularly concerned with theory; this sensitivity to theory and language guides my work (4).

Parker's chapter "Discovering discourses, tackling texts" (1992) is a guide to distinguishing discourses in a given text. He suggests that the researcher is well served by keeping ten major ideas about discourse in view when analysing and interpreting texts: namely 1) a discourse is realised in texts; 2) a discourse is about objects; 3) a discourse contains subjects; 4) a discourse is a coherent system of meanings; 5) a discourse refers to other discourses; 6) a discourse reflects on its own way of speaking; 7) a discourse is historically located; 8) discourses support institutions; 9) discourses reproduce power relations; and 10) discourses have ideological effects (Parker 1992, 6-19). These ideas are

mainly a reiteration of the above ideas about discourse. Nonetheless, they provided a useful framework on which to build my analysis.

Equally useful, Carabine (2001) provides succinct and thorough recommendations for carrying out a theoretically-driven research project with a clear method; many of her suggestions are similar to those addressed above by Parker (1992). However, these suggestions give a sense of what the discourse analyst actually does and the types of "results" one can expect from such a method. Especially salient for my research are her suggestions centring around the following: 1) immersing oneself in the data; 2) identifying key themes, categories and objects related to the discourse in questions; 3) understanding relationships between discourses, both those lending support or fostering resistance; 4) being cognisant of what the discourse avoids saying or does not address; 5) articulating the effects of discourse; 6) contextualising the discourse in relation to dominant historical and cultural power/knowledge formations; and 7) being aware of the scope and limitations of the research (281).

Closely related to Carabine's suggestions, Phillips and Hardy (2002) agree that there is no specific formula for discourse analysis, but suggest that the central aspect of analysis concerns how the data constructs that about which it speaks (2002, 76). In other words, at the most basic level, I ask how the various objects of analysis are defined. In my analysis for instance, I ask how the data present, define, and support "facts" and "truths" related to pregnancy, obesity, and risk, among other ideas. Following Reuter (2007), I take these texts as "empirically viable indicators of the material and discursive practices and social relations involved in the emergence" (15) of the good maternal subject. Likewise, Reuter argues that medical texts are a key site of dialogue between

medical professionals (14). This dialogue constitutes the "truths" mentioned above. To further extend the concerns about the definition of subjects and objects I ask, following Carabine, not only how subjects are defined, but also if the subjects' own voices exist in the discourse. In the medical texts I have analysed for instance, there are few attempts to recount pregnant women's concerns and challenges explicitly.

### *A genealogy of scientific discourse*

This study takes as its object of analysis medical/scientific discourse. I have elected to focus on a discrete set of texts - medical articles from 1990 to May 2009 - that constitute one aspect of the discourse surrounding pregnancy weight gain, alongside other issues such as healthy weight and optimal fetal health. As a key arena for the exchange of "expert" knowledge, these documents represent the dominant discourses or controversies current in the medical community today regarding the subject of weight gain and pregnancy. Through scientific studies, these experts produce, reproduce, and often contest scientific knowledge; in this case, they espouse particular truths about pregnant bodies. Using various empirical methods, these researchers posit that they have uncovered certain facts related to their research questions, explain the meaning of their results, and discuss the implications of these results. This discussion often consists of suggestions for clinical practice and public health policy.

Following Löwy (1988), I argue that scientific facts "do not exist 'out there' in nature waiting to be discovered by objective and interchangeable observers" (135). Rather, scientific truths come out of particular historical and cultural contexts; more specifically, I concur that concepts of health (and normalcy) and disease (and pathology)

are socially constituted, and thus necessarily linked to ideology and relations of power. Here ideology refers to Althusser's (2001) two theses. First, I concur with him that ideology "represents the imaginary relationship of individuals to their real existence" (109), which means that one uses dominant sets of ideas or even falsehoods about "real life" to help interpret and manage one's life. Second, Althusser claims ideology to have a material existence, meaning that ideologies always exist through State apparatuses and their practices (112). In short, science is linked to ideology insofar as it is a way of understanding the world, and emerges from specific understandings of our existence; additionally, it creates and sustains particular material practices and even subjects. Following Foucault's genealogical approach, then, my methodological framework proposes to examine those medical/scientific discourses which have the effect of regulating and normalising bodies, especially given that these discourses "are tied to particular interests and ideologies" (Reuter 2006, 295). My project thus consists of studying, documenting, analysing and contesting the truths associated with gestational weight gain and the "good" maternal body, as evidenced by themes I have unearthed in the medical articles.

Typically concerned with history and conditions of possibility, genealogy is not simply a matter of historically and culturally contextualising the present. Specifically, it is concerned with the historical analysis of power itself, and the truth effects with which it is bound up. Thus, my analysis is not informed by an approach that asks after context alone; rather, it interrogates how power-effects have manifested themselves in and as a result of these documents. While context is vital, it does not alone give a thorough account of the omissions, disputes, and un-write-able moments of history that are

subjugated in the pursuit of the production of knowledge and truth. Genealogy is therefore a method that calls for a more complex rereading of texts that interrogates and necessarily disputes the notion of teleological movement from one historical moment to the next (Foucault 1971). Simply put, the method understands historical documents as constitutive of discourse. In this respect, discourse is thus linked to power/knowledge. Referring to power and knowledge in such a way - power/knowledge - is indicative of Foucault's intent to show how the production of knowledge and the relations of power cannot be separated from each other; claims to knowledge are intrinsically bound to power to normalise subjects. Accordingly, genealogy is said to be "an insurrection against the centralising power-effects that are bound up with the institutionalisation and workings of any scientific discourse" (Foucault 2003, 9). It becomes a useful approach to "make strange" those objective or even self-evident truths - the ones that we deem completely neutral, free of bias, unencumbered by the effects of culture, or the relations of power - and examine the processes of normalisation they engender. This links to arguments that Haraway (1988), and Löwy above, make regarding the objectivity of scientific inquiry, namely that objectivity is neither possible nor ideal. Theoretically, it leads to an understanding of the claims to truth and the legitimacy granted to institutions to make these claims.

A Foucauldian framework, such as the one I use here, privileges the notion that discourse does not simply "represent [...] a subject; in practice, it simultaneously constitutes the kind of subjects that are meaningfully embedded in the discourse itself" (Gubrium and Holstein 2003, 226). In other words, medical/scientific "discoveries" do not simply describe bodies that already exist "out there". They simultaneously constitute

those bodies and actors in speaking about them. Following and building upon Reuter's (2007) method, I understand medical/scientific articles as being imbued with medical authority because of their connection to governing the population (14).

## Method

In this section, I outline how I have gathered my research data using PubMed®, and the criteria used to narrow the scope of my search. Specifically, I defined a timeline, ensuring the studies specifically addressed weight as an independent variable, eliminated certain types of studies and research questions, and choose data from North American sources to the exclusion of other regions. I did so because of the United States' unique relationship to obesity and obesity research, which will be explained below. Additionally, to ensure my search was exhaustive, I also utilised a technique of snowballing via author publications.

### *Searching PubMed® (MEDLINE®)*

This electronic catalogue lends itself well to finding most of the appropriate documents to use as data for this period (January 1990 to May 2009). The availability of all medical studies on one topic through the PubMed® database makes searching for and locating the studies relatively simple. Each study was available either online through Concordia Libraries subscriptions to those databases or through Interlibrary Loan.

To begin, I typed general areas of interest, such as pregnancy and weight gain, into the PubMed search function. Though doing a search with these words themselves resulted in many abstracts, I used the results of the preliminary search to find other MeSH (medical subject headings) keywords. This allowed me to see how abstracts that

interested me were likely catalogued. MeSH keywords, simply put, are the standard words or phrases which PubMed utilises to catalogue the abstracts. This is not unlike the system of indexing in any library database. One can search PubMed with MeSH keywords by searching for either "MeSH Terms" or "MeSH Major topic". MeSH Terms is more general, while MeSH Major Topic returns abstracts that deal with those keywords as central to the study. A search for MeSH Terms that results in a large number of abstracts would benefit by shifting to a MeSH Major Topic search for reasons of scope and specificity. Since a quick search of MeSH Terms resulted in a multitude of abstracts, I moved forward with only searching MeSH Major Topic[5]. The MeSH keywords I thought would be useful included:

- Body Mass Index
- Female
- Humans
- Obesity/complications
- Pregnancy/physiology
- Risk factors
- Weight gain/physiology
- Birth weight
- Exercise/physiology
- Health status
- Obesity/epidemiology
- Obesity/etiology
- Maternal nutritional physiological phenomena

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[5] For instance, when I input pregnancy and body mass index as MeSH Terms, I found 2560 abstracts, whereas when I search for pregnancy and body mass index as MeSH Major Topics, I found 131.

- Adiposity/physiology
- Anthropometry
- Obesity/diagnosis
- Pregnancy outcome
- Risk assessment
- Maternal welfare
- Fetal programming

Considering that my initial searches resulted in an abundance of relevant titles, I felt confident in not utilising every permutation and combination of all the aforementioned MeSH keywords. In fact, three particular searches were most fruitful in terms of results. My first search, "pregnancy" and "weight gain" generated 2142 abstracts, an overwhelming number. Considering this, I moved on to other searches: "pregnancy" and "obesity" yielded 445 abstracts; "reproduction/physiology" and "weight gain" yielded 262; and "pregnancy" and "body mass index" yielded 131. From these searches, I collected appropriate data. Additionally, I checked a variety of permutations and combinations of adiposity, reproduction/physiology, obesity, weight gain, maternal welfare, risk factors, fetal programming, etc., and found that those searches resulted in significantly fewer results. Furthermore, these results had for the most part been reflected in previous searches, indicating that the search was thorough and exhaustive. Additionally, I collected only articles written or translated into English. This was not a significant number of studies.

PubMed arranges the search results in reverse-chronological order, starting from the most recent articles published on the topic to older articles. To initiate my empirical data collection, I simply gathered the pertinent abstracts from 1990 to May 2009. The

reasons for choosing this time period are based on two major concerns. First, the Institute of Medicine developed new guidelines regarding pregnancy weight gain in 1990 (suggesting that previous guidelines were insufficient and resulted in poor birth and health outcomes for infants). In May 2009, the Institute of Medicine revisited their guidelines again as a result of significant critiques of the 1990 guidelines by numerous scientists and public health officials (Institute of Medicine Report Brief 2009). These events suggest a natural place to begin and end this snapshot of the history of this discourse. As well, the scope of this M.A. thesis does not allow me to go as far back in the history as I might do with a PhD. In other words, the time period chosen is current and manageable.

***Sorting and choosing: Honing in on medical discourse***

Specifically, my research questions ask after the discourse that emerges out of studies of the effects of gestational weight gain (the independent variable) on other dependent variables, such as maternal health, fetal health, childhood obesity, and so forth. As part of this I included abstracts that asked if pregnancy causes obesity because presumably it is the gestational weight gain that would cause future obesity.

I was reluctant to exclude articles in the beginning to ensure that I did not remove anything that could grow in significance later in the search. Upon finishing my search, for instance, I observed that adolescent pregnancy was of particular significance to researchers throughout my chosen time period. A cautious approach to the elimination of abstracts was, in hindsight, the best course of action. This being said, I was likely more cautious at the beginning of the search than I was at the end because I became more

certain of which abstracts were not relevant. My first (cautious) sweep of over 1000 titles resulted in 236 abstracts[6] collected for further investigation – my long list, as it were. I have kept all of the 236 abstracts, but have simply put aside those that did not make subsequent cuts. This was done so that I could revisit titles I may have incorrectly culled.

In brief, I should explain my rationale for how I chose the 236 abstracts because it was not quite as easy as simply including studies that had gestational weight as the independent variable, especially since this was less obvious to a researcher not well-versed in medical and scientific documents. First, I felt that I needed to keep anything that I could not automatically exclude. This appears obvious, but I did it so as not to remove titles that I did not know were significant because of unfamiliar medical jargon. There were several areas of study that I did not include, which asked questions such as: does obesity prevent successful conception via IVF?; does bariatric surgery make it more difficult to conceive?; does being obese/having a high body mass index result in more unintended pregnancy and contraceptive failure?; and, does season of birth correspond to higher obesity? Likewise, twin studies (those studies which study twins so as to parse out the difference between nature and nurture) about obesity were not selected. I elected not to use them because they were inappropriate, somewhat tangential to the topic, or outside the scope of a Master's thesis. All in all, when I looked at an abstract, I asked myself, does it make statements or ask questions about how pregnancy weight gain affects something? If it did, I collected it.

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[6] This number reflects the number of abstracts collected prior to "snowballing" based on publication author, which is addressed below.

What was particularly difficult in this task was delineating between overweight[7] or obesity prior to pregnancy on one hand, and overweight and obesity resulting from pregnancy weight gain on the other. It is not a simple task for scientists to differentiate between the effects of pregnancy weight gain and pre-pregnancy body mass as independent variables, so I argue that I must contend with those articles that discuss the effects of obesity on pregnancy, those that discuss the effects of weight gain on pregnancy, and those that do not explicitly differentiate between those two categories. Considering that both new and old guidelines vary based on pre-pregnancy weight, all of these studies needed to be included, and the significance of their conflation interrogated.

Before cataloguing data by locale or publication, I also decided to see if there was an organic way to remove some of the data. Towards the end of the first perusal of the abstracts, I noticed that twins and multiples were treated quite differently from singleton[8] pregnancies, presumably because multiple births are, medically speaking, more complex and pose greater risks. While I remain agnostic on the subject of how much medical care pregnant women require, I surmise that women pregnant with multiples are in need of more care than women pregnant with singletons. For instance, the medical research suggests that for women pregnant with multiples sufficient weight gain early in the pregnancy is vital. This situation mirrors an ethos that I argue prevalent since the early 1990s; gestational weight gain for all pregnant women must be great enough to ensure the health of the fetus - but not too great. Significantly, this is inconsistent with the conclusions of more recent studies on singleton pregnancies, which tend to argue that

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[7] Overweight is a commonly used as a noun in the medical literature
[8] Singleton is the term that is used in the literature to describe pregnancies that produce one child

weight gains should be significantly curtailed to minimise the risk of future overweight and obesity. I contend that this fact, along with the relatively small number of studies on multiples, makes it reasonable for me to remove these materials from my dataset, though I can well imagine this as an area for further sociological study. For example, it would be interesting to explore how women pregnant with multiples are responsibilised.

Another set of materials omitted from my dataset were a small but growing number of studies on nutrition in pregnancy. From what I gather, these studies are ongoing, and will most certainly emerge as very significant to the issue of health in pregnancy, as weight is often a poor measure of overall nutritional status. In several years, I can see those texts as warranting extensive sociological analysis.

**"Snowballing"**

Berg (2009) refers to snowball sampling as a method that "involves first identifying several people with relevant characteristics and interviewing them [...] These subjects are then asked for the names (referrals) of other people who possess the same attributes they do" (51). In short, this is a method which utilises initial participants (or in my case, initial data gathering) to gain contact with subsequent participants. There is an obvious difference in the usage of the term when discussing medical texts as data, hence my use of quotation marks: "snowballing". However, the effect is similar. The number of studies snowballs by virtue of using studies first collected. The first set of data gives information or clues as to how to proceed and collect further data.

Specifically, when inputting my articles into an Excel spreadsheet, in conjunction with the searches I was doing in PubMed, I noticed that certain authors had published

articles on similar topics. I had already found some of the articles, but others were new to me. Since many of these articles were of clear relevance to my study, I included them. This became another method of ensuring the exhaustiveness of the search. One reason that these additional articles did not appear in my original search results could be the time I did the search; specifically, it could have taken several months to index them (after my initial search). While I added numerous studies to my original search, many of the articles could be eliminated because they did not match my inclusion criteria. This method did add numerous materials to analyse, but it also provided many extraneous materials that were eventually eliminated.

In the case of this research project, I can utilise PubMed's "Single Citation Matcher" to find all the studies published by one author (PubMed Overview). This is especially useful for researchers such as Emily Oken and others who publish prolifically in this field.

**North American data**

The next way of decreasing my sample size was by focusing on North American data. I suggest that the United States has a particularly interesting relationship to epidemic obesity. One could argue that I could study all studies emerging out of industrialised nations, as those are the ones that struggle with obesity – those countries which have diseases caused by having 'too much' of a good thing. However, in looking at the World Health Organization's list entitled "What is the scale of the obesity problem in your country?" (WHO) it is clear that industrialised nations do not rank prominently. The United States ranks 9$^{th}$ of 20, while Canada and every European nation (besides Greece)

do not make the list. In fact, with the exception of Kuwait and New Zealand, most of the nations on the list are not associated with wealth and industrialisation. Interestingly, the countries with the highest percentages of overweight and obese people – most of which are in the South Pacific – are dependent upon trade with the US and New Zealand for the bulk of their food, and have adopted a Western diet which is high in calories and low in nutrition.

Interestingly, the United States, then, is one of the few of these overweight and obese countries to have the resources and research insitutions to undertake the large-scale medical studies such as the ones I have collected. Additionally, the majority of the articles on weight gain in pregnancy in the early 1990s come from the United States, which has continued to lead the proliferation of articles on this topic in this century. This dataset includes Canadian studies, partially because I am a Canadian-based researcher, but also because of Canada's growing concerns regarding obesity and its proximity to the United States. Additionally, the close ties between major US universities and larger Canadian research institutions such as McGill and the University of Toronto, to name only two, ensure at least some similarity in results, findings, and recommendations. Additionally, largescale studies in Canada build directly on the those emerging from the United States.

Table 1: Number of abstracts, North American data

| | Total |
|---|---|
| up to May 2009 | 11 |
| 2008 | 23 |
| 2007 | 16 |
| 2006 | 11 |
| 2005 | 10 |
| 2004 | 5 |
| 2003 | 6 |
| 2002 | 1 |
| 2001 | 4 |
| 2000 | 3 |
| 1999 | 2 |
| 1998 | 6 |
| 1997 | 5 |
| 1996 | 5 |
| 1995 | 5 |
| 1994 | 2 |
| 1993 | 8 |
| 1992 | 6 |
| 1991 | 4 |
| 1990 | 5 |
| **final total** | **138** |

**Analysing data and finding themes**

In the beginning stages of my data analysis I looked to other discursive analyses for guidance; however, in terms of the actual analysis of the data, my own interpretive schema focusing on delimiting specific themes emerged, which depended significantly on my theoretical framework. Thus, I would describe much of the actual analysis as a continued practice of close reading, note-taking and writing. This process makes abundantly clear to me the contention that "[q]ualitative research is endlessly creative and interpretive" (Denzin and Lincoln 2003, 37). While the suggestions by other scholars outlined above were printed on a sheet and placed next to my data, I eventually carried

## Chapter IV. Literature Review

In this chapter, I outline the frameworks informing the present critical study of pregnancy weight gain. I discuss research on obesity, including studies of its "epidemic" nature. Interestingly, issues pertaining to ideal weight and slenderness are important for both the study of obesity and pregnancy weight gain. A discussion of embodiment in pregnancy follows. Finally, I take up the literature on "good" mothering, and end with a discussion of maternal-fetal conflict.

### Obesity

This project cannot be taken up without understanding both the scientific and sociological literature on weight. Here, I would like to expand upon the literature regarding obesity. Actually, the amount of popular literature on the topic – from a variety of perspectives – is astounding. One could argue that whether obesity is epidemic or not, writing on the topic may very well be. In this review of the literature, I will focus less on popular texts. However, beginning with popular understandings of obesity, as espoused by major health organisations, will be beneficial.

First and foremost, it should be noted that The World Health Organization maintains that "obesity has reached epidemic proportions globally [...] and is a major contributor to the global burden of chronic disease and disability." Medical literature about obesity typically holds this axiom concerning risk to be true, and likewise, medical research surrounding obesity understands it as a major problem. The research on obesity

and campaigns to curb overweight and obesity[9] are committed to: understanding the causes of this epidemic weight gain; specifying the health-related consequences of obesity; and critically, reversing this trend. Along these same lines, the Centers for Disease Control and Prevention call our society "obesogenic" – that is, there is something in the environment that propels people towards being heavier than they should be. They argue that Americans[10] have a penchant for inactivity, eating too much food, and eating unhealthy types of food. The organisation suggests that public health programs targeting these issues are best suited to treat the nation's growing weight issue (CDC). In fact, the US government sees the issue as a matter of State-concern; in 2001, the Office of the Surgeon General named reversing obesity a "national priority" (US Department of Health and Human Services).

It should be noted that all of these organisations understand the obesity problem as both personal and social, and similarly understand the cure. Even the social understanding of obesity as an illness tends to frame it as at least partially an issue of individual responsibility, albeit individual responsibility that we have collectively failed at in the past. For instance, it is suggested that people should take particular types of action – namely a change of diet and starting to exercise – to maintain a healthy weight, and that it is for the public good that we *all* partake[11]. This is especially interesting in the context of this thesis because of my interest in responsibilisation; people are not forced to

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[9] I notice that medical literature uses overweight as a noun. For instance, it typically says at risk for overweight and obesity, as opposed to, at risk for being overweight and obese. I follow their lead.
[10] Though some might argue that Canadian society, too, is obesogenic, considering that 23.1% of Canadians are obese, and 36.1% overweight (Tjepkema 2008).
[11] This sentiment will likely rise as the notion of preventative medicine becomes popular. In Barack Obama's bid for election, his healthcare reform ideas focused much on preventative medicine as essential to affordable care. Therefore, being healthy (and much of this health is predicated on a healthy weight) becomes a kind of measure of responsible citizenship and patriotism.

adhere to a particular lifestyle, but are "free" and "empowered" to make "informed" choices. In the case of health and weight, public health officials and the State provide a wealth of information to its citizens and implore them to seek out healthy choices rather than forcing those choices upon them. Ultimately, I argue the effect is the same, but the idea of liberty is held up problematically as the unfaltering ideal.

Many sociological accounts also consider obesity to be a significant social problem, but focus on the social determinants of disease and/or the social repercussions of being obese. Studies of the former framework often focus on how class and race affect weight; for instance, as with other diseases, people of lower socio-economic status and particular ethic/racial groups are disproportionately at risk for overweight and obesity (cf. Cohen et al. 2005, Honeycutt 1999, LeBesco 2004). Meanwhile, research of the latter sensibility has focused on how overweight and obesity are significant sources of stigma and discrimination (cf. Dejong 1980, Maurer and Sobal 1999), and subsequent works have articulated the gendered aspects of this stigmatisation (cf. LeBesco 2004, Warin et al. 2008). Considering the wealth of research on how women are negatively affected by the pressure to be thin and beautiful, it is not surprising that some researchers argue that overweight or obese women face greater discrimination than do men. The extent to which this trend persists is debatable as researchers take up the ideas of men's ideal embodiment. In any case, the research consistently argues that overweight and obese people face great difficulty in being treated as equals in our culture. Haskins and Ransford (1999) suggest that "weight, like class, race, and gender, is a stratification variable" (296). This stigmatisation is especially problematic because unlike other categories like "race" and gender, the overweight and obese are held responsible for

controlling their own body weight, and therefore, their assignment to this category. Their inability to comport their bodies according to the healthy, normative standard is seen as a personal flaw. Since the ability to control one's body is considered to be a measure of overall ability, the obese are coded as lazy and out of control (Bordo, 1993, 201). Murray (2008) concurs, as she argues that the cultural meanings attached to fat bodies, those about laziness and deviance, often go unquestioned (8). Empirical studies also support the notion that individuals hold negative opinions of overweight and obese individuals (cf. Crandall et al. 2001).

Meanwhile, other studies implore their readers to question the medical claims and the 'hype" about obesity, and to thus question the equation of obesity with ill-health. LeBesco argues against using medical and scientific discourses to explain fatness; rather, she would prefer to counter normative conceptions of embodiment by understanding fatness as an identity that revolts rather than disgusts (2004, 2). In her view, obesity is a socially constructed category, and a pathologised one at that. While LeBesco takes care in revising cultural meanings about fat, she "greatly underplays the negative health consequences of fatness, even from long-term, well-regarded medical studies" (Taub 2005, 678). Similarly, Murray's account describes how the medicalisation of fatness turns obesity into a disease, inspiring the public to take individual responsibility to tame this "moral failing [and] aesthetic affront" (2008a, 7). In her book *The 'Fat' Female Body* (2008b), she takes this issue up at length, paying special attention to how the obesity "epidemic" is construed, and the panic that follows it. Also helpful is her chapter on fat bodies as always already confessing their sins. Unlike LeBesco, however, Murray pays careful attention not to dismiss the importance of medical care, yet does strive "to stage a

challenge to medical discourse, which constitutes obesity, and to elucidate the power and authority of the medical voice in making some bodies intelligible as pathological and immoral, not simply to doctors, but to society more generally" (8). This balanced approach is one I aim to build upon in my own work.

Significantly, Saguy and Almeling (2008) highlight that media reports on medical studies overemphasise individual responsibility and dramatise the obesity epidemic. Likewise, they find that "science reporting informs lay understandings of health and risk, policy priorities, blame and responsibility, and normative understandings of acceptable and desirable bodies" (78). In related research, studies by Campos et al. (2006), Oliver (2006), and Flegal (2006) have taken up whether or not the term "epidemic" when used to describe obesity is appropriate. Campos et al. dispute the facts that: obesity is epidemic; that overweight and obesity are directly linked to increased mortality and ill-health; and that weight loss improves health. Moreover, they argue that there are social and political factors at work, namely connections to pharmaceutical and weight-loss companies, in keeping the panic about obesity alive and well (2006, 58). Oliver maintains that obesity has increased somewhat, but that this has not resulted in ill health. Rather, he maintains that the communication about obesity's epidemic status has been prolific. Flegal, while she does find the term epidemic to be problematic, still understands obesity to be on the increase, and alarmingly so; as such, she promotes understanding the health impact of such significant changes (2006, 73). These two studies bring to mind Saguy and Riley's article entitled "Weighing Both Sides: Morality, Mortality, and Framing Contests over Obesity" (2005), which presents the various positions that academics and activists typically take up in understanding obesity, and specifically,how epidemic and

risky obesity is. Generally, Saguy and Riley understand the matter to be highly controversial, and see fat acceptance camps and anti-obesity camps emerging out of the debate, all with varying levels of acceptance of the ideas of social construction and medical evidence. Thus, it can be said that researchers and activists passionately defend both positions, and I take this into account in my own research.

Several researchers posit that focusing on weight loss does not ameliorate the issue of "epidemic" obesity. Focusing on weight does not lead directly to the promotion of health but rather the promotion of dieting – and to a significant portion of the researchers, this is the wrong approach (Cogan 1999, 229). Cohen et al. (2005) argue that concentrating so intently on obesity, especially through public health campaigns, results in "not helping us address the broader social and economic issues that influence people's lives" (158). This leads to blaming individuals and does not lead to real improvements in overall health or even decreases in weight; in fact, this approach often leads to dieting and sometimes eating disorders.

**Thinness**

Research on the pursuit of thinness or the ideal thin body is central to the proposed thesis, and goes hand in hand with the previous theme of obesity. The 1990s were host to much scholarship in this area. I first take note of earlier scholars such as cultural critic Naomi Wolf (1990), and academics Sandra Bartky (1990), Susan Bordo (1993), and Joan Jacobs Brumberg (1997). But to clarify, my thesis will not rely on these interpretations uncritically. In fact, I also take up more recent critiques of their works, and most certainly entertain other more nuanced theories about embodiment.

Many feminist scholars argue that there exists a cultural impetus to be thin, and that rewards are granted to those who best approximate the ideal. Similarly, those who do not follow closely to this ideal face punishment. Naomi Wolf's *The Beauty Myth* (1990) is fundamental for understanding how women are unfairly subjected to high standards of beauty and thinness. In it, she claims that the desire to look beautiful pushes women towards dieting, developing eating disorders[12], and getting plastic surgery. Her scholarship has certainly inspired much popular interest in the topic, and as such, her influence cannot be minimised.

In academic discussions of ideal embodiment, one also cannot minimise the contributions of Bartky, Bordo, and Brumberg. "Foucault, Femininity, and the Modernization of Patriarchal Power" (Bartky 1990) uses the Foucauldian notion of docile bodies, and presents the specific ways in which women's bodies are made active, disciplined, and normalised. Bartky terms this disciplining of the female body "normative femininity." This type of regulation works to produce docile bodies in three ways: 1) regulation of body size, 2) control of motility, and 3) surface ornamentation. In such ways, women's bodies are made distinct from men's and women's status is rendered inferior to men's. Bordo, too, suggests that women must deal with the tyranny of slenderness; she suggests that the philosophical tradition of associating women more closely with the body than men makes women more apt to attempt to conquer the body

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[12] I have elected to use the term eating disorders in an effort to be more inclusive. While the texts I refer to may discuss anorexia specifically, I believe using solely this term minimises the seriousness of other less glamorous eating disorders such as bulimia, compulsive overeating disorder, eating disorder not otherwise specified, and orthorexia (whose sufferers are not always underweight). Without taking into account all types of disordered eating, one does not get the full extent to which these behaviors are problematic. The creation of other varieties of eating disorder (by psychiatrists) is certainly subject to critique, but I argue that all of them are indicative of a societal obsession with thinness.

through self-mastery. She argues that women's desires have been seen as excessive and dangerous, and that their appetites and desires need to be controlled. Along the same lines, Brumberg's understanding of women's dieting and comportment in their historical context is especially interesting. First, she makes clear that all bodies and identities must be worked on and constantly transformed. Since ideals are constantly shifting and are by their very nature unattainable, people always fail in their approximation of them. People's constant attempts to attain the ideal, and their subsequent failures to do so, reaffirm the ideal.

Brumberg links the rise of women's social and political power – something which also allowed women to freely and publicly display their bodies – with the diminishing size of the feminine aesthetic. This idea is one I connect to pregnant embodiment. Specifically, I understand pregnant women's increasing visibility (freely exposing their bodies and not wearing infantilising fashions) as linked to the diminishing size of the pregnant aesthetic. Brumberg also makes clear that public space is actually men's space, and thus, a more masculine, thin shape is required to fit into it. Pregnancy, usually thought of as private, does not easily fit into the public sphere. An essential contribution Brumberg makes is in asserting that women receive social rewards for their conformity to the rules of embodiment. What these theorists illustrate is that "normal" women are invested in managing their bodies, and some women take body management to pathological levels. Therefore, the existence of eating disorders should not be theorised outside a cultural context where normal women are invested in having bodies of a certain shape and size. What I should keep in view in my analysis of pregnant embodiment is that pregnant women are likely subject to many of the same regulations that non-pregnant

women are. Much in the way that self-discipline can lead to eating disorders; it can be hypothesised that a link exists between disciplinary regimes in pregnancy and women's oppression vis-à-vis their embodiment; in fact, women may feel anxiety about their inability to attain the ideal pregnant body.

In some ways, the aforementioned debates about ideal embodiment assume that women are more susceptible to regulation, and are therefore, naturally inferior. For instance, Bordo argues that most women are negatively affected by representations of thin women in popular culture, and that this results in women's "total submission" to these ideals (Bordo 1993, 201). Feminist theorists such as Elizabeth Grosz (1994), Moira Gatens (1996), Judith Butler (1993), and others look at how the representation of women's bodies as frail, unruly, and vulnerable is problematic because it takes away their power and agency, considering these representations necessarily assumes female bodies as inferior (Grosz 1994, 13). They focus on how the body is represented and created, and refrain from seeing the body as biologically given (Grosz 1994, 18). Gatens argues that in order to halt the devaluing of the body (and therefore, women), we must "challenge...the masculine nature of representations of the human body" (Gatens 1996, 52). Assuming that "the body...is interwoven with and constitutive of systems of meaning, signification, and representation" (Grosz 1994, 18), the proposed research interrogates the signs and symbols associated with femininity, pregnancy and the body. Accordingly, this suggests that the pregnant woman's regulation is a symptom of masculine representational logic and that she will only be liberated by "realistic, non-repressive, and less regulative form[s] of representation" (Bray and Colebrook 1998, 35).

Bray and Colebrook (1998) take up the example of anorexia as a social disease. One theory, as suggested by Bordo, is that it is caused by the inability to live up to societal ideals and representations. However, Bray and Colebrook hypothesise that this assumption actually reinforces the passivity of the body (35), and therefore, reinforces inferior social status. They use the work of Deleuze to argue that there is nothing inherently normal about a body, so there is no correct representation to be had (50); rather, the body is an "event of expression" (36).

**An aside regarding the body as an event of expression**

In some ways, I am reticent to think of the body solely as "an event of expression," or at least, I think that certain bodily expressions might indeed be problematic. I am convinced that the body is discursively produced and do not believe the body to have a "natural" or "given" state. Yet, in the case of the severely ill anorectic, I worry about the possibility of seeing this as just another embodied possibility. Furthermore, would not the possibility of imminent death be problematic to the notion that the body is completely discursively created?

Certainly, researchers who study posthumanism and readers of science fiction could both argue that our future does not necessarily include death or a biological body (cf. Stross 2007) – at least not a life encumbered by either. To those of us living in the present, this seems an absurdity. Yet as one of those readers of science fiction, I am well aware of the ways in which those things that seem to belong to the distant future are really well within our grasp. Perhaps my reluctance regarding theories of becoming and expression, and my reticence to fully believe that there really is "no there there" will

dissolve as those very limits of what a human body is and what it can withstand are pushed. It may be, after all, that my inability to let go of the notion that something about the body is real is the result of my own historical situatedness and my belief about what is humanly possible.

Ultimately, I understand notions of becoming, flows, and transcendence to be compelling and theoretically useful, yet in the same instance, I see the limitations of these notions. The question that emerges to the fore in my conceptualisation of health, illness, and the body is one that asks after the seriousness and precariousness of the lives of the people who feel deeply troubled by or at odds with their bodies, be it through a mental disorder which has physical effects, a serious illness such as cancer, an eating disorder based on patriarchal representations of the ideal body, or the social construction of a pathological or sick body. Admittedly, this can be critiqued as a Cartesian way of problematising embodiment. Even so, it begs the question of whether or not a theory of the body as an event of expression is particularly helpful to those who have problems with their bodies; whether or not the body or a problem with the body is given or discursively created arguably makes little difference to those sufferers because those discursive formations have "real" effects.

Considering my stance as an activist, I would like to keep experience and reality of people firmly in reach (cf. Lafrance 2007), while still maintaining a theoretical and analytic project that looks at the underpinings of this "reality". Likewise, I consider Grosz's (1994) suggestions about undertaking an analysis of the body vital, especially since she takes great care to account for the materiality of the body without considering this materiality the base that culture rests upon. That said, she privileges neither natural

nor cultural explanations of the body, but makes theoretical space for both. While she aruges vociferously against the supremacy of biological explanations of the body, she is equally critical of any social constructionist approach which "takes on all the immutable, fixed characteristics attributed to the natural order" (21). What is most compelling about her argument is her refutation of all binary relationships, especially that between nature and culture, and her suggestion that the body always figures somewhere inbetween, being neither one or the other, but both (23).

**Reflecting on the status of the obese body in medical/scientific discourse**

To be clear, the purpose of this thesis is not to argue that the science about overweight, obesity, and pregnancy weight gain is wrong or right. I do not want to argue scientific claims emerge "out of thin air." I acknowledge that the body is a product of both biological realities and culture, and that these two supposedly dichotomous categories of nature/culture actually work to inform each other. I also understand science similarly; the objective facts cannot be distinguished from the influence of the social. Or put another way, there is a "complex entanglement of medical science and popular perceptions of the body...these discrete arenas are always infected by each other" (Murray 2008b, 35). However bound up biology is with culture, I suggest, following Elizabeth Grosz (1994), that we cannot reduce explanations of the body to culture alone. Rather I assert that instead of disputing the biological nature of the body by calling the body entirely culturally produced, it is vital to understand the body as occupying a place between nature and culture, necessarily disputing the binary (Grosz 1994, 24). I also take inspiration from Anne Fausto-Sterling (2005) on this point, who argues that we "must accept the body as simultaneously composed of genes, hormones, cells, and organs - all

of which influence health and behaviour - and of culture and history (1495). I accept certain aspects of health and biology as more "factual," i.e., obesity increases the likelihood of certain illnesses such as diabetes, though I attempt to do so without reducing the body to biology. I argue that this is the most productive engagement one can have with the medical community and those who are concerned with their health.

In light of this, it makes little sense to critique scientists as the sole constructors of obesity as a health problem as some might, nor should I minimise the data that clarifies the risks associated with pregnancy weight gain, adequate or inadequate. Personally, I do understand obesity as a health problem which could be a result of many factors, one of which could be income disparity; if this were the case, a way of alleviating ill health would necessitate looking more closely at income disparity. The answer, in my view, is not to argue away the concepts of obesity and health as completely socially constructed, but rather to understand the topic from a nuanced perspective, which interrogates who exactly is unhealthy and how this unhealthiness is framed. Moreover, I argue that the focus should be on individuals' experience of healthiness or unhealthiness, assuming that their feelings about their own health and health problems are significant. After all, being unhealthy can be debilitating, stressful, anxiety-inducing, and expensive (especially in the American context). So I maintain that the obligation towards healthiness is a problem, but that healthiness in itself is a multifaceted issue, and that those who have good health are privileged. Even though the concept of "unhealthy" is constituted through a variety of discourses, it does not mean that the negative effects of ill health are simply culturally produced; in fact, I would argue that many of the effects of ill health are objectively bad, like death, wasting, pain, depression, and so forth. Certainly, I accept that culture frames

these debates, even those about death and pain, as real as they are or seem. Suffice it to say, this debate about the language and constitution of things we deem "real" is contentious; from my point of view, when trying to understand the "real," I keep notions of discourse firmly in view, and likewise, when analysing "discourse," I keep notions of what exists within reach. Giving credence to individuals' experience of real things is crucial, especially in light of my extensive critique of the medical/scientific literature for essentially ignoring experience.

I maintain that medical/scientific and social "perceptions cannot remain separate, and because of this, they constantly draw on each other for power, authority, and veracity" (Murray 2008b, 35). The constant conflation of overweight and ill health, assumptions (explicit and implicit) about what overweight and obese people are like, assertions that the overweight and obese constitute a monstrous burden on society, and connections of certain populations to "pathological" behaviours and bad health evident in the articles themselves, suggest a strong connection between science and dominant cultural conceptions of the obesity epidemic. It becomes clear to me that Murray's (2008b) contention that medical beliefs about obesity become conflated with "dominant cultural (and coextensively, moral) attitudes about fatness" (27) is apt. That is to say, while there are risks associated with being overweight and obese, the societal disgust with fatness is palpable, and has less to do with the notion that obesity is a curable disease (about which there is no medical consensus), and more to do with the fact that obesity is a sign of weakness that inspires fear (cf. Crandall et al. 2001).

**Theorising pregnancy and pregnant embodiment**

One study that most closely approximates my own interests comes from Neiterman (2007), who also argues that a new pregnancy weight gain discourse is emerging. The study is an intriguing analysis of pregnant embodiment. She insists "that in addition to various forms of social control that women are exposed to during pregnancy, a discourse on the pregnant body weight has developed" (1). She suggests that the reason for this is the increased visibility of pregnant celebrities and the creation of a market for pregnancy goods. Neiterman also maintains that pregnancy's new public status leads "to the absorption of the pregnant body into the contemporary aesthetic image of femininity, and one that is completely divorced from [the] maternal body" (1). Earle (2003) argues that women do in fact worry about weight and attractiveness throughout pregnancy. Her claims are slightly different than Neiterman's, but they both suggest that pregnant women do have similar desires with respect to embodiment as they did when they were not pregnant. These are points worth considering, however, Neiterman's analysis concentrates on different theories and data sets than I do. Additionally, the analysis places an emphasis on celebrity and media, while omitting what I argue are more significant issues such as medical authority. Subjectively, I find discourse analysis of medical/scientific texts to be exremely compelling, so it is not surprising that I would adopt this method as opposed to media analysis.

In my thesis, I complicate Neiterman's conclusions in another way. If my suspicion is correct, namely that medical discourse creates an embodied feminine ideal as a requirement of motherhood, then this new discourse about pregnancy weight gain is explicitly linked to the notion of a good maternal body. Moreover, I argue for a reading

that less rigidly separates the ideal feminine aesthetic from maternity per se because women face pressure to fit the feminine aesthetic and to be good maternal subjects at once. Somewhat related to Neiterman's thesis on celebrity, Tyler (2001) seeks to understand the significance of Annie Leibovitz's classic photo of a pregnant Demi Moore, especially as the first photo of its kind. Tyler argues that prior to this, the pregnant body was not visible, and that it was actually taboo until very recently. Notably, she discusses the significance of this for the subjectivity of pregnant women – she argues that subjectivity is much more complex than our typical understanding of it, which emphasises individuality (72).

Several authors understand pregnancy to be fraught with a barrage of regulations, which are in turn connected to notions of good and bad mothering. *Mass Hysteria: Medicine, Culture and Mother's Bodies* (2005) by Rebecca Kukla is by far the most influential text in this group. In it, she recounts historical as well as modern regulations concerning pregnancy. She argues that these regulations and classifications are most stringent and numerous in pregnancy, and observes that the medical community rewrites these recommendations almost annually (136). She posits that this scrutiny is due to the perceived vulnerability and impurity of women's bodies (6), and similarly, that pregnant women are subject to public spectacle because of the societal impetus to protect the "fetus from the corrupting influence" (23) of its mother. In such a way, women are made completely responsible for the health and well-being of *men's* children, and are held accountable for anything less than fetal perfection (126). Similarly, Markens et al. (1997) argue that the responsibility for fetal outcomes has increasingly been thrust upon the mother. Especially relevant for this thesis are two issues the researchers bring up: 1) the

medical management of pregnancy, and 2) responsible dietary practice as duty to and right of the fetus. These are two issues which I see as central to the current explosion of discourse about pregnancy weight gain. On a closely related noted, Bell et al. (2009) present an important critical public health study that is very close to what I am analysing. They discuss moral panic regarding women's parenting of their children, specifically in reference to fetal alcohol syndrome, secondhand smoke, and childhood overnutrition. I map this framework onto weight gain in pregnancy, which is construed as fetal overfeeding. Their understanding of women as scapegoats for social problems such as obesity is particularly compelling.

While these accounts focus on the negative aspects of pregnancy, it is not fair to say that the experience of pregnancy is entirely unpleasant or a situation in which women are unhappy. Earle's (2003) interviews with pregnant women illustrate how varied women's reactions to their changing bodies are, and that they both resist and are oppressed by pregnancy regulations and the ideal feminine form. Similarly, Bailey's (2001) interviews with women focus on gender as embodied, and as such, bodily changes as they occur in pregnancy "have implications for gendered identity" (111). She is also privy to a variety of opinions about the difficulty, ease, and ambivalence women have in regards to pregnancy. Moreover, she sees that the way women do gender – her interviews illustrate the specificity of pregnant women *doing* gender – "offers both endless pressures on women to conform to the dominant conception but also unceasing opportunities for transgression" (128).

Informed by this literature on pregnancy, I begin with the assumption that there is something about our embodiment that profoundly impacts how we exist in society. In

turn, that embodiment is always affected by that which is outside of us – culture, institutions, relationships, and the like. As such, the theoretical understanding I keep in view for my research is the argument that women's behavior is affected by both their embodiment in pregnancy and the gender roles they have internalised by living in this culture (Markens et al. 1997, 368). However, in my thesis I argue that pregnant women are also strongly influenced by medical authorities when deciding what and how to eat and how much to weigh. Very much in agreement with this line of reasoning, Markens et al. (1997) argue that "pregnant women's dietary strategies are very much a product of the strong role of medical institutions and biomedicine in [...]society" (368).

**Mothering, fetal rights and maternal-fetal conflict**

Sharon Hays' *The Cultural Contradictions of Motherhood* (1996) is important for this thesis, especially her concept of "intensive mothering". This is the notion that one must take an approach to parenting that is "child-centered, expert-guided, emotionally-absorbing, labour-intensive, and financially expensive. And [furthermore,] it is the individual mother who is ultimately responsible for assuring that such methods are used" (122). Through this cultural framework, mothers are primarily responsible for children, and should parent without thought to their own desires or needs. On a related note, Lorber (1981) argues that women adhere to such a system of mothering because of the social rewards it brings. Benjamin's (1988) work on mothering is also helpful here because she notes that mothers transmit to their daughters a sense of self-sacrifice. It should not be surprising, then, that women actively turn to intensive mothering as their parenting strategy. In terms of my own thesis, I extend this analysis to pregnancy, where I argue, following Kukla, that intensive mothering and self-sacrifice begin in pregnancy,

and have much to do with the social rewards one receives for acting in accordance with regulative norms.

When analysing the responsibility of mothers to developing fetuses, one must contend with the issue of fetal rights and their impact on both women's right to choose and their bodily autonomy. The notion of the fetus' right to future health is a presumption that exists in many scientific studies. The belief that pregnant women are responsible for their children when they are not yet born points to our investment in the idea that fetuses have personhood and are deserving of rights that women must respect. In a sense, women's decisions in pregnancy - including what they consume - are not wholly their own; they must do what is best for the fetus, as decided by medical professionals.

It can be argued however, that most pregnant women are concerned with the health of their fetus, and do not envision themselves in conflict with the fetus (of course, this only holds true for women who want to continue with their pregnancies). That is, they are equally interested in the well-being of both themselves and the fetus. Much as Colb (2007) argues, I believe that it is "crucial not to confuse the freedom of women to exercise agency over their own bodies with the failure to value her developing child" (1). This may not, however, be how the medical establishment or other authorities make sense of the situation. In fact, sociologists, medical professionals and lawyers have expressed concern about the issue of maternal-fetal conflict (Sen and Snow 1994, Ehrenreich 2008). Discussions of maternal-fetal conflict in medical circles center around the notion that a pregnant woman and her fetus could conceivably have conflicting needs, and suggest how to deal with these issues in an ethical manner. Much of this is premised on the idea that a pregnant woman may refuse a procedure (that is relatively safe for her) that could

save the life or her child, such as refusing a Cesarean section. While some may view the issue as a conflict between equal maternal and fetal rights, some scholars understand women's rights to trump fetuses' rights (cf. Scott 2002), and still, other scholars would like to complicate this notion and understand women and their fetuses as intimately and inexorably connected (cf. Markens et al. 1997, Cherry 1999, Boonin 2004, Colb 2007). In addition, the issues of alcohol, drug-use, and diet figure into this debate (Markens et al. 1997) and concern the fetus' entitlements while *in utero*.

Another well-known issue in reproductive politics is that at the same time that some women fight for the right to have abortions, poor and minority women fight to keep their pregnancies and raise their children. Likewise, they have concerns about birth control and sterilisation being forced upon them by government and medical authorities (Ehrenreich 2008). Minority women are subject to a different type of scrutiny, but like all other mothers, must contend with medical authorities when pregnant.

In this chapter, I reviewed literature vital to undertaking an analysis of pregnancy weight gain. Understanding both the literature on obesity (critical or otherwise) and ideal embodiment is critical to understanding a variety of issues prevalent in the medical/scientific discourse because gestational weight gain cannot be divorced from a culture that is obsessed with weight. Nonetheless, the literature on pregnant embodiment, motherhood, and responsibility suggest a slightly different relationship to gestational weight gain exists. I also clarified the significance of maternal-fetal conflict in this thesis.

## Chapter V. Pregnancy weight gain: The dominant discourse shifts

Over roughly the last century, scientific inquiry about how much weight women should gain in pregnancy has been contentious. Clinical recommendations have undergone significant changes to reflect the accumulation of new evidence. However, I argue that these shifts do not simply represent a neat, teleological movement towards newer and better scientific evidence, evidence which will go on to underscore the rewriting and redress of clinical recommendations. There certainly exists a heterogeneity of opinion on the risks and benefits of appropriate ranges of weight gain, making the trajectory of this discourse more complex than it may appear at first glance. Generally, however, the dominant discourse regarding pregnancy weight gain does shift between 1990 to 2009.

Thus, in this first substantive chapter, I consider the first two research questions put forth in the introduction: How has scientific discourse helped create an ideal body and weight for pregnant women, and how has that ideal shifted over time? To begin to answer these questions, I offer a short history and description of the data for context, laying out the groundwork for a Foucauldian analysis particularly of issues of weight, and being especially cognisant of themes of risk and healthiness. These ideas are developed further in the following substantive chapters, which focus on such issues as normalisation, responsibilisation, and strategies of public health, among others. Though I argue that they can be viewed as distinct aspects of the same imperative of governmentality, I do not wish to minimise their overall coherence, and how closely the themes are linked to one another.

Through this chapter, I also illustrate the connection of the medical/scientific articles to a (Western) culture that is increasingly hostile to overweight and obesity.

Considering that the prevention of public health ills such as obesity are considered paramount it should not be surprising that research advocating for intervention of obesity *in utero* - prevention par excellence - is impassioned and intense. This chapter contributes to an understanding of the relationships between the medical/scientific research to dominant cultural conceptions of weight, especially in how they inform and are informed by them. I argue, in the vein of Bell et al. (2009), that scientific studies about pregnancy weight gain, especially those emerging from public health, are indicative of a moral panic with regards to obesity. This is especially true for particular types of bodies, namely young, poor, African American bodies. Significantly, I underscore the importance of "race", gender, age and class in the discussion, as the scientific literature cites race (or sometimes ethnicity), class, and age as key or confounding variables in understanding weight gain and obesity. Interestingly and perhaps obviously, men are rendered insignificant or unproblematic in all but one of the medical articles (Whitaker 2007). Evidently, this is related to the notion that women are held responsible for their children's health and well-being more so than men are. Paradoxically, obesity is construed as both a universal issue and an issue especially prevalent in women. I suspect that it is in those moments in which the body appears excessive, or exceeds normative standards, that the normative ideal is reasserted, and our desire to contain and delimit the body is heightened. I explore this in the next chapter.

I begin with a brief history of the scientific debate on pregnancy weight gain. I then move to describing the data, which I have divided thematically and into (approximate) time periods. From 1990 to 1995, I observe that the literature supports the notion that low weight gain in pregnancy is risky. In the mid 1990s, there is a shift

towards recognising the balance of risks (low weight gains versus excessive weight gain). From 2000 to approximately 2006, risks associated with excessive weight gain are privileged over the risk of insufficient weight or even a balance of insufficient and excessive gains. The articles from 2006 and on represent a significant departure from the early studies in that they are focused on the programming of childhood obesity via pregnancy weight gain. This description of the data is followed by its analysis in the context of a wider scholarship on obesity in general. I take up how discourse creates an ideal for women in pregnancy. I also analyse the so-called "obesity epidemic". I finish with a discussion of pregnancy embodiment.

**Pregnancy weight gain: History of the debate**

In "Pregnancy weight gain: still controversial," Abrams et al. (2000) examine the 1990 Institute Of Medicine (IOM) guidelines for pregnancy weight gain via meta-analysis of select studies. In their aim to ascertain the veracity of these guidelines - given that they "were widely adopted but not universally accepted" (1233S) - they maintain that the criticism faced by the IOM is in keeping with the history of studies of pregnancy weight gain this century.

Until the 1970s, obstetricians aimed to curb gestational weight gain to prevent toxaemia, difficulty in labour, and maternal obesity. In 1966, efforts were made to reduce average weight gain to 25 lbs, or in the best case scenario, 15 lbs. Despite the admitted difficulty in getting patients to achieve such a limited weight gain, obstetricians were convinced that this minimised both major and minor risks, and that these restrictions were necessary for maternal and fetal health. However, in the 1960s, researchers began to notice an increase in infant mortality, morbidity, and disability caused by low birth

weights. In 1970, obstetricians hypothesised that restricting gestational weight was the cause of low birth weight. This led them to liberalise previous recommendations, allowing women to gain more during the course of their pregnancies. Women generally took their obstetricians' advice, and birth weights improved; this became the empirical basis for future recommendations. Scientific studies about pregnancy weight gain and its relation to maternal and fetal outcomes, especially infant birth weight, soon flourished. This proved to be the beginning of a growing body of evidence illustrating that large infants are the healthiest. Gaining adequately was understood as vitally contributing to fetal growth and health, and thus, recommendations promoting greater gestational weight gain were thought to minimise risks. It should be noted that fears regarding the increased risk of toxaemia proved baseless; however, concerns related to difficulty in labour and obesity persist. (Abrams et al. 2000, 1233S).

Considering the breadth of empirical evidence, the IOM put out a new set of recommendations in 1990:

**1990 Institute of Medicine (IOM) Guidelines**

Table 2: 1990 pregnancy weight gain guidelines

| BMI | Recommended total gain (kg, *lb*)* |
|---|---|
| Low (BMI < 19.8) | 12.5-18, *28-40* |
| Normal (BMI 19.8 - 26.0) | 11.5-16, *25-35* |
| Overweight (BMI 26.0 - 29.0) | 7-11.5, *15-25* |
| Obese (BMI > 29) | at least 6, *at least 13* |

*Adolescents and black women should strive for the upper end of the recommended range (Institute of Medicine table taken from Abrams et al. (2000))

These recommendations were novel for two reasons. First, the IOM acknowledged that a range of weight gains was acceptable to produce good pregnancy outcomes. Second, the IOM created different ranges depending on pre-pregnancy weight. Simply, underweight women were encouraged to gain more, normal women to gain moderately, and overweight and obese women to gain less, but to gain, nonetheless. Likewise, adolescents and African American women were understood as having a different set of requirements. In the early 1990s, both adolescents and African American women were said to be at risk for having small-for-gestational-age (SGA) infants, and lower gains on the whole; thus, the IOM thought it prudent to recommend that these "higher risk" groups gain at the upper ends of the acceptable weight range.

After issuing the 1990 guidelines, the IOM committee solicited research on the effects of their recommendations, especially on women's health (Abrams et al. 2000). Considering both the change in guidelines and their request, researchers with various hypotheses responded to the IOM. As the major organisation implementing recommendations, which have significant and widespread consequences, the IOM is an authority, and thus the object of both praise and criticism. Debate began about the following issues: the veracity of the claim that greater weight gains positively impact birth outcomes themselves; the positive outcomes of this change in recommendations; and lastly, the negative outcomes. Many studies went on to validate the claims of the 1990 guidelines, while others refuted them.

Significantly, Abrams (1994) argued that "ideal weight gain...cannot be determined from research studies," (526), and suggested that women should be encouraged to eat to appetite (519). Moreover, she maintained that the IOM guidelines

could not be utilised as a strict guide. Considering this, the way the story unfolds, especially from the 2000s on, is intriguing because at that point the studies take on an alarmist tone concerning gains in excess of the guidelines. It is interesting that some of the researchers consider weight gains outside of the guidelines entirely normal, while others are keen to have all women follow a set pattern. I now move onto a chronological description of the data itself.

**Low gains are risky; high gains are healthy (1990-1995)**

Between approximately 1990 and 1995, the vast majority of the studies considered the IOM guidelines to be ideal, and the overarching concern was about inadequate gain - that is, gains that did not meet the minimum as set by the IOM. Women were warned to gain adequately in gestation, largely because of increased risk of suboptimal maternal and fetal outcomes that are associated with low gains.

Even in the morbidly obese, obstetricians were worried about failure to gain, and while inadequate gains had no discernible impact on fetal health (only in the case of the morbidly obese), researchers believed this could be damaging to the mother's health (Rainer et al. 1990). While Ratner et al. (1991) expressed concern about obesity in pregnancy causing complications, they advocated for weight loss regimens to be started only after pregnancy. They urged against dieting in pregnancy because it could cause ketosis (a process in which the body burns fat cells as opposed to glycogen, the dangers of which are debatable), and argued for good nutritional intake over any attempts at restricting calories. Thus, they recognised that weight loss accomplished through dieting could be unhealthy. In fact, Abrams (1994) argued that the IOM was actively discouraging restrictive dieting in obese women, and Taffel et al. (1993) argued that

cultural beliefs led obese women to avoid weight gain, and that obese women required correct, medical information about proper weight gain, not misguided beliefs, to guide their behaviours.

While studies from the 1970s and 1980s hypothesised that increased infant mortality was a result of insufficient birth weight, many of the studies after 1990 elaborated on birth weight's connection to gestational weight gain, and therefore lent support to the IOM guidelines. Johnston (1991) concurred that gestational weight gain was directly linked to infant birth weight. Low infant birth weight was linked to increased risk of preterm delivery, growth retardation (Johnston and Kandell 1992) and perinatal death (Hickey et al. 1990, 1992).

The studies also discussed which populations were at risk of giving birth to small for gestational age (SGA) infants. African American women were the subject of many of the studies, as were adolescents and individuals occupying lower socioeconomic status. While the research on adolescence was more heterogeneous, the scientists were much more clear in their assessment of African American women's risk, namely that these women did incur greater risks. However, the reason for this is admittedly unknown to them.

For research throughout the dataset, African American women were an enigma. In this time period in particular, this group of women was said to have had inadequate or low pregnancy weight gains, and thus had SGA infants; yet, they also tended to retain pregnancy weight postpartum (Hickey et al. 1990; Hickey et al. 1992; Abrams 1993; Hickey et al 1993; Keppel and Taffel 1993; Parker and Abrams 1993; Taffel et al. 1993; Hickey et al. 1995). Interestingly, when studies compared African American women with

white women, they found that even when African American women had sufficient weight gain, they tended to have SGA infants. African American women were thus constituted as at risk for inadequate weight gain, yet also constituted as at risk when their weight gains were "normal." Taking this into account, the research argued for them to gain in accordance with the IOM guidelines, yet with the caveat of striving for the high end of the range. Significantly, the studies maintained that their weight retention was unrelated to excessive gains. The reasons for black women's lower gains and SGA infants is unknown, which is consistent through the entire time period. Even when African American woman were later seen as high risk because of excessive gains and obesity, scientists were still unsure of the underlying reasons for this.

While the majority of studies reflected a general consensus that women should strive for ranges as prescribed by the IOM, researchers were not without reservations, as they worried about risks associated with weight gain, such as more c-sections (Abrams and Parker 1990; Ratner 1991; Parker and Abrams 1992), and weight retention postpartum (Keppel and Taffel 1993; McAnarney and Stevens-Simon 1993; Abrams 1993; Parker and Abrams 1993). Though c-sections were typically considered risky and undesirable, Parker and Abrams (1992) suggested that whether or not c-sections were suboptimal birth outcomes was debatable, especially considering the risk low birth weight presented. It was generally noted that women who gained within the IOM recommendations had no risk of weight retention (with the exception of African American women). One study even suggested that postpartum weight retention of five to 10 pounds did not increase health risks (Parker and Abrams 1993). Interestingly, Lederman (1993) argued that the notion of pregnancy causing obesity was widespread,

and as such, laypeople and experts alike were worried that the liberalisation of the guidelines would automatically increase the risk of obesity. She argued that pregnancy did not result in future obesity, even though this idea had great purchase among the public.

The concern regarding c-section and weight retention grew in significance over time, and both became foci for researchers. However, the interest in women's own concerns about weight is less prominent through the rest of the literature. While some researchers - in particular Barbara Abrams - addressed the possibility that women had their own concerns, future articles do not illustrate curiosity about women's experience with weight gain, nor do they lend scientific credibility to the notion that these experiences are valid sources of empirical evidence. In an era of evidence-based medicine - when only the certain types of research are considered legitimate - this is not surprising (Holmes et al. 2006). However, concerns from Abrams suggest that "less scientific" research is vital to providing a fuller account of these events.

Despite the chorus of support, there were other researchers who were reluctant to find any merit in the IOM guidelines. Johnston et al. (1992) were early voices of dissent, claiming that the "eat to appetite" attitude towards pregnancy weight management was deeply flawed. Foreshadowing later studies, they argued that the new guidelines were excessive, and could lead to increased risk of complications such as macrosomia[13], labour abnormalities, and unscheduled c-sections. Likewise, they suggested that low birth weight was not particularly dangerous, nor did they believe that greater gains would protect against it. In sum, they argued that these recommendations were not beneficial to

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[13] The term macrosomia is used interchangeably with large for gestational age babies (LGA)

women and infants, and that greater gains would incur greater costs, hospital and otherwise. Naeye (1990) specifically studied obese women in pregnancy, and his article illustrated a level of doubt in keeping with the study mentioned above. Naeye argued that thin mothers had the best birth outcomes; in his view, thin women avoided the complications that obese women had, such as increased risk for stillbirth, birth trauma related to macrosomia and congenital malformations. Other early dissenters - though they straddle the time periods I delineate - are Johnston and Yancey (1996) who argued that the IOM recommendations would prove more harmful than beneficial because they could cause weight retention. With striking resemblance to studies in the late 2000s, Johnston and Yancey argue that fetal macrosomia could actually predispose the infant to childhood and adult obesity. Moreover, they argued that the IOM had no evidence-based claims to support their guidelines, since the study of pregnancy, by its very nature, is not amenable to randomised controlled trials.

**Balancing risks; striving for moderation (1995-2000)**

While much of the research emerging out of the latter half of the 1990s still held the IOM recommendations in high regard, I note that there was a subtle, yet significant change in tone. Namely, I observed a trend towards statements that were more explicitly normative. Take for instance Scholl et al. (2006) who frame pregnancy as a "culprit." The language and content of the articles illustrated that inadequate weight gain was a problem, yet they also focused on the risks of both inadequate and excessive gains. The emphasis changed from one which prioritised adequate gains above all else to looking more closely at the negative effects brought on by both inadequate and excessive gestational weight gain. In addition to this, I observe a tendency towards showing concern for women's experience

with pregnancy weight gain, which cannot be said of the more recent studies. Similar to previous studies, researchers still worried about the high risks posed by low gains, especially the risks African American women face, and as such vehemently asserted the importance of weight gain and the IOM recommendations (Carmichael and Abrams 1997; Hickey et al. 1997a; Hickey et al. 1997b; Schieve et al. 1999; Abrams et al. 2000; Schieve et al. 2000). Authors also questioned the use of weight alone as an adequate measure of fetal health, and instead suggested a more holistic approach which looked at what caused low weight gains or other measures of pregnancy health (Carmichael et al. 1997; Abrams et al. 2000; Lederman 2001). Along with the main shift - prioritisation of balancing risks of inadequate and excessive gains - I observe that researchers addressed issues of advice and helping women attain gains within the IOM guidelines. Interestingly, the threat of epidemic obesity and the fetal programming hypothesis loom on the horizon, but I suggest neither come to prominence until approximately 2001.

On the issue of balancing risks, Purfield and Morin (1995) maintained that inadequate gains posed risk of suboptimal fetal outcomes, but equally emphasised that women with normal pre-pregnancy BMI gaining excessive pregnancy weight (as per the IOM guidelines) had longer second stage labour and higher rates of operative deliveries, namely vacuum extractions and c-sections (a concern echoed by Shepard et al. 1999). The question of balancing optimal fetal weight with optimal maternal health also came to the fore in these articles because of evidence that excess weight gain led to weight retention (Scholl et al. 1995; Muscati et al. 1996; Luke et al 1996; Johnston and Yancey 1996; Feig and Naylor 1998; Gunderson and Abrams 1999; Gunderson et al. 2000). Luke et al. (1996) insisted that neither inadequate nor excessive gains were ideal, yet they

argued that obstetricians should be wary of prescribing weight gains simply for the sake of it because "beyond a certain level of weight gain, there is a point of diminishing returns (increase in birthweight) at the expense of increasing maternal postpartum obesity for the woman who has gained excessively" (168). Adding to the literature that focused on balance of risks, Schieve et al. (1999) argued that both low and high gains put pregnant women at risk for going into preterm labour, an outcome strongly linked to infant mortality.

Similarly, the articles began to interrogate the lack of an upper limit in the weight recommendation for obese women, and questioned how obstetricians should properly counsel their obese patients in pregnancy (Cogswell et al. 1995; Edwards et al. 1996; Ogunyemi et al. 1998; Bianco et al. 1998; Bracero and Byrne 1998), concerns which eventually resulted in setting a limit by the IOM in 2009. I suggest that in looking back at the data, this is an intermediate step towards more recent articles which are almost all concerned with the possibility of excess weight gain or the negative consequences for the future weight status of mother and child.

Between 1996 and 2000, there were still authors interested in women's experiences in pregnancy. Gundersen and Abrams (1999) argued that women were "universally concerned" (261) about pregnancy weight retention, but posited that the risk of weight retention would be insignificant for most women. Additionally, Carmichael et al (1997) expressed concerns about how obstetricians should discuss weight gain with their patients. They argued that patterns of pregnancy weight gain were highly variable, and thus maintained that "many questions remain about the utility of monitoring weight gain, the most appropriate standard to use, and [they questioned which] message should

be given to women whose gain falls outside the recommended range" (1988). Likewise, Abrams et al. (2000) concurred that weight gain was not a good diagnostic or screening tool, nor were there clinical trials (evidence based medicine) of weight gain or interventions on which to base protocols. Considering this, weight gain in pregnancy is a complex issue, and for the researchers who gave thought to women's experience, this posed the obstetrician with the difficult task of managing women's weight without any real "standards" for normal weight gain and interventions to promote normal weight gain. Abrams et al. (2000) made the valuable observation that " [g]iven the sensitivity of Western women to weight and body-image issues, we need to discover and validate experimentally effective and thoughtful interventions to support women's nutritional and other needs during pregnancy" (1240S). They likewise argued that since few studies on the effects of measuring women's weight existed, obstetricians did not know if this practice had unintended negative consequences. This concern, in particular, was not addressed by the later data, and will be elaborated upon in the analysis.

In publishing their 1995 study, Scholl et al. were the first to address the issue of overweight and obesity as a public health problem, and obesity as a chronic disease. They were among the first to ascertain the connection of women's weight gain in pregnancy to public health concerns. They argued that "[o]verweight and obesity are major public health problems in the United States [and that] [m]ore women than men are affected, and among women, risk is substantially greater for minorities" (426). However, it should be noted that Scholl et al. represented a different approach from later researchers because they still privileged balance, and considered weight gain to be vital to optimal outcomes. They argued that "the risk of impaired fetal growth and gestation duration associated with

an inadequate weight gain may need to be balanced against the potential risk of maternal overweight and obesity related to excessive gain" (423). The concern expressed in this article is what the majority of later studies will shift their focus to. However, later studies paid less attention to the issue of inadequate weight gain, as the threat of excessive weight gain became ever present.

Another article which foreshadowed the nature of future debate came form Whitaker and Dietz (1998), who discussed the fetal programming thesis. They were the first of this dataset to discuss the connection of women's weight and health to the risk of obesity in the child. While they argued that no single mechanism accounted for fetal programming of adult weight, they argued that "fatness at birth and in later life are mediated by alterations in the prenatal environment caused by maternal diabetes, obesity, and pregnancy weight gain" (768). These issues were at the core of the shift in discourse surrounding pregnancy weight gain, a shift which is made more explicit in the sections below.

**Urgency surrounding excess weight gain (2001-2006)**

From approximately 2001 to 2006, there is a significant shift towards understanding excess weight gain as risky to maternal and fetal health, especially in causing overweight and obesity in mothers and their children. At that point in time, the language surrounding obesity changed. Overweight and obesity were discussed in terms of their epidemic status; the language in the literature illustrated the growing concern over this social problem.

In my analysis, Gunderson et al. (2000) figured as an interesting marker. Unlike other studies which did not support the thesis that normal pregnancy weight gain caused

weight retention and future obesity, Gunderson et al. hypothesised that the 1990 IOM guidelines could be culpable for the sharp increase in rates of overweight and obesity. While Gunderson et al. found that only excess gains contributed to overweight and obesity, they did not find that gains within the IOM guidelines increased obesity. Their hypothesis marked a point at which researchers started to question and scrutinise the IOM guidelines more intensely, especially in light of the so-called "obesity epidemic" in society overall. In spite of the fact that they did not link the liberalisation of weight recommendations to the societal increase in overweight and obesity, they did conclude that women accumulate adipose (fat) tissue in pregnancy, thereby setting the stage for future research of this variety.

The articles from 2001 to 2006 clearly favoured a perspective that represented concern for, or even urgency about, excess weight gain. Though some articles still considered both inadequate and excessive gains, studies began positioning them in a hierarchy where the risk of obesity was prioritised over the risk of low birth weight. Take for instance Stotland et al. (2004), who acknowledged the need to balance risks, but placed greater import of risks related to excess weight; they justified this by referring to the obesity epidemic: "Given the current obesity epidemic in the United States and other industrialised nations, women in these countries may be better served by a public health strategy designed to prevent excessive weight gain compared with a strategy focused on the prevention of inadequate weight" (675). Butte et al. (2003) similarly worried about both risks in pregnancy, but maintained that excess gains led to weight retention. They argued that "adequate, but not excessive gestational weight gain is needed to optimise infant birth weight and to minimise maternal postpartum fat retention" (1431).While not

as strongly worded as Stotland et al., Butte et al.'s concern about fat retention suggested a view that rebuked excess weight more strongly than previous articles did.

On the topic of adolescent pregnancy, there were researchers who still considered adolescents to be at risk of inadequate weight gains (Nielsen et al. 2006b), but they redressed this risk by stating that adolescents were at risk for both inadequate and excessive gains. Even though Howie et al. (2003) did acknowledge that higher weight gains were associated with better fetal outcomes, they argued that this posed risks for the adolescent mother. They prefaced their article with discussion of obesity as a major public health concern, the risks associated with excessive gains in pregnancy, and the fact that adolescents gain more in pregnancy. This is in stark contrast with previous studies on adolescent pregnancy which positioned pregnant adolescents as having precisely the opposite problem. They argued that adolescents were at risk of obesity after pregnancy due to their larger gestational gains. As this posed a public health problem, they argued for obstetricians and health care providers to explain the risks associated with pregnancy weight gain to adolescents. To further add to this line of argument, Sukalich et al. (2006) purported that adolescents had a high incidence of obesity, and in particular, African American adolescents had an even greater incidence of obesity than white adolescents. They argued that this posed great risks to both mother and infant.

Pregnancy gains in obese and overweight women became contentious from 2000 and on. Dietz et al. (2006) argued that low weight gains in obese women are dangerous because they could cause preterm delivery, and therefore, increase infant mortality. A study from Lu et al. (2001), on the other hand, provides some of the earliest evidence that researchers were becoming more and more anxious about increasing numbers of women

gaining excessively in pregnancy, and women entering pregnancy already overweight and obese. Certainly, there is also a shift in research interests. This is understandable considering that the IOM was less precise in their guidelines for obese women. The studies from 2000 and on typically look at the impact of both excessive gains and obesity on fetal and maternal outcomes, and the impact of a variety of ranges of weight gain for obese women. Over the course of Lu et al.'s 20 year study of maternal obesity, they witnessed steady increases. In their indictment of obesity, they called this phenomenon a health burden and an imposition on society (845). The negative consequences of overweight and obesity on pregnancy outcomes is recounted in numerous studies (Rosenberg et al. 2003; Bodnar et al. 2004; Vahratian et al. 2004; Anderson et al. 2005; Brennand et al. 2005; Dietz et al. 2005; Lombardi et al. 2005; Rosenberg et al. 2005; Vahratian et al. 2005; Dietz et al. 2006; Hibbard et al. 2006; Sukalich et al. 2006).

Further, Lu et al. argued that poor African American women had higher rates of obesity - a fact that had not yet been highlighted in the data. Instead of focusing on their previous perceived inability to gain a proper amount of weight, African American women were now at the centre of the debate about excess weight. Despite the fact that Lu et al. argued that poor African Americans have a higher rate of obesity, they also argued that obesity is "a universal phenomenon that encompasses the entire societal spectrum" (849). At once, overweight and obesity are constituted as diseases particular to certain populations, yet they are also constituted as "universal" (cf. Karibu and Raynor 2004).

Evocation of the term "universal" helps us make sense of why so many of the studies are prefaced with proclamations about obesity's status as epidemic. And if, as Rooney et al. (2005) suggest, obesity is linked to chronic diseased and mortality, it makes

sense that the medical studies framed their research in and through this lens. If they provided compelling evidence that what they studied contributed to a better understanding of the aetiology of obesity, the effects of obesity and excess gains, or its treatment, their studies would mark a critical advancement to the contribution of public health knowledge.

Pregnancy weight gain was a central preoccupation for those researchers interested in finding the origin of individual and societal obesity. Rooney and Schauberger (2002) argued that both excess weight gain and failure to lose pregnancy weight gain were predictors for long term obesity. Olson et al. (2003) similarly argued against gaining excess weight because it was linked to weight retention. Since obesity had become a major health concern, they argued that it was critical to avoid excessive gains to prevent chronic disease in women (a public health problem). Siega-Riz et al. (2004) implored health care providers to prevent the trends spurned by the liberalisation of the IOM guidelines; they argued that IOM caused most women to gain excessively, thereby contributing to the obesity epidemic and the costs associated with it. The studies thereby link pregnancy weight to increased risk of overweight and obesity, a growing epidemic to be cured. Likewise, excess weight gains and obesity were linked to a variety of negative outcomes apart from weight retention: increased rates of c-section[14] (Stotland et al. 2004; Vahratian et al. 2004; Dietz et al. 2005; Rosenberg et al. 2005; Vahratian et al. 2005); preterm labour (Dietz et al. 2006; Stotland et al. 2006); anaemia (Bodnar et al. 2004); central nervous system defects (Anderson et al. 2005); gestational diabetes

[14] The mechanism which drives overweight and obese women to be at increased risk for c-section is unknown, though it is hypothesised that large infants are less likely to be able to pass through the pelvis. Also, overweight and obese women have higher incidence of preterm labour, which may lead to emergency c-section. Lastly, scientists suggest that overweight and obese women may have more fatty deposits in the pelvis which prevents their infants from descending properly (Vaharatian et al. 2004).

mellitus (Brennand et al. 2005); preeclampsia (Lombardi et al. 2005); macrosomia (Rosenberg et al. 2005); and breast cancer (de Assis et al. 2006). In terms of the treatment of obesity, the vast majority of studies called for prevention and intervention programs, as most researchers purported obesity difficult, if not impossible to treat.

The increased anxiety over excessive gains, obesity, its outcomes and treatment persist in studies published from 2007 to 2009, with one notable difference; these studies emphasise childhood obesity and the notion of fetal programming at length. I will now turn to the last section of data description and list the revised 2009 IOM guidelines for pregnancy.

**Fear, loathing and fetal programming (2007-2009)**

Between 2007 and May 2009, there was a proliferation of studies about pregnancy weight gain. In fact, of the 138 studies I analysed, 50 were published from 2007 to 2009. Moreover, the tone in this subset of articles is increasingly alarmist regarding the obesity epidemic and excess weight gain. There is greater attention paid to the so-called obesity epidemic in children, and the IOM recommendations are rejected by many researchers. These articles continue to recount the risks and complications associated with excess pregnancy weight gain, and some suggest that even normal pregnancy gains result in programming children for obesity (Oken et al. 2007, 2008). One article does not exhibit these characteristics (DeVader et al. 2007), but rather focuses on balancing risks of inadequate and excessive gestational weight gain. Significantly, DeVader et al. (2007) understand normal pregnancy weight gain as crucial to health

Salihu (2007) completely rejected the notion of increased gains having a positive impact on birth outcomes. In fact, he stated that the relationship between obesity and poor

outcomes was clear. With respect to African American birth outcomes, he found that "excess fat storage was more lethal to black than white fetuses" (556) With respect to the question of infant mortality, he ascertained that obese women have infants who are at risk of perinatal death (Salihu 2008). This is a distinctly different perspective than was espoused earlier in the dataset. I will not go into detail about the risks listed in this section because they are vast in number, and mostly replicated in the earlier section. Suffice it to say, the studies still found risks of weight retention and c-section among those who were overweight, obese or gained excess weight in pregnancy.

Notably, the language used to talk about obesity and women becomes more urgent in this period. For instance, Mazaki-Tovi el al. (2009) suggested that women were "plagued by obesity" (350). Discussing the topic of obesity's "burden" on society, Chu et al. (2008) argued that obesity in pregnancy was commonplace, and that it would "have substantial economic implications" (1452). Likewise, excess weight gains, once thought to be beneficial to the infant, were now lumped into studies with other typical "bad" pregnancy behaviours such as drinking alcohol and smoking (Slickers et al. 2008). Interestingly, the data showed evidence that obesity was resistant to treatment (Oken et al. 2008) while it was at the same time constituted as a "modifiable risk" (Gunderson et al. 2008). Obesity is thus constituted as the bad guy, but a bad guy one can know and possibly defeat if given the right tools and know-how.

From 2007 to 2009, several researchers investigated the role of the intrauterine environment in causing future obesity in children; they found that pregnant women's weight status and weight gains fuelled the childhood obesity epidemic and larger epidemic (Oken et al. 2007; Mehta 2008; Oken et al. 2008; Olson et al. 2008; Reece

2008b; Srinivasan 2008; Byers 2009). Reece argued that the obese intrauterine environment created life-long obesity risk in offspring. Supporting this type of claim, Oken et al. (2007, 2008) contended that fetal programming accounted for both adiposity in early childhood and in adolescence. Moreover, they claimed that even normal gains could adversely affect the fetus' normal development. Rat studies confirmed that obesity created an "adverse intrauterine outcome" which had severe, damaging effects on offspring (Srinivasan et al. 2008) such as impairment and disability (Byers et al. 2009). These fetal programming studies, in tandem with other studies interrogating the damaging effects of weight gain and the obesity epidemic, lent rationale and credibility to those wanting to improve population health via prevention, education, intervention, identification, monitoring, counselling and surveillance. Olson et al. (2008), exemplary of those calling for prevention and intervention efforts, argued that "[t]he magnitude of the childhood obesity epidemic calls for multiple interventions on many fronts" (n.p.). Surely, this rhetoric (especially since it is expert driven) fuels public health campaigns.

Novak et al. (2006) investigated the 'thrifty hypothesis' (a kind of continuation of Whitaker and Dietz's (1998) fetal programming of obesity thesis), which until 2006, was not particularly significant in this literature. The thrifty hypothesis is the notion that "the intrauterine milieu impacts fetal growth directly during gestation" (591) and thus impacts future weight status. Novak et al. found that both small and large infants were at risk for future obesity because of the ways in which fetal appetite development could be hindered. They were not certain of the exact mechanism of this programming, but their study arguably elicited great interest in the questions of whether a person's weight could be programmed *in utero*. Fears surrounding the obesity epidemic combined with the

desire to prevent obesity at all costs made this thesis particularly interesting to researchers investigating the aetiology of obesity.

Throughout the data subset, a multiplicity of opinions emerge on when obesity sets in or is programmed. For several researchers, gains in young adulthood are the culprit, and thus, pregnancy weight gains contribute to that (Rooney and Schauberger 2002). For others, it is not pregnancy weight gain per se, but the lifestyle changes that occur in new parenthood that foster weight retention or gains (Gunderson and Abrams 1999). More recent studies suggest that overweight and obesity in childhood pose great risk for the child to grow into an obese adult. Whitaker (2007), for instance, argued that children's obesity was real and came at an enormous cost; but in striking comparison with other studies, he was critical of epidemiological studies that only focus on mothers. While he suggested that mothers do have an impact on children's birth weights, he maintained that fathers were just as culpable for children's obesity, since they had an influence in children's eating habits and physical activity outside of the womb. Dietz et al. (2005) too argued that "the antecedents of obesity begin in childhood" (243). Research from Groth (2007) suggested the same. Spellacy (2008) argued that obesity began in infancy, and he rather bluntly noted that a "large fat neonate becomes a large, fat adult" (956). Similarly, Gillman et al. (2008) asserted that the "obesity epidemic has spared no age group, even young infants (1651). My point here is to illustrate how newer research goes back further into the life cycle to find the "origin" of obesity to further prevent and contain the epidemic. As such, we should not be surprised that researchers jumped on the fetal programming bandwagon and produced a wealth of evidence to support their claims.

Before I conclude this description of the data, I would like to go back to the issue of women's experience that I touched on earlier. Given that researchers were so keen on intervention, I, along with Kuhlman et al. (2008), wonder how women feel about this. Though Kuhlman et al. studied how best to effectively control weight in pregnancy and postpartum, they did not assume that intervention was an excellent answer. In fact, they expressed worries that women would be demoralised by interventions. Likewise, considering the urgent calls for women to lose weight prior to gestation or to stave off excess weight gain throughout duration of pregnancy, it is conceivable that women would diet to achieve these goals. Here, the researchers might come across a problem. Namely, Mumford (2008) found that women who dieted or restrained their eating prior to pregnancy were susceptible to metabolic disruptions during pregnancy, which in turn caused greater weight gains. Accounting for the experience of women in pregnancy - their attitudes towards eating, weight gain, their interactions with clinicians, and so forth - would better equip clinicians and public health officials to deal with the problem of obesity without demoralising pregnant women.

**Overview**

In sum, the discursive shifts apparent in the medical/scientific literature on pregnancy weight gain illustrate a steady and significant shift: 1) away from worries about women not gaining enough weight; 2) towards balancing the risks of inadequate and excessive gains; 3) towards focusing on the risks associated with excess weight; and lastly, 4) towards a full-scale panic about the effects of weight gain on future weight status given both the general and childhood obesity epidemic.

Throughout the data, particular groups are studied more than others, namely adolescent and minority women. The origin of childhood and adult ill health is seen as originating *in utero*, a troubling conclusion which creates and reinforces societal fear of and disgust with fatness.

**Revisiting the IOM guidelines**

In May 2009, the Institute of Medicine formed a committee to reevaluate its guidelines, which I have reproduced below. The new guidelines are surprising in that they have not drastically changed, considering how vehemently some researchers called for their revision (Groth 2007; Oken et al. 2007, 2008; Joseph et al. 2008; Spellancy 2008). The IOM revised BMI categories, amended the minimum weight obese women should gain, added a weight range for obese women, no longer instructed African Americans and adolescents to strive for higher gains, and added a rate of optimal gain per week. Recommended weight gains have not been significantly curtailed despite worries that even normal weight gains contribute to the childhood obesity epidemic. In fact, they remain relatively unchanged, though I suggest that the changes made are indicative of the discourse shifting further to a panic about the obesity epidemic and women's role in its origin and prevention, which I turn to next.

**2009 Institute of Medicine (IOM) Guidelines**

Table 3: 2009 pregnancy weight gain guidelines

| BMI | Recommended total gain (lbs) | Rate of gain (lbs/week) (2nd and 3rd Trimester) |
|---|---|---|
| Low (BMI < 18.5) | 28-40 | 1 |
| Normal (BMI 18.5 - 24.9) | 25-35 | 1 |
| Overweight (BMI 25.0-29.9) | 15-25 | 0.6 |
| Obese (BMI > 30) | 11-20 | 0.5 |

(Taken from Institute of Medicine Report Brief: May 2009)

**Scientific discourse and the shifting ideal of the maternal body**

***Discourse has material effects***

Before moving into the discussion of medical/scientific discourse in relation to dominant cultural ideas about body and weight, I would like to recall some of the ideas about discourse, and reiterate the major shifts evident in the data. To clarify the idea that discourse has material effects, I build upon Reuter (2007) who argues that "the discursive...has...the very important material effect of narrating the social order" (164) in both a descriptive and prescriptive sense. She contends that discourse, even as it coheres around a particular enactment of norms, combines with material practices (the particularities of individual studies or the deployment of this discourse in patients' engagement with medical professionals) to produce a multiplicity of embodied positions, with no single one achieving the ideal in quite the same way. I use the idea that discourse in itself has material effects which vitally inform the enactment of the norm in various ways.

While the actual changes in the IOM guidelines are not as significant as one may have expected after all that debate, I assert that the scientific studies themselves are evidence of my claim that the ideal maternal body has shifted to account for the obesity epidemic. No longer is the claim that women should "eat to appetite" prevalent, and no longer is weight loss in pregnancy considered dangerous to both fetal and maternal outcomes. The priority has shifted from looking more closely at the issue of excessive gain rather than inadequate gain for fears that excess gains will contribute to maternal and infant overweight and obesity. Researchers have maintained that a balance of risks is necessary, yet over time, they have prioritised the risk of excessive gains with the rationale that overweight and obesity are more detrimental to public health than the risk of low birth weight. In the early studies, researchers very clearly delineated the risks of low birth weight, and connected low birth weight directly to infant death and impairment. I suggest then, that researchers deem obesity to be a fate worse than death. The rhetoric against obesity, excessive gains, and even normal gains is so negative that it implores health care providers to warn, counsel, intervene and educate their pregnant patients strenuously regarding the risks associated with it. Take for instance Olson (2007), who argues for "more extensive patient education and behavioural counselling" (435) in pregnancy to prevent maternal and child obesity. Moreover, she suggests education "through well-designed self-help materials that encourage goal setting and self-monitoring by mothers" (435). Likewise, Crane et al. (2009) recount the importance of minimising risk through identification, and then correcting those who are risky through expert guidance. This discourse ultimately implores women to hold themselves accountable for preventing the obesity epidemic through fitting their bodies to the norm.

What is significant about the 2009 IOM guidelines is that they are more precise, and consist of a target weight gain per week. This encourages further monitoring and management of pregnancy weight gain by both pregnant women and their clinicians to attain optimal outcomes, these outcomes necessarily avoiding weight retention, overweight and obesity in infants and children. The IOM recommendations thereby call for the narrowing of acceptable outcomes.

***The obesity "epidemic"***

After looking at the data descriptively, what is striking is that the constitution of obesity as epidemic happened quite suddenly. I argue that in 2000 with Gundersen et al. and in the vast majority of articles starting in 2001, the balance tips to researchers worrying about the risks of excess gains and obesity. Likewise, the term "obesity epidemic" is readily deployed when it was not used before, and towards the end of the dataset, the use of the term is ubiquitous to describe the risks adults and children alike face. Likewise, obesity is called a chronic disease, or even a plague (Gillman et al. 2008; Mazaki-Tovi 2009) that creates a "vicious cycle" by spreading from parents to children (Reece 2008b).

So, one must ask after this sudden interest in the obesity epidemic. Currently, many of us take the obesity epidemic as self-evident; it appears to be a clear and objective adjudication of our reality. Oliver (2006) argues that scientists have been discussing American weight gains since the 1980s (613). He contends that Americans have gained on average eight to 12 pounds since that time, an amount that he argues does not constitute an increase in ill health. Moreover, he argues that this hardly allows for obesity to be classified as a disease, nor would it be appropriate to do so. In fact, naming obesity a disease "distorts the reality of America's weight gain, [and] is likely to cause

more problems than it solves" (612). He also argues that the there are financial and political interests that are invested in keeping the notion of epidemic obesity alive.

In keeping with what I have observed in the data, Oliver argues that the notion of an obesity epidemic gained prominence in 2000 through a rather persuasive PowerPoint presentation from the Centers for Disease Control and Prevention (CDC) aimed at getting the public and experts alike to recognise that obesity and its health consequences were growing in prevalence. This PowerPoint contained a colour-coded map that showed the apparent "outbreak" of obesity; this visual was far more convincing than data tables, even though both suggested the same thing. Oliver argues that despite the fact that there existed no new scientific evidence about the obesity's epidemic status, this single PowerPoint generated hundreds of news articles. This new warning from the CDC plus the proliferation of articles helped constitute obesity's new status as an "epidemic." Relating obesity to epidemic disease, particularly as if it were infectious, is evident in how the literature constitutes fetal programming. Specifically, obesity is understood as virulently spreading from mother to child. This helps provide the context for the sudden shift in discourse; medical/scientific articles moved away from a balance of risks to a focus on excess gains, towards an interest in the aetiology of overweight and obesity, and the insistence on prevention. It is no wonder that there was a sudden increase in panic about population health and obesity, because a PowerPoint instantly moved the population from having average health to being epidemically obese and thus diseased. Likewise, Campos et al. (2006) dispute the fact that obesity is epidemic, and also observe a connection between powerful business interests and the growing fear of obesity. They

argue that fear of fatness is necessary for profitable returns in the weight loss and pharmaceutical industries.

Though Flegal (2006) does not necessarily understand obesity as "epidemic" per se, she does understand overweight and obesity as significantly increasing in our society. While Oliver (2006) presents a very good analysis of how the language around such issues can be crafted to significantly change our understandings of a particular phenomena in a very short amount of time, his analysis may prove too simplistic. While naming obesity an epidemic is certainly problematic, many researchers and health professionals argue that the health risks associated with overweight and obesity are significant and should be curtailed. The resultant shifts in pregnancy weight gain discourse are explicitly linked to the obesity epidemic discourse. Ascertaining obesity as an epidemic has arguably led to panic about weight gain in pregnancy, and accounts for the change in tone evident in the data.

***Moral panic!***

Oliver (2006) links the rhetoric of the obesity epidemic to perceptions of moral failing and weakness. Bell et al. (2009) share the same view, and argue that childhood obesity, childhood overfeeding and fetal ill health inspire moral panic. I also suggest that perceived *fetal overfeeding* inspires a moral panic. Bell et al. suggest, in the vein of Cohen (1972), that moral panics require people to create scapegoats or "'folk devils' onto whom public fears and fantasies are projected" (Hunt 1997, 631 quoted in Bell et al. 2009, 161). Suffice it to say, the notion of epidemic ill health, especially of children, leads directly to blaming bad, selfish, uneducated and/or poor mothers, and to public

health campaigns directing their initiatives at these problem populations. The next chapter will consider the "folk devils," and the blame accorded to them.

Our problem with obesity is not simply that it causes ill health. The medical/scientific discourse makes very clear the costs associated with excess weight - the burden that obesity "inflicts" on society. Not only does obesity cost health care systems by increasing the incidence of chronic disease, pregnancy complications, and surgeries such as c-section, but it allegedly leads to more sick days, and therefore, less productivity. As I write, the disgust with obesity increases. As recently as February 2010, Jameson of the Los Angeles Times argues that slim Americans are losing their patience with the overweight and obese and the increased burden they put on society; increasingly, thin people seek more punitive treatment of the overweight and obese, through championing things like "sin taxes" on junk food, trying to pass legislation preventing the obese from dining in restaurants, or threatening to not hire obese staff (Jameson 2010).This links closely to the sociological research on the stigma associated with having a body outside the ideal (Dejong 1980; Haskins and Ransford 1999; Maurer and Sobal 1999), which suggests that the meanings attached to overweight bodies are overwhelmingly negative: lazy, disgusting, out of control and deviant (Bordo 1993, LeBesco 2004; Murray 2008a, 2008b). Considering the ill will felt towards overweight and obese people, it is not surprising that researchers hypothesise that weight discrimination is on the rise (Jameson 2010). A study that exemplifies the stigma associated with overweight and obesity comes from Neggers et al. (2003) who argued that a connection existed between high pre-pregnancy BMI and low child IQ. While their hypothesis ultimately proved false, I argue that the study's very existence illustrates how

ingrained our negative stereotypes about overweight and obese people are. Considering that the studies consistently referred to women's greater incidence of obesity and the risks of pregnancy weight gain on future obesity, they support the research that supports the gendered aspects of weight stigmatisation (LeBesco 2008; Warin et al. 2008). In other words, women are constituted as having a more problematic relationship to obesity, partially as a result of pregnancy.

Similarly, the studies expressed alarm over the obesity of particular subpopulations of women, namely those who were poor, young, and/or African American. Ernsberger (2009) demonstrates that overweight and obesity is related to poverty. Interestingly - and in relation to the above discussion of stigma - Ernberger argues that fatness itself may be impoverishing (26), insofar as obesity results in discrimination, low wages, low educational attainment, and less social mobility. He also makes the case that poverty, rather than obesity, causes ill health (33). This conclusion would require significantly different public health strategies to improve community health. Herndon (2005) also discusses the relationships between obesity and marginalised groups. She argues that the dominant discourse about weight is "that the fattest people in the United States are people of colour, immigrants, and members of the lower class" (128), i.e., those who are in a subordinate position in society to begin with. She also argues that there is a war on obesity that employs cost-benefit analysis to decide who does and does not deserve the most resources. She observes a movement afoot "to classify obesity as a problem of class, race, and nationality with economic repercussions...that pose a serious threat to the health of [the] nation" (129). Besides minimising the social causes of obesity, this movement also gives critics the opportunity

to "criticise obese people in (de)moralising ways" (136), and particularly to criticise entire subpopulations of people, such as African Americans, immigrants, and the poor for any and all actions. That is, any actions marginalised groups undertake, especially those that challenge the order of things, could be unfairly, yet covertly, scrutinised. She argues that using the obesity epidemic and a war against obesity allows people to criticise these groups covertly without being critiqued for their prejudice. Therefore, "obesity provides a useful vehicle for criticising groups of people already marginalised" (139), such as poor, African American, teen mothers.

***Women's embodiment, in pregnancy and otherwise***

Social scientists argue that women still feel pressure to be attractive in pregnancy much as they would when not pregnant (Bailey 2001; Earle 2003; Nieterman 2007); evidence from hard scientists, such as Abrams (2000), supports this point. The little work on women's actual experience with pregnancy weight from the vantage point of public health science suggests that women feel anxiety about weight retention after pregnancy. Considering that women become pregnant while already in a culture that values thinness, beauty, and health, they enter pregnancy ingrained with these dominant discourses. They are anxious about the changes their bodies undergo, and are thus prone to diet, which leads to greater weight gains in pregnancy (Mumford 2008). Further, the possibility exists that they could be demoralised by interventions during pregnancy (Kuhlman et al. 2008). Interestingly, Swann et al.'s (2009) study of pregnant women's attitudes towards gestational weight gain - also focusing on pregnant women with eating disorders - illustrates that while some women may enjoy a respite from the cultural valuing of

thinness when pregnant, many women exhibit ambivalence and anxiety about pregnancy weight gain.

This leads me to the following critique, namely that the medical/scientific data lacks women's voices, which prevents public health officials from understanding the experience of women in pregnancy, and the impact of their expert interventions and research. If there is a possibility that the focus on pregnancy weight creates unhealthy body images and unhealthy or even dangerous compensatory behaviours in the face of weight gain related anxiety in pregnant women, I would suggest that the kinds of interventions public health champions could be at best misguided and at worst dangerous. On the contrary to many of the studies I analysed, Swann et al. (2009) found that women in early pregnancy "are in need of guidance to help alleviate and/or moderate their concerns about weight gain, as the presence of early concern is associated with higher weight gain and larger infants on average" (400). While Swann's argument may prove problematic in that it paradoxically promotes women to not worry about weight via their own concerns about the larger infants, it is nonetheless apparent that women's voices are excluded from the data that I analysed, and are sorely missed if intervention is to be successful.

In fact, Mazer-Poline and Fornari (2009) argue that women's anxiety about weight gain may be much more significant than previously thought; they argue that subclinical eating disorders may exist in 3-15% of obstetric patients (382). This is a significant number of women who may be harmed by public health interventions that focus on and reiterate the risks associated with overweight and obesity. Women who limit their caloric intake or diet may have greater difficulty restricting their eating in

pregnancy, which often results in binge eating; a study from Soares et al. (2009) shows that approximately 25-44% of women pregnant with their child experience regular binge eating (388). Binge eating, which originates in attempts to manage weight in and before pregnancy, can cause excess gains in pregnancy. Again, one has to wonder about the efficacy and ethics of making women overly concerned with weight gain, in pregnancy or prior to it. While one can argue vehemently about whether interventions are required or not, it is evident that understanding women's attitudes towards pregnancy weight gain and their changing bodies is vital to a nuanced treatment of the issue at hand.

Significantly, our own cultural obsession with thinness may prevent women from gaining within the recommendations from the outset, as evidenced in the aforementioned case of calorie restriction and binge eating. Therefore, one must wonder about replacing one kind of risk with another. In this case, interventions and prevention strategies could replace one risky behaviour with another, that of unhealthy fixation on thinness and weight. Even if these interventions are effective in slowing the spread of "epidemic" obesity, it could come at the cost of creating different kinds of weight problems.

Campos et al. (2006) argue that the promotion of overweight and obesity as epidemic is linked to pharmaceutical and weight loss industry interests. Oliver (2006) concurs and notes that the production of effective weight loss pills would be a windfall for Big Pharma. Likewise, an entire industry of weight loss companies and gyms depend on the very notion that people need to lose weight to be healthier and more attractive. Thus, the dominant obesity discourse supports entire industries, and supports institutions that study obesity and health. Other researchers also relate dieting practices to the obesity epidemic, but suggest that the focus on weight is misguided and does not promote health

and wellness (Cogan 1999; Cohen 2005). Thus, dieting, a strategy employed by so many to lose weight (however ineffectively), exists in tandem with the obesity epidemic. The fact that so many people attempt to lose weight yet fail is a contradictory one, and public health campaigns struggle to enact meaningful interventions. Hence the rationale to begin prevention and education *in utero*.

In this data subset, there is a strong tendency to implore pregnant women and mothers to control their weight to stave off obesity in themselves and their families. Yet, the medical/scientific literature ignores other aspects of research on eating attitudes, such as those which emerge from psychology, sociology, or dietetics. For instance, Birch et al. (2003) note the strong impact of parental, and especially maternal, eating habits on children. If parents practice restrictive eating patterns and enforce these patterns of restriction on their children, children tend to have inappropriate responses to hunger and satiety; this compromises their ability to eat when hungry and stop when full, causing them to overeat forbidden foods. Birch et al. (2003) argue that psychosocial factors could have a far greater impact on childhood and adult obesity than genetics, and arguably fetal programming, alone. Thus, if interventions are based primarily on weight, public health campaigns do not solve weight problems. Rather than understanding "epidemic" obesity and the growth of subclinical and clinical eating disorders as being fundamentally linked, much of the research does not intervene at the level of the social. That is, the medical/scientific literature that I observed did not look at the obesity problem in a holistic way. Rather than exhuming the fears about fat and food we collectively experience as a society, the medical/scientific literature is bound up in this discourse about eliminating fatness or excess at all costs. While the literature does provide

significant insight as to how overweight and obesity function from a scientific perspective, it does little to answer why we have collective anxiety about fat bodies, both our own and others'. Paradoxically, a perspective which focuses intensely on the health problems associated with overweight and obesity ignores aspects of public health that fuel overeating, unhealthy eating, or sedentary lifestyles in the first place.

As the dominant discourse about pregnancy weight gain changed with the growing concern for population obesity, so too did scientists attempt to reconfigure the ideal pregnant body into a good "intrauterine environment" that minimised the risks of obesity rather than insufficient birth weight. The ideal pregnant body is one that is fit and healthy, through the correct management of weight gain. Those women whose bodies lack the proper comportment run the risk of contributing to the ill health of not only their children, but the population. In this section, I described the data on pregnancy weight gain, and linked it to the dominant cultural meanings associated with weight. Through this, I demonstrated that scientific discourse creates an embodied ideal for pregnancy, and that the ideal has shifted over time from one that is not too thin to one that is not too fat. I also underlined the importance of gender, "race", class, and age to the discussion.

## Chapter VI. Responsibilising pregnant bodies: An extension of mother-blaming

In this chapter, I discuss pregnant women's unique responsibilisation with regard to childrearing and child health. I understand this phenomenon as being consistent with the medical management of women historically. I also suggest that being a "good mother" is explicitly linked to possessing a good maternal body, linking medical/scientific discourse to dominant cultural discourses surrounding good and bad mothering, where an overweight or obese pregnant woman or mother is explicitly linked to notions of abuse and maltreatment. These ideas are intertwined with Foucauldian notions of normalisation and responsibilisation, where particular bodies are disciplined in and through medical/scientific discourse. This discourse implores women to see themselves through normative categories.

I also discuss how overweight and obesity are constituted as uniquely feminine issues, and how the worry about women's weight is closely connected to stereotypical beliefs about women's perceived essence. In this respect, one of the effects of medical/scientific discourse is to reaffirm normative discourses about women, and to affirm a neoliberal project promoting individuality, choice, and freedom with respect to health. The Blackwell Encyclopedia of Sociology notes that a neoliberal approach ties societal prosperity and well-being to the "invisible hand" of the market and economic growth, while maintaining that government regulation damages said prosperity. It privileges individual freedom over the welfare state, which it purports to be bureaucratic and inefficient. Considering this, I look closely at the issue of constituting mothers as blameworthy, as opposed to pointing the finger at fathers, doctors, the state, healthcare, and poverty, for instance. This focus on women as the origin of obesity, now considered a

disease, eliminates the need to look at other factors, and questions of "the social." I posit that women are in a difficult position, and may be faulted for what their bodies do and do not do accomplish in pregnancy and motherhood. While multiple studies (see for instance Johnston et al. 1992; Johnston and Yancey 1996; Stotland et al. 2004; Rooney et al. 2005; Groth 2007; Oken et al. 2007; Joseph et al. 2008) also fault the Institute of Medicine (IOM), deeming their recommendations inappropriate, they still hold women responsible insofar as women are the target of interventions. They also do this through maintaining that women gain in excess of even the IOM recommendations. Through a discussion of these issues, I endeavour to answer how the creation of an ideal pregnant body by the medical/scientific literature contributes to women's normalisation and responsibilisation. I also clarify the effects of these processes.

To make these arguments, I start with a discussion of pregnancy as a mysterious time when women and their bodies possibly become unruly and cannot be trusted to adequately care for the fetus. I take this argument further, suggesting that women are responsible for not only fetal health, but fetal perfection. Then I highlight how this debate intersects with notions of good and bad mothering. Necessarily, these issues lead me to a discussion of maternal-fetal conflict. I then move to a discussion of exactly who is to blame for the social problem of childhood obesity. Last, I discuss the ideas of normalisation, responsibilisation, and individuality, and use the example of cesarean section to highlight how women are responsibilised for medical risks they incur, necessarily taking the onus off of the medical establishment's actions.

**Pregnancy: Potential for ill health, unruliness and strange appetites**

Kukla (2005) argues that pregnancy has long been thought of as a disease to be managed (11). Risks associated with childbirth such as disability, infant death, and maternal death were significant until relatively recent history. Pregnancy has been understood as a relatively dangerous period of a woman's life. Considering this, it is no wonder that people understood it as a potentially injurious condition. The real possibility that pregnancy caused ill health and death made the entire process mysterious, unknown, and frightening (Kukla 2005).

The spectre of this view still haunts us today, as evidenced by our fears about health risks in pregnancy, and as illustrated by the wealth of literature on the topic even today when these risks have been minimised. Historically, the womb was considered both "awesome and dangerous" (6). At once, it was thought to be capable of creating life, yet it was evidently easy to corrupt because it also created "monsters and deformations" (6). The belief that the integrity of the womb was at stake, coupled with women's inferior social position relative to medical authority, ensured that the blame for any problem in pregnancy was placed on women. In such a way, the womb became a "public space, [which] supplant[ed] the character of the pregnant woman herself" (122), and continued to be the focus of public scrutiny.

Kukla (2005), in fact, argues that there is mass hysteria about the permeability of women's bodies. I connect this to notions of moral panic below. She argues that pregnant women, especially in that they consumed and craved, were thought to pollute the womb. While it is no longer believed that women literally pollute the womb, Kukla argues that a similar sensibility continues today, in which there is a societal fear about women's impact

on the children. Since the boundary between mother and fetus is arguably absent, worries about women's impact on the fetus flourish (14). Since men's children were growing in the uterus, people worried that the fetus would be negatively impacted by the mother's mysterious body. At one point, after all, the uterus was understood as moving around women's bodies, causing hysteria. Current medical/scientific literature is a function of the same paradigm; consider Salihu et al. (2007), for instance, who argue that the mother is "toxic" to the developing fetus, and their excess fat "lethal" (555-6).

I suggest that the medical/scientific literature privileges the idea that women cannot contain their desires, especially those related to the consumption of food. While it is recognised that cravings for food in pregnancy are normal, women are understood as lacking control over these desires, and thus they are prone to consuming excessively. Murray (2008b) notes that "[w]hile hunger is supposedly a 'natural' impulse, it is a highly regulated behaviour structured by moral dictates about moderation and control" (64); the same can be argued for other desires. Therefore, one can see how the pregnant body is viewed as unpredictable and difficult to manage, possibly due to women's inherent weakness and explicit connection to the body; their close connection to the body supposedly reduces their ability to make rational choices. The inability of women to cast off these bodily cravings could be suggestive of their inability to properly nurture children and train them to be good citizens. There is an explicit link between our fear of female desires and cravings in pregnancy to anxieties about women's proper role as fundamentally nurturing (Bell et al. 2009, 162).

Rather than focusing on the impact of outside influences such as poverty and violence might have on fetuses and their mothers, attention is cast onto the mother's own

indulgences - an easier scapegoat (105). Therefore, she argues that "maternal bodies are generally imagined as potentially unruly when they are pregnant" (105). This results in societal fears about the life of the fetus at the hands of its mother. Considering this, it should be apparent that the pregnant body is understood as a public body first and foremost, and that it "is responsible for the production of human and social nature, properly governed by the laws of nature and easily corrupted and interrupted" (85). So, while I demonstrate that there is a shift in the medical/scientific discourse over time, the consistent theme is one of pregnant bodies as a question to be understood, a serious riddle to ponder. This is especially true of African American women whose bodies are seen as more unruly because in the 1990s they were said to produce SGA (small for gestational age) infants even with so-called normal gains, gain less weight on the whole, and retain more weight. This is of course in comparison with white women, who are taken as the standard against which all others are to be measured. That African American women are more puzzling links to implicit racist assumptions about their status as closer to the body than more "enlightened" white folks (Sommerville 2009).

**Fetal perfection**

Pregnant women are interpreted as going against the fetus and being self-interested if they do not strenuously manage and minimise risk. As pregnancy is understood as an unnatural or diseased state, it is thought that the pregnant body should be actively shaped to minimise issues that may emerge (Kukla 2005, 20). Fundamentally, fat mothers are thought to produce fat children. The explicit connection of fatness with pathology - our belief that fat people are somehow less than and that they selfishly consume to the point of disease - means that these fat families are viewed as undesirable members of society.

As such, overweight women, even those who are not pregnant (because women who are of "childbearing age" are often considered "pre-pregnant"), become problems needing to be fixed. There is great social anxiety when these problems associated with fat cannot be fixed, and this anxiety is amplified when fatness appears contagious. Reece (2008b), for instance, calls obesity a vicious cycle which passes from parent to child, and fuels other epidemics related to heart disease, cancer, and diabetes. In this study Reece is not referring only to the environment the child lives in, that is, the food the parents provide, the lifestyle they model, and the obesogenic society that s/he lives in, but the intrauterine environment itself as the origin and overriding factor in creating disease. In the case of healthy weight gain, as opposed to worries about mothers "overfeeding" their children, I suggest the stakes are raised. If a pregnant women does not comply, or if her body does not cooperate with her or her doctor's wishes, she is faced with the possibility of damaging the health of her infant at birth, establishing or programming her child for future illness, and acting against the interests of public health.

This links to yet another valuable issue that Kukla (2005) raises: she notes that women are increasingly responsible not only for fetal health, but for fetal perfection. It is no longer enough to simply produce a viable infant, that is, one that survives, but it is incumbent upon women to maximise the fetus' health and wellness in any way possible, which necessarily includes strenuously monitoring food intake in pregnancy and while nursing. Kukla argues that contemporary mothers are held responsible for the fetus' every attribute, from conception and on, "through what they eat when they are pregnant and nursing" (126). In terms of the medical/scientific literature, I too observe a shift from discussing basic aspects of fetal health, such as minimising infant death by ensuring

sufficient birth weight, to accounting for the totality of infant health via women's actions in pregnancy. It is expected that women educate themselves and monitor their food intakes and weight to stave off any possibility of ill health. Add to this the cultural assumptions about overweight and obesity, which attribute negative characteristics to overweight and obese individuals, and it becomes clear that mothers are charged with shaping the very character of the fetus, whether it will be either productive or unproductive, hardworking or lazy, and selfless or greedy.

**Good mothers and bad mothers**

The cultural rhetoric surrounding motherhood is quite consistent; good mothers are essentially nurturing, selfless, and committed to their children above all else (Hay 1996). Bad mothers, on the other hand, lack these basic characteristics which are necessary to the rearing of healthy, stable children. In the last chapter, I argued that medical/scientific discourse is bound up with dominant discourses regarding weight and attractiveness; I extend this argument here by including ideas about "good" and "bad" mothering. In this case, the medical/scientific discourse is informed by and reinforces normal and pathological categories of mothering. In many instances, much of the scientific literature argues that women either lack education to correct their risky behaviour or that they are actively rebelling against the advice they are given. For instance, Herring et al. (2008) maintain that there are many issues at hand when dealing with pregnant women and their understandings of risk; specifically, pregnant women either ignore messages about diet and health (and are thus willfully ignorant), estimate risk poorly, or lack awareness. I understand this as an exemplar of Kukla's arguments. Following Herring et al.'s logic, many women supposedly lack the responsibility and selflessness to adequately take care

of fetuses. Their bodies are hopelessly out of control through a lack of education, will, and righteousness.

Theorists who research motherhood, like Hays (1996) and Kukla (2005), argue that women are held solely responsible for how children turn out, their successes and their faults, however minor or inconsequential. Hays notes that our society considers a mother bad if she is "neglectful" of her children. Neglect, however, is framed as the inability to cast off her selfish desires, not as an abusive act itself. Through the analysis of the medical/scientific literature, I observe a connection between the idea that women must overcome or control their selfish bodily desires in order to be good and normal mothers. In the early 1990s, the data suggested that women put their fetuses at risk of low birth weight, and therefore death, by failing to gain weight ( see for example Hickey et al. 1990; Johnston 1991; Cliver et al. 1992; Taffel et al. 1993), which I argue can be linked to the ideas of abuse and neglect. More recently, the data illustrates that being overweight and obese is damaging to the health of the fetus (see for instance Olson 2007; Groth 2007; Oken et al. 2007; Salihu et al. 2007; Spellancy 2008), and therefore neglectful in many ways. Women's gains are considered excessive and problematic (Oken et al. 2007); their consumption and cravings are problems to be curtailed. Now, being an overweight or obese pregnant woman or mother serves as an illustration of selfish desire; her body is fat due to "excessive" consumption of food, and the consumption of "wrong" or "unhealthy" foods. The meanings associated with fatness - apparent lack of control, selfishness, and greed that fat bodies signify, in concert with the health risks incurred by being an overweight and obese pregnant woman or mother - are projected onto the quality of parenting.

Here, the state of women's bodies are evidence of their failings as mothers; or as Murray (2008b) argues, fat bodies act as virtual confessors of immorality and bad behaviour. Murray utilises the Foucauldian notion of the obligatory confession, one which appears to be of our own volition, yet must nonetheless be extracted from us. She argues that "the 'obese' subject is immediately 'known': the 'fat' flesh of one's body has already silently performed the confession" (75). In such a way, the body presents those who look at it with access to the very 'truth' of ourselves, and leads them to instantly act as the receiver of our confession. Overweight and obese people betray their supposed faults: decadence, laziness, greediness, pathology and other negative attributes ascribed to them by virtue of having the bodies they do. Overweight and obese mothers and pregnant women therefore present us with their not so secret failings, and it should not be surprising that the discourse fixates on their clearly delineated flaws. The truth produced from this virtual confession - the inferiority of particular types of bodies - acts to pathologise these bodies, obliging them to fix their bodies (79). Fat women are understood as more concerned with what fulfils them than what is best for others; their selfish desires prevent them from providing the ideal intrauterine environment for their fetuses when pregnant, and they fail to model the right behaviour for their children.

**Maternal-fetal conflict**

An interesting aspect of the ideology of women as selfish in motherhood or pregnancy is the problem of individuality, namely in understanding the mother and fetus as separate individuals. In this case, one individual (the mother) is thought of as not acting in the best interests of her fetus, who is thought of as an individual. Since the fetus cannot exist outside of its mother and its status as an individual is problematic and contentious, it is

problematic that the scientific/medical and cultural discourses move so swiftly towards blaming mothers for the risks their fetuses incur in pregnancy. I maintain that it is certainly understandable that pregnant women guard the health of their fetuses fiercely because they understand their fetuses as one day being their children who are individuals. Certainly, women have a variety of opinions on whether their fetus becomes a human individual at conception, sometime during gestation, or at birth, and may or may not feel strongly about optimising their health. In any case, the medical/scientific literature suggests that women should actively optimise fetal health, and in doing so, it implicitly pushes a fetal rights agenda.

I understand the idea of mothers and fetuses being in conflict to vitally inform the discourse on pregnancy weight gain, and pregnancy more generally. Inherent in these ideas about selfishness is that women can make choices which put them at odds with fetal health. The classic example is refusing a c-section - a procedure that eliminates many risks to the fetus, but is thought of as suboptimal by many women. The medical/scientific literature does not reflect how complex this negotiation might be; it does not reflect the ways women think of their decisions with respect to their own desires, what is good for the fetus, or what is best for both. The mother is expected to maximise the health of both by squelching her individual desires. The pregnant body's status as somewhere between self and other ensures that women's attitudes towards health-optimising behaviour are not a simple matter of her versus the fetus. We can make sense of the panic about women's bad mothering in pregnancy because women are thought of as imposing their will and (usually bad) behaviours on another individual, who is arguably helpless. This begs the

question: do women have autonomy in pregnancy when the fetus is understood as an individual deserving of particular rights?

I note that the medical language in the literature takes on a tone of panic when the subject of children's obesity comes into play. Not only do the studies discuss obesity as placing an enormous economic burden on society (Whitaker 2007; Getahun 2007a, 2007b;), but they also understand it as "persistent[ly] programming...child weight" (Oken et al. 2007, 322.e1), necessarily The impact on women's health moves into the background when there are health risks posed to children. This is certainly understandable, however, this notion wrongly assumes that women are unconcerned with the health of their own children, or that it is inappropriate to be concerned for the health of both women and their children. As I argue later in this chapter, the medical/scientific discourse valorises a particular kind of society - one based on individuality, rationality, and choice. However, as noted when discussing the problem of boundaries in pregnancy, there is no clear delineation of self and other in pregnancy. The literature on maternal-fetal conflict suggests that women can often be in conflict with the fetus, and that one can impose its will on the other. Thus, the issue of what the fetus is entitled to *in utero* is prominent, and in opposition to the mother's reproductive rights. This is to say that women's choices in pregnancy are constrained; making "bad" choices puts one at risk of being judged by society at large.

**Who is to blame for childhood obesity?**

Bell et al. (2009) and Kokkonen (2009) argue that childhood obesity is first and foremost a sign of bad motherhood because it is the mother who feeds the child and controls what the child can and cannot do. These bad mothers of overweight children are unsuccessful

in moulding the children's bodies in accordance with the correct, healthy standard, and are therefore seen as negligent. Bell et al. (2009), in particular, link the notion of bad mothering to three problems: childhood overnutrition, fetal alcohol exposure, and smoking around children. I take up their research on childhood overnutrition and graft it onto the concept of overnutrition *in utero*. They argue that these issues have been "medicalised and criminalised...framed as looming health emergencies that require immediate intervention, and increasingly, legislation" (155). They suggest that these anxieties about bad mothering - through their or their children's consumption of "bad" substances - are thoroughly enmeshed with our anxieties related to changing gender roles (162). These kinds of concerns about women not intrinsically knowing, explicitly neglecting, or even refusing to do what is best for children, create panic about the future of society more generally. In this way, women's role as reproducers puts them in a precarious situation where they are responsible for collectively steering the health of an entire generation, and yet are not trusted to do so adequately.

Here, it should be noted that good health is not simply a way of minimising costs through not utilising healthcare services, but it is also a signifier of productivity. Raising overweight people (read as essentially lazy and unhealthy) calls into question whether we can actually trust women to reproduce the next generation of workers. If women do not raise productive children, their usefulness is arguably extinguished. The inability to do so is particularly difficult for lower class and minority parents who have less access to resources and whose children are more likely to have issues with weight. Likewise, adolescent mothers are positioned as bad mothers from the outset. Davies et al. (2001) note that public discourse of teen pregnancy problematically constitutes these young

women "as irresponsible, immature or misguided, with dubious parenting capacity and likely headed for life-long dependency on public benefits" (83). They also argue that "the social science discourse, with few exceptions, views teen mothers within a social problem framework" (84). Their pregnant state is a supposed result of immaturity, poor planning, and irresponsibility.

**Normalisation, responsibilisation and individuality**

Up to this point, I have made the argument that the medical/scientific discourse reflects a perspective that women are responsible for their children's - and therefore society's - health, as a function of their ability to maintain a healthy weight. Carabine (2001) defines normalisation as a productive or disciplinary function of power, which "establishes the measure by which all are judged and deemed to conform or not...produc[ing] homogeneity through processes of comparison and differentiation" (278). She also notes that the norm is something to aspire to, and that subjects are continually "reassessing, establishing, and negotiating [their] position in relation to" it (278). Responsibilisation is closely related to normalisation; in this context, the subject takes personal responsibility to align oneself with the healthy standard. It implies a moral fortitude to do right by neoliberal standards in that it requires the recognition of political ideals such as choice, individuality, rationality, and the market economy as ideal. The normalised pregnant woman recognises the healthy norm, negotiates her own relationship to it, and tries to approximate it as best she can, while the responsibilised pregnant woman recognises the normative standard as a moral obligation.

For the most part, the studies in question pose overweight and obesity as "universal" problems of the population, however, the solutions to this problem involve

individual rational choice, such as individual education and risk assessment, above all else. It should be noted that "even if 'obesity' is constituted as a disease of civilization, the 'civilised' world is nevertheless presumed to be made up of individuals who must ultimately all take responsibility for this collective 'condition'" (Murray 2008b, 49). This is exemplified in those studies that position obesity as a modifiable condition (Chu et al. 2007a; Chu et al. 2007c; Salihu 2008), where individuals who do not fit into the normative ideal of having a fit or thin body are obliged to take their ill health into their own hands. In this case, pregnant women are implored via medical/scientific discourse to fit their changing pregnant bodies to align with the norm that discourse helps to establish. In line with this view, Rose (2007) argues that women play a particularly interesting role in maintaining children's health. He notes that this obligation and responsibility women feel towards maintaining and optimising their families' health is bound up with their management. Thus, in their seemingly "empowered," informed, and individual interaction with medical professionals, they are being directed towards particular ways of communicating their issues, needs, and desires. Thus, as Rose argues, these seemingly benign interactions are "inescapably normative and directional...blur[ring] the boundaries of coercion and consent" (29). This is explicit in the call to prevent overweight and obesity in pregnancy via educating women, which is prevalent in the vast majority of studies. Closely related to this, Murray underlines that normalising discourses have humanist underpinnings, meaning people are subject to the disciplinary effects of the norm "while being instructed that they have a 'choice' to meet the requirements of the norm" (46). What is clear is that subjects are always already constituted in binary terms related to the normal and pathological despite their 'choice' of whether or not they would

like to participate. Pregnant women already exist in a context of epidemic obesity, and if they do not work to educate themselves, they could conceivably contribute to the epidemic, whether they know it or not.

The task of responsibilising discourse is then to implore women to freely and individually educate and empower themselves to do what is "right," namely to optimise the health of their families through weight control, and to frame this obligation as natural and normal. This has the effect of reifying the priorities of neoliberal capitalism, and the notion that all members of society are free to choose to pull themselves up by their bootstraps, so to speak. This results in completely over-emphasising individuals as the root cause and cure of their health problems, ignoring social determinants of illness, and promoting healthiness as a moral obligation, thereby blaming individuals for any ill health they experience. In the case of an issue like obesity, which is considered a universal, yet modifiable risk, this causes media, government, and the like to fixate on individuals, blaming them for the economic burden their of their ill health on society, a sentiment often iterated by the recent medical/scientific literature (Chu et al. 2007a; Chu et al. 2007b; Getahun 2007b; Krebs 2008; Reece 2008b; Chu et al. 2008; Rasmussen et al. 2008; Salihu 2008). The individuals in this case are almost always women; there is little concern for the actions men take with respect to this so-called epidemic (Whitaker 2007).

The irony is that while the literature laments the fact that poor and minority women face more risks, the responsibilising discourse leaves those who are most vulnerable and disabled by neoliberal ideology in a worse position. Significantly, these women are responsibilised, but cannot take up activities that would make them "more

responsible." Therefore, they are inescapably bad mothers by definition, bringing supposed costly, burdensome children into the world, who appear destined to have ill health and continue to inflict costs on the healthcare system. While the Special Supplemental Program for Women, Infants, and Children (WIC) - an American program - provides low income women with nutritional supplements and support, one of their mandates is also to provide nutritional education. Certainly, this program promotes breastfeeding education and support, which is valuable for low income women, especially considering the high costs of formula. There is, however, a responsibilising directive implicit in education; while low income mothers may find useful tips on how to maximise their small food budgets, it appears to me that the real problem is a lack of resources to buy food and a lack of time to prepare it. Therefore, I suggest that the impetus to educate low income families is more closely related to what the privileged believe about them than what they really need. Implicit here is the conception that low income families have not worked hard enough to improve their situations, or that their poverty is a result of their mismanaged finances or greedy spending on expensive junk foods, among other failures.

Closely related to this notion of stereotyping particular groups, I build on Kukla (2005) to suggest that women's apparent emotionality and close connection to the body - their supposedly excessive desires and thoughts and the mysteriousness of the pregnant body which necessarily lacks boundaries (cf. Tyler 2001) - intensifies their medical management. This history is reminiscent of Foucault's arguments about the shift from repressive power to productive or disciplinary power (cf. Foucault 1990, 1995). Specifically, the scientific framing of the pregnant body has consisted of more direct

management of pregnant women, through significant interventions in birth, such as forceps deliveries, widespread use of episiotomy (though both on the decline), inductions, and having women lay immobilised on their backs during delivery, for instance. I suggest that the trends I witness in the data, the move towards obliging women to take care of themselves and their fetuses, indicate that Foucault's notion of disciplinary power is at work. While medical authority arguably occupies a complex role with respect to the functioning of power - one could argue that it acts both repressively and productively - I suggest that medical authority works through the body of the pregnant woman, specifically through the ways in which she is implored to manage her body in ways that support public health goals. Here, she may focus on educating herself about pregnancy, controlling her weight, monitoring her own weight, participating in regular visits and weighings, and asking midwives and doulas to act as coaches and advocates, for instance. In the medical/scientific discourse there is clearly an imperative for women to empower themselves through education, an issue I expand upon at length in the following chapter.

**Responsibilised for cesarean sections**

One of the great ironies is that women are essentialised as reproducers, and are thereby held liable for the birthing and rearing of subsequent generations; essentialising women in such a way places significant constraints on them, while minimising and hindering their other abilities. Men's reproductive abilities, difficulties, and responsibilities, on the other hand, are entirely ignored (Inhorn 2007, 10). Many of the real issues women face as a result of pregnancy, such as pain during intercourse (7-9), discomfort and anxiety about breastfeeding (Kukla 2005, 209), or worries about birth interventions, are ignored. Thus, theorists like Inhorn argue that pregnant bodies are made docile through managing and

disciplining them to optimise their capacities to birth in ways the medical establishment deems best, namely through a model which privileges intervention (16). It should be noted that c-sections are life-saving practices which are inherently valuable in many cases. They transform birth outcomes that might otherwise be difficult or deadly to positive ones for both mom and baby. This is valuable to note because the c-sections are not an inherently problematic practice; they are entirely useful when used appropriately. However, birth activists and health analysts alike agree that the c-section rate is too high, and that women are pushed to c-sections needlessly when birth becomes difficult, namely when it is inefficient and unmanageable, and when any risk is perceived as too great.

From the perspective of many birthing activists, the increase in c-sections is indicative of excessive medical intervention; moreover, the increase of c-sections in America has recently come under fire for a small, yet significant, increase in maternal death (Johnson 2010). Given the greater tendency towards litigation in the United States, it should not be surprising that part of the reason for the increasing rate of c-sections is that obstetrics has the highest rate of litigation in medicine (Inhorn 2007, 47). Obstetrician-gynaecologists have aired on the side of caution in efforts to save infants. Considering their fears of infant death, maternal death, and the litigation that often accompanies them, they work in a way that minimises risk. In this case, c-sections are a tool readily deployed if there is any evidence that infant or mother are in distress. In all likelihood, the increased c-section rate is a combination of factors: increased birth interventions, increased average age of pregnant women (related to the flexibility of pelvic joints), increased levels of overweight and obesity, and so on.

Despite the likelihood that the increased c-section rate is likely multi-causal, I observe an interesting tendency in the data. Many studies hypothesise a link between excess pregnancy weight gain and high BMI to c-section, with the vast majority of the studies coming after 2000 (Abrams and Parker 1990; Ratner 1991; Parker and Abrams 1992; Purfield and Morin 1995; Shepard et al. 1999; Stotland et al. 2004; Vahratian et al. 2004; Dietz et al. 2005; Rosenberg et al. 2005; Vahratian et al. 2005; Hibbard et al. 2006; Siega-Riz et al. 2006; Chu et al. 2007b Getahun et al. 2007b; Arendas et al. 2008; Crane et al. 2009; Haeri et al. 2009, Kriebs 2009). Whatever the reason for the increasing incidence in c-sections, I believe the medical/scientific discourse represents a reversal in responsibility for c-sections. Rather than faulting the medical establishment for pushing a series of interventions that eventually lead to c-sections, as birthing activists might, the studies find an independent relationship between excess weight and c-sections. Take for instance one study by Lu et al. (2001) which recounted a hospital's goal of reducing the c-section rate. Regardless of their concerted efforts hospital-wide to reduce interventions, they found that the c-section rate did not decrease causing them to ascertain the "real" cause of this increase. They found that overweight and obesity were the culprits rather than doctors. While the reason that c-section is correlated with overweight, obesity, and excess weight is unclear, the studies clearly indict women's bodies as culprits. In essence, they eliminate critique of interventions in birth or other unmodifiable factors such as age, and frame the problem as one that can be modified by the mother's individual action. Certainly, it is understandable that minimising the risk of c-section via any possible means is desirable; however, it seems to me that focusing myopically on weight puts

undue blame and pressure on pregnant women, and shifts responsibility from physicians to individuals.

In this chapter, I have elaborated on how women are normalised and responsibilised with respect to their embodiment in pregnancy, and how the medical/scientific discourse is explicitly linked to both historical (and arguably paternalistic) notions of pregnancy, and dominant discourses about good mothering. I also used the example of the increasing rate of c-sections, and how women are responsibilised with respect to this specific complication.

## Chapter VII. Governmentality: Clinical intervention and public health strategies

This chapter expands upon how scientists and public health professionals suggest the problem of overweight and obesity might be reversed. In the case of this dataset, the prevailing rationale is one of individual responsibility, choice, and action. The chapter explores how the medical/scientific literature can be thought of in Foucauldian terms, as a discourse which implores individuals to align themselves with the healthy norm. Drawn extensively from the concluding sections of the vast majority of the studies, I observe the same language repeated: surveillance, monitoring, education, intervention, and prevention. This language suggests strategies through which researchers, clinicians, and public health professionals alike implore patients to be healthy, understand the extent of their risk factors, and reverse and prevent overweight and obesity. To this end, I take up the concept of "biopedagogies" and link it to these strategies aimed at pregnant women. This linking of biopower and pedagogy signifies how the regulation of the body is linked to being educated about its optimal regulation. This notion is crucial given that the medical/scientific literature calls for the education of women to curb the obesity epidemic. Additionally, governmentality is closely linked to the notion of disciplinary medicine. I take up Murray (2008), in particular who links disciplinary medicine explicitly to obesity.

First, I briefly outline the issues of governmentality, biopedagogy, and disciplinary medicine, and how they are fundamentally connected to the obesity "epidemic." I also recount the changing language evident in the medical/scientific discourse. Then I look at the groups of researchers involved in creating this discourse by taking up specific public health strategies and their relationship to this literature. I also

explain the language used, and how it focuses on individual solutions to a public problem. I explore how research groups such as Project Viva and public health campaigns such as Healthy People 2010 are linked to this discourse and education in particular. Additionally, I explore a popular idea in the scientific texts that obesity is difficult, if not impossible, to treat. Considering this, the studies focus on prevention via monitoring and education, especially of young women. This move to prevention helps us understand why the scientific studies of obesity - and women's responsibilisation - start *in utero*.

**Governmentality, biopedagogies and disciplinary medicine**

Recalling the theoretical framework laid out in chapter two, Rose (1999) builds on Foucault and argues that governmentality works through governmental strategies, such as programs, theories, and various techniques to guide individuals to work on themselves, and in this case, to manage their health and well-being through controlling their body weight. Gordon (1991) explains Foucault's interest in governmentality as a fascination with "a kind of power which takes freedom itself and the 'soul of the citizen,' the life and life-conduct of the ethically free subject, as in some sense the correlative object of its own suasive capacity" (5). Or, as in Rose's words, "[t]o govern is to act upon action. To govern is not to crush their capacity to act, but to acknowledge it and utilise it for one's own objectives" (1999, 4). Power moves through individuals, flowing via governmental strategies, such as those espoused by national public health agencies.

Biopedagogies instruct individuals on how best to govern themselves and how to manage the life of the body. Rail and Lafrance (2009) note that biopedagogies "are part

of what Foucault would call an 'apparatus of governmentality' that involves managing bodies in order to both reduce obesity and protect populations from the 'risks' associated with it" (1). They note that these apparatuses of governmentality function through surveillance and a focus on the moral righteousness of individual responsibility. These efforts to educate the population on how they should correctly manage their bodies serve to reify personal responsibility for health. So while these efforts may appear benign, they actually serve to reinforce a particular dominant discourse. Specifically, Rail and Lafrance link biopedagogies to the obesity epidemic. In terms of the medical/scientific discourse surrounding pregnancy weight gain, I suggest that medical discourse serves as a biopedagogic tool; specifically, the texts in question instruct individuals how to act and be in order to be "healthy," which is necessarily connected to neoliberal sensibilities. These texts, in their call to educate, monitor, intervene, and the like, bring clinicians and public health professionals together with patients, specifically to encourage individuals to pursue healthy living in accordance with particular scientific "facts" about obesity and weight in pregnancy. The collection of texts as a whole, and the discourse regarding the treatment and prevention of obesity, is indicative of a larger public health strategy which has as its aim the education and transformation of free individuals to solve the public health "crisis" of obesity.

I connect the issue of pedagogy to the overall project of "disciplinary medicine," especially as espoused by Murray (2008) in her book *The 'Fat" Female Body*. A Foucauldian, she notes that medicine has a disciplinary function; that is, medicine works through the deployment of particular norms and values, with the effect of inculcating individuals with an internalised will to self-monitor. I have expanded upon this issue at

length in the previous chapter, but would like to reiterate here how disciplinary medicine creates a moral obligation to adhere to normality, as abnormality is linked to pathology. Murray calls anything that deviates from the norm as "not simply...a variation, but rather...a repulsive positionality" (47). In relation to this thesis about pregnancy weight gain and the moral fortitude of having a good maternal body, she importantly argues that "by presenting healthy 'lifestyle models,' modern medical discourse refrains from explicit and/or coercive intervention into the lives of its subjects, yet simultaneously draws on the authority of the medical 'voice' to govern citizens 'at a distance' " (50). She also argues that medicine is imbued with the authority to cast the pursuit of healthiness as the pursuit of morality, responsibility, and ethical behaviour.

This is apparent in the literature, as it positions itself as the source of reliable information upon which to base public health interventions. While the bulk of each individual study consists of addressing the research question, most studies conclude with a "Discussion" or "Comment" section. These are distinct from the "Results" sections in that they list the implications of their research, their recommendations, and limitations of the study. While these sections are usually very short - a few paragraphs at most - they are extremely significant. It is here where the literature turns to how to reverse the cycle of obesity via clinical intervention. These studies are epistemologically trustworthy (Van House 2002); that is, clinicians put the results of the studies and their recommendations in high regard. In earlier studies, the researchers conclude with the suggestion that monitoring women will ensure sufficient weight gain. In later studies, researchers discuss monitoring and educating women as vital to the prevention of obesity. Considering that obesity is often cited as a "modifiable condition," (Baeten et al. 2001; Stotland et al.

2006; Gunderson et al. 2008; Salihu 2008) it is not surprising that the research would result in strategies promoting weight management. However, it is surprising that the vast majority of studies privilege the notion that this can best be done by changing individual women's behaviour. It is likewise surprising that the studies promote interventions that they have not explicitly studied, and very few suggest understanding the psychological and sociological factors bound up with weight gain in pregnancy prior to making suggestions for intervention. I argue that this has the effect of reifying women as the singular cause of obesity. For instance, Arendas et al. (2008) studied the negative effects of obesity on pregnancy, and concluded that it causes complications for both mother and fetus. However, in their conclusion, they suggest that "[i]nterventions promoting pre-pregnancy weight loss and the prevention of excessive during pregnancy must begin in the preconception period" (484). Not only did their research not address the issue of the ease or difficulty of losing weight prior to pregnancy, the success of weight interventions in pregnancy, or the impact of pre-pregnancy weight loss and dieting on gestational weight gain (which given the evidence about dieting prior to pregnancy, is likely to result in the opposite of the desired effect), but they assume that excessive gestational weight and obesity have no other cause than individual mismanagement of body weight.

Interestingly, research that understands women as responsible for the problem of obesity actually contradicts other scientific discourses addressing the problem of obesity, especially those emerging from endocrinology. While studies such as those from Reece (2008b) suggest that obesity is multi-causal (and not due to a lack of individual responsibility alone), most studies privilege the notion of obesity's origin in personal habits, especially with regards to eating and exercise - even when groups such as the

World Health Organization proclaim society to be "obesogenic," meaning that just by virtue of living in the society we do, we are more predisposed to overweight and obesity than other societies. Endocrinological researchers report findings that "obesogens" in our environment - pollutants, pesticides, preservatives in food, hormones given to livestock, high fructose corn syrup and soy - have a great impact on the collective obesity problem (Grün and Blumberg 2006). These obesogens disrupt the endocrine system; they mimic hormones that promote the production of fat cells, supposedly contributing to obesity; so, other competing scientific discourses dispute the notion that obesity is a result of individual eating habits. In privileging certain discourses about the origin of the obesity epidemic (specifically that women's weight and eating habits rather than environmental problems fuel obesity) the researchers explicitly set the stage for particular governmental apparatuses or public health strategies targeting the individual to emerge. Moreover, the recommendations within the studies shape these strategies, regardless of the fact that their research did not investigate whether interventions work.

**The language of intervention**

Interestingly, as I have mentioned above, the vast majority of the studies promote a specific type of clinical intervention into the individual behaviour of pregnant women. Between 1990 and 2009, there is clearly a tendency towards recommending that clinicians monitor and record pregnancy weight gain; if women fall outside the recommendations, they instruct clinicians to intervene, advise and educate women as to the 'correct' and 'normal' pattern of weight gain. As argued by Abrams and Selvin (1995), and implicit in most literature, deviations from the ideal pattern can be used as a screening tool for clinicians to determine who requires intervention (168).

As I argued in the last chapter nonetheless, there is still a stable dominant discourse at work throughout the dataset. While the discourse regarding optimal pregnancy weight gain has changed to reflect the obesity 'epidemic,' the discourse supporting women as responsible, blameworthy, unruly and mysterious persists throughout the literature. In much the same way, I observe a consistent theme of managing women through the medical encounter throughout the dataset. Through educating pregnant women about optimal pregnancy weight gain, it is implicit that these women should internalise these messages about health and risk, and thus, change their behaviour to transform their abnormal, unhealthy pregnancy into a normal, healthy one. Their previous behaviour, intended or not, is corrected through proper education, as guided by the clinician, and clinicians solicit women's proactive engagement to minimise risk and optimise health. For instance, Herring et al. (2008) note that women require clinicians to correct their misperceptions about risk, and that they are receptive to clinical interventions with respect to weight gain (54).

I observe particular language repeated in the recent literature. Language like "educating," "correcting," and "encouraging" suggests a more definitive answer to health issues, which requires the individual to take in the information and employ it with little question or room for error. This language does not crush and punish the patient, rather, it focuses on the patient interacting with the clinician, empowering her to confess and take up the correct behaviour. Similarly, the call to educate women serves to discipline rather than punish. Education about health gives women the tools with which to change their lives in positive ways. It is vital that this feels empowering and positive to individual women. When being healthy is linked explicitly to being a good mother and a good

citizen, then one can see why being educated feels empowering. Through this education and constant contact with medical professionals, women may be lauded for reaching healthy benchmarks for weight gain, and other good behaviours in pregnancy. In this way, women monitor their own pregnancies, managing themselves in ways that give them social rewards and personal satisfaction.

Of considerable importance is the fear women may experience when they do not do what is "best" for the fetus. While I have argued that power in these interactions is more disciplinary than repressive in nature, it must be noted that repressive power may still be at work. In the case of women being concerned for the livelihood of the fetus, and not simply the optimisation of the fetus' health, medical authority may be imbued with more repressive power. While this is not a typical understanding of repressive power, in that it is not about fear of violence from the state, there is a fear of death at work when discussing the health of the fetus. Not adhering to medical guidance, in that case, could result in death of the fetus; depending on one's mental state, understanding of personal responsibility or obligation, and level of support, one can view this as a punishment for incorrect behaviour in pregnancy. Moreover, fears related to the fetus' death may ensure that power can function in ways that are productive, yet also repressive. I suggest it is essential for medical/scientific research to understand women's fears, guilt, and anxieties related to pregnancy, and especially pregnancy loss, which women may perceive as their fault.

Significantly, the literature also cites the importance of early prenatal care (Wolfe et al. 1991; Stevens-Simon et al. 1993; Muscati et al. 1996; Salihu 2008). In my view, this is significant for several reasons. First, the researchers rightly suggest that all

pregnant women should have access to prenatal care, and that any costs associated with providing healthcare are minimal compared to the costs associated with ill health as a result of obesity and other health problems pregnant women face. The call for prenatal care is certainly progressive from this point of view. In the same instance, however, extensive prenatal care heightens the will to surveillance and thereby intensifies women's medical management. Increasing prenatal visits allows for further surveillance, identification, and intervention. But, it is not only prenatal care that is significant in the literature. In terms of preventing overweight and obesity, researchers note that antenatal care is just as significant to ameliorating the obesity epidemic. Rooney et al. (2005) promote nutritional counselling during and after pregnancy, as do Feig and Naylor (1998), and Hickey et al. (1997a).

**Researchers and participants**

It is critical for me to address the issue of who is doing the research. Obviously, researchers are affiliated with particular institutions, and medical and scientific research proceeds in a far more communal manner than research in the humanities or social sciences; in these research groups, there are general topics of research, while individual researchers take up specific research questions within that area, publishing them as principle investigators. When reading my thesis, it may give the impression that more research centres are represented than actually exist. For instance, I have listed multiple studies by Gillman (2006), Gillman et al. (2008), Oken et al. (2007a, 2007b, 2008), and Kleinman et al. (2007). If one looks specifically who are the others that make up "et al.," one can see that these investigators publish together, and have the same core assumptions and language in their publications. It is typical for researchers in medicine, science and

psychology to publish prolifically and early; this is vital for their funding and future careers. The high stakes nature of scientific "discovery," combined with the valorisation of evidence-based medicine and the fact that graduate students publish with their advisors and work in their labs makes for a highly competitive field in which publishing is more important and prolific than ever. The group I mention above, along with investigators Rich-Edwards, Herring, Radesky, and Taveras, make up Project Viva: A Study of Health for the Next Generation, formally established in 2006. They describe their project as follows:

> Project Viva is a ground breaking longitudinal research study of women and children. The goal of Project Viva is to find ways to improve the health of mothers and their children by looking at the effects of mother's diet and other factors during pregnancy on her health and the health of her child. The information we collect enables us to investigate, for example, the effects of diet on child development and obesity, how diet and the environment influence the development of asthma in children, and how a woman's pregnancy is affected [by] lifetime experiences of racism or violence.
>
> The origins of Project Viva go back over a decade. Dr. Gillman and his colleagues were intrigued by the notion, then just emerging, that what happens very early in life - even before birth - can have effects on the health of infants, children, perhaps adults too. They became particularly interested in how a woman's diet during pregnancy can affect the health of her children. To answer these questions, Dr. Gillman and his colleagues submitted an application for the National Institutes of Health (NIH) to fund Project Viva. (Project Viva)

What is particularly appealing about Project Viva for its funding agencies - the NIH, March of Dimes Foundation, and U.S. Centers for Disease Control - is the longitudinal nature of the studies. Longitudinal studies are particularly useful for researchers as a kind of "gold standard" because it is only in tracking changes over time that researchers can definitively ascertain causation. Project Viva has given rise to other such research groups doing longitudinal studies of pregnancy nutrition and weight, such as The Alberta Pregnancy Outcomes and Nutrition team, which has the cutesy (if sexist) acronym

APrON (Apron Study). APrON, established in 2009, is the first study of its kind in Canada; its principle investigators aim to research ten thousand pregnant women from Edmonton and Calgary over the next 5 years. Their Vision Statement is " to improve the health and long-term potential of mothers and newborn babies in Alberta by identifying the role of nutrition in mental and neurodevelopmental disorders, and long-term neurocognitive function" (Apron Study). These 16 investigators (significantly more than Project Viva's five) plan to study the veracity of the old adage "you are what you eat." APrON is funded by the Alberta Heritage Foundation for Medical Research.

Studies which are not longitudinal point to correlation rather than causation. In an era of evidence-based medicine, randomised-controlled trials are considered key; however, in studies of people, randomised-controlled trials are not always possible, nor are they ethical. The longitudinal nature of the studies means that women and their children are in sustained interaction with researchers. Women are monitored for several years; moreover, they are called upon to help or assist public health professionals. This involves women in the process, "empowering" them, and making them feel their contribution creates and sustains an essential public good. APrON's website calls on pregnant women to "Get Involved," promoting the experience of being a research participant as exciting and valuable. Not only are participants handed the serious job of continuing the scientific project, but they are seen as responsible citizens who are increasing the health of the nation. This is reminiscent of Kukla's (2005) observations about breastfeeding in revolutionary France, where women were called upon to breastfeed their children for the public good, as a civic duty. What is more, images of liberty coalesced with images of maternity. In much the same way, today's maternity is

inscribed with notions of civic duty towards healthiness and responsibility. When good "maternality," a word I use to connote women's successes or failures in approximating the ideal of being "maternal," becomes enmeshed with a particular kind of body, namely a slender, healthy, white body, as I have argued throughout this thesis, I suggest one's value as a citizen can be immediately evaluated. The fat body acts as a "virtual confessor" of immorality, and one's value can immediately be ascertained. Poor, overweight African American women are evaluated from the outset and categorised as bad mothers. Rather than requiring extended study, these individuals are pathologised simply by being looked at, not only in the clinical setting, but in public. Their pathology is linked to bad (bio)citizenship, and in the case of pregnancy, bad motherhood or maternality.

Foucault argued that institutions such as the prison or hospital served as major loci of knowledge formation; deviant subjects were researched at length, and their abnormalities recorded, catalogued and analysed. The participants of these studies, though not psychiatric patients or prisoners, are subject to the same kind of scrutiny and surveillance, albeit to a different degree. This is especially interesting considering that underweight and overweight women and minorities are identified through these studies, something I take up below. In the course of participating in Project Viva or APrON, individual women's actions, bodies, mental state, and food intake are monitored. Project Viva tracks women in pregnancy until their children are three years old. They followed approximately one thousand mother-child pairs via prenatal records, at home visits, and access to medical records (Gillman et al. 2008). Like Project Viva, APrON's timeline is similar, with the very interesting caveat that their "vision is to follow the children of

APrON until they might have their own babies one day in the future!" (Apron Study). This surveillance is idealised as spanning generations; it also calls for regular monitoring of this group of women. This, in combination with the reification of individual responsibility for health, ensures that generations of women internalise the imperative of self-surveillance. In their continued participation in these projects, women learn to monitor themselves.

These studies become more and more thorough, especially as their funding grows. In APrON, for instance, there are both questionnaires to be completed and regular doctor's appointments to attend. In pregnancy, questionnaires cover the following issues: diet and activity; mental and physical health; medical history, and questions about the biological father. The appointments involve taking account of maternal nutrient status (blood); maternal urine; anthropometrics (body measurement); and maternal and paternal DNA. After pregnancy, questionnaires address the following: infant health and development; maternal mental and physical health; infant/child feeding; and maternal diet and activity. At appointments, clinicians investigate: maternal nutrient status (blood); prenatal and delivery records; child neurocognitive assessment (at age 3); maternal and child anthropometrics, and breast milk. Post delivery, questionnaires and appointments occur at 3 months, 6 months, 1 year, 2 years, 3 years, and so forth. The studies call for extensive involvement in the lives and health of their participants.

One can see how the notion of biopedagogy is utilised here. Pregnant women must be educated on how to participate in the study, and why their participation is vital. The researchers structure the research in such a way that women's lives are highly compartmentalised; women must turn inwards and partake in analysing their own

physical and mental health in great detail. Along with their regular doctor's visits, participants must go through additional clinical examinations. The extensive check-ups that already exist in pregnancy arguably serve to discipline and educate women on how to best optimise their health and the health of their fetuses. The additional surveillance that the studies offer intensify that discipline.

While newer studies focus on specific food intake, the literature that I analysed did not. However, the medical/scientific discourse that I observed led directly to the implementation of new studies looking at specific nutritional intake in pregnancy. APrON, for instance, asks women to account for their daily food intake in the questionnaire segment of their research. This arguably makes women more aware of their food intake in the first place; from the outset it functions as a method of discipline. It is oft said that the most successful dieters are those who write down their daily food intake and measure their weight regularly (Mitchell 2008). I cannot help but also notice that individuals with eating disorders "succeed" at losing weight in the same way. In treatment, these people are counselled against this behaviour because it encourages unhealthy obsession with food. In effect, the pregnant women participating in the studies are encourage and educated to partake in behaviour that constantly reminds them of their weight (and if they weigh too much) or what they are eating (and if they are eating too much) for the sake of health and research that best ascertains what is healthy. Yet again, this paradox of creating healthy behaviour through unhealthy obsession with food and weight exists. The studies may not create this obsession in all participants, but it arguably emerges out of a society that has a problematic relationship with weight and food.

Nationwide campaigns to curb obesity and other illnesses also exist, and some of

the literature emerges out of government institutions. Researchers Chu, Dietz, Rasmussen, and Schieve, for instance, work for the Centers for Disease Control and Prevention (CDC). The CDC is a major branch of the United States Department of Health and Human Services. Within the CDC, there is a branch called The Division of Nutrition, Physical Activity, and Obesity (DNPAO), which aims "to reduce obesity and obesity-related conditions through state programs, technical assistance and training, leadership, surveillance and research, intervention development and evaluation, translation of practice-based evidence and research findings, and partnership development" (CDC). Fundamentally, the DNPAO conducts research, and makes policy recommendations and clinical guidelines with respect to treating overweight and obesity. It also provides visitors of the site with the opportunity to educate themselves about obesity, starting with the most popular and basic measure, the BMI. The site allows visitors to calculate both adult BMI and child BMI, and offering interpretation of the result and links to achieving a healthy weight. Concerning healthy weight, the DNPAO asserts, "It's not a diet, it's a lifestyle," evoking a sentiment of personal responsibility. In a similar vein, the Public Health Agency of Canada and Health Canada work in tandem on "It's Your Health," a series of educational PDFs on various topics, of which pregnancy and obesity are two. Additionally, both organisations have similar strategies of research and recommendation for both population obesity, child obesity being key. (Public Health Agency of Canada, Health Canada)

Closely related to the above strategies targeting obesity, the Department of Health and Human Services also created the Healthy People initiatives. These public health goals are set up in 10-year increments, and several studies cite addressing Healthy People

2010 objectives as rationale for their work (Howie et al. 2003; Stotland et al. 2004; Joseph et al. 2008). Currently, they are implementing Healthy People 2020, having just finished Healthy People 2010. Canada implemented similar campaigns, also with the Healthy People moniker. In the United States, several of the 28 major areas of interest are related to topics I analyse in this thesis: diabetes; health communication; maternal, infant, and child health; nutrition and overweight; and, physical activity and fitness. The Healthy People 2010 website has a section called "Be a Healthy Person," which asks reader to make healthy choices and gives them access to links on health information. In Canada, <www.healthycanadians.gc.ca> claims to be "your source for a healthier lifestyle." This website is a resource provided by the Canadian government for individuals to find information about how to best be healthy: it recounts everything from how to be active, to healthy pregnancy, to food safety.

National campaigns in both the United States and Canada work under the assumption that pregnancy, overweight, and obesity are potential issues that can be remedied through surveillance, intervention, education, and prevention. Both countries understand overweight and obesity as costly, and understand children and low-income minorities to be at particular risk. Even though structural issues are privileged, the strategies, especially as evidenced through the American institutions, still operate under the rubric of individual "empowerment" through education; they provide the visitor with simple tools to classify themselves into categories: obese, overweight, normal, and underweight, along with the health risks incurred (or not) because of one's weight. Additionally, they provide educational materials on how to individually achieve a normal weight. Considering Canada's more state-driven political ethos, it should not be

surprising that Canadian institutions discuss government initiatives such as ParticipACTION or promoting Canada's Food Guide. However, it should be noted that these types of strategies are still intended to teach individuals how to best conduct themselves, and they are entrusted with the freedom and the responsibility to make the right choices.

**Identifying at risk individuals and populations**

As I mentioned above, the fat body is an easy target. Since fatness itself is understood as a disease, identification of disease is done simply through looking at a patient (though the line between normal and overweight, and overweight and obese might be blurry). Perhaps much of the reason that overweight and obesity are focused on so intently is because they are relatively simple measures. In terms of pregnancy weight gain, consistent prenatal care and the regular weighings mean that risky populations are more readily identifiable. For people who do not see the doctor on an annual basis or who cannot afford or access regular treatment, pregnancy is a period of time when doctors may have more regular access to patients. This "captive audience" presents clinicians with the perfect opportunity to redirect or reeducate those women who do not adequately line up with the medical norm. All women are educated (and thus responsibilised) through this process, some more successfully than others. Those who present clinicians with an "obstetric challenge" (Edwards et al. 1996) are identified as pathological subjects who require extra monitoring, counselling, advice, and above all, education of the risks their bodies and behaviours pose to their health and the health of their fetuses.

Castel (1991) argues that subjects of governmentality are no longer indivduals, but a combination of risk factors. This depersonalised approach is evident in the medical/scientific literature. Most of the studies note the risks that overweight and obese women pose to their fetuses or risks of gaining in excess of the IOM recommendations. Likewise, the literature privileges the notion that certain people are more at risk for obesity than others, namely women, minorities, those occupying the lower class, and children. Moreover, there is an insistence on educating women about risk. For instance, Johnston and Yancey (1996) note the importance of the clinician making the patient aware of the risks she brings to the pregnancy and as a result of excess weight gain. This is much in keeping with my argument that women's thoughts, beliefs and feelings are not taken into account. As Castel argues, the medical encounter has become increasingly depersonalised, especially in an era of evidence-based medicine, where the patient is simply a list of problems, a history of appointments, an "objective accumulation of facts" (1991, 282), and so forth.

Human behaviour, although a puzzle to be understood by medical science, is not viewed as highly personal and complex, but as risky or not, or at the most, high or low risk (Carmichael and Abrams 1997). This preoccupation with risk and the depersonalisation of behaviour with respect to healthiness arguably results in reifying personal responsibility for behaviour. This appears contradictory at first, but the key is that individuality is understood far too simplistically. Instead of individuals having complex and multifaceted ideas and experiences that result in different thoughts, actions, and behaviours, the medical encounter tends to reduce human behaviour to a simple cost-benefit analysis. Under this logic, the rational individual would follow best evidence, so

what naturally follows is educating patients to do what is best. What this minimises is the possibility that individuals do not act in a rational manner. Take for instance the rather common struggle to lose weight. Best evidence combined with rational behaviour suggests that it should be easy to lose weight because the science of nutrition dictates that weight loss is a simple matter of consuming fewer calories than one expends on a daily basis. Yet, this proves a difficult task, even for the most rational individuals. Many people know this fact rationally, yet cannot manage for a variety of reasons: they crave sweets, their diets backfire, their bodies do not cooperate for some reason, and so on. While the medical/scientific literature has the desire to provide a straightforward and certain answer for problems associated with health, people are not as simple as risky and not risky, or normal and abnormal.

**Treatment impossible, prevention necessary**

In the medical literature on obesity, there is a tendency to align overweight and obese people into the healthy standard. However, most of the studies admit that obesity is very difficult to treat (see for example, Oken et al. 2008) An obese child is likely to become an obese adult, and an obese adult is unlikely to lose weight, so it becomes an imperative to prevent obesity from the outset. Considering this and the "fact" that the intrauterine environment is - apparently - the seat of future obesity, prevention in pregnancy, including monitoring and educating pregnant women and those who might become pregnant in the future, is of paramount importance. Of particular concern are overweight and obese women who would like to become pregnant. In the view of the medical experts, overweight and obese women should lose weight before trying to conceive and should avoid pregnancy until they do. One study suggested educating school age girls

about proper nutrition, not simply to improve their own health, but primarily as a preventative measure for when these girls grow up and become pregnant in the future (Getahun et al. 2007a). Not only does this problematically assume that all young girls will want to have children, but it also prioritises women as reproducers first and foremost, and holds them entirely accountable for child and population health.

Additionally, the issue of clinical management of women's weight as difficult is significant, and points again to the notion that women's bodies are excessive and out of control. Siega-Riz and Laurie (2006) and Kuhlman et al. (2008), for instance, note that the clinical management of women is difficult, suggesting that women and their bodies do not readily cooperate in the process of medical management. Moreover, their inability to estimate risk and their ignorance with respect to health and diet communication (Herring et al. 2008) ensures problems with their medical management. Yet, in this same study, Herring et al. argue that women are receptive to doctor's advice, an argument substantiated by researchers such as Taffel et al. (1993), suggesting that educating women is difficult, but possible. If women can be educated through strategies brought about by the medical/scientific discourse, they can individually be normalised and responsibilised in the name of population health. So, interventions aimed at educating women at the right time - when they are more likely to be in consistent contact with medical professionals and when the risks their bodies present have the greatest impact on future generations - become the central strategy to promoting public health. These educational interventions have the effect of imploring pregnant women to best manage their weight gain, especially to stave off the possibility that their children will grow up to

be overweight or obese, an eventuality that is associated with significant costs to the economy, their health, and their social status.

In sum, I have recounted how public health strategies are bound up with an ethos of governmentality. I have discussed how power focused on the body becomes entwined with issue of education, or what is termed biopedagogy. I argue that through the medical/scientific discourse, the researchers valorise individual action, while also imploring the patients they research to mould themselves into particular types of bodies, specifically good maternal bodies.

## Chapter VIII. Conclusion

Throughout this thesis, I sought to answer several research questions which emerged out of my interest in Foucauldian theory, the sociology of health, the sociology of science, feminist theories, and research on embodiment. Considering my curiosity about weight gain, attractiveness, risk, and responsibility in pregnancy, I saw an opportunity to do original research when I read news articles on changing pregnancy weight gain guidelines and their relationship to the so-called obesity epidemic. Specifically, I decided that discourse analysis of a discrete set of medical/scientific texts would be a valuable (and manageable) approach to describing a particular phenomenon through a Foucauldian lens.

My first perusal of the documents alerted me to the fact that 1990 was an important landmark in the history of the Institute of Medicine (IOM) guidelines on weight gain in pregnancy. Conveniently, the guidelines were revised in May 2009. This provided me with a natural timeframe to study. I studied three sets of questions throughout this thesis: 1) How has scientific discourse helped create an ideal body and weight for pregnant women? How has that ideal weight shifted over time and was is its significance?; 2) What is its connection to women's normalisation and responsibilisation?; And finally, 3) How is this public health discourse related to the imperative of governmentality? These sets of questions were used to divide the substantive chapters of the thesis.

In summary, I have argued that medical/scientific discourse, informing and informed by the dominant cultural discourses about pregnancy, motherhood, and obesity,

has a profound impact on women's ideal embodiment in pregnancy, and that this discourse has shifted over time to reflect our collective anxieties about the body, health, culpability, and risk. I have claimed that women are responsibilised by medical/scientific discourse in that they feel an obligation to their health and the health of their fetuses. Additionally, they are responsibilised by a desire to be good mothers, and by extension, good citizens. Finally, I have argued that there is an imperative of governmentality at work in the medical/scientific discourse, which implores women to manage their bodies responsibly, and does so through clinical and education interventions.

From my initial research, I noted that the language and expectations surrounding pregnancy had changed throughout the time period I have studied: 1990-2009. I suspected that the move away from "eating for two" was linked to worries about weight. I explored the first set of research questions in the chapter "Pregnancy weight gain: The dominant discourse shifts." I did this through understanding the themes, trajectory, and language of the discourse and from literature regarding ideal weight, the obesity "epidemic," and pregnant embodiment. Through addressing these questions, I clarified how scientific inquiry is inexorably linked to culture, and in this case, how it is linked to a culture that is increasingly hostile towards overweight and obesity.

In the early 1990s, researchers were primarily concerned with the issue of low birth weight and fetal death. Researchers and clinicians alike deemed this risk too great, and accordingly, recommended greater weight gains in pregnancy to increase fetal health and livelihood. In the mid-1990s, I observe a move towards looking more closely at both the benefits and risks of different amounts of weight gain. From 2000 and on, the medical/scientific literature privileges the notion that excessive weight gain is almost

always risky, especially to the mother's future weight status. The last distinction I make is that the most recent literature reflects the cultural obsession with the overweight and obesity "epidemic," and panic about women's ability to program children's obesity *in utero* erupts. The importance of staving off overweight and obesity, as juxtaposed with early research and clinical objectives to stave off death and promote livelihood, led me to make the argument that the data implicitly supports the notion that obesity is a fate worse than death. Recent medical/scientific literature on the specificity of food intake offers the opportunity to extend the concepts of this thesis into another similar project. The focus on particular types of food would allow the researcher to focus even more closely on issues of class and "race."

While the recent medical/scientific discourse strongly suggests that women's excessive weight gain in pregnancy is risky - clearly positing women as the singular and most significant origin of obesity - it is not only the recent data that suggests women are responsible for the fetus' health. In the early data, women's inadequate gestational weight gain resulted in poor outcomes. Only women's actions to better themselves in pregnancy, to responsibilise themselves, were understood as being able to minimise the health risks to the fetus. The later data holds women accountable for optimising the health of fetuses. Since overweight and obesity were classified as diseases to be overcome, I suggest that focusing on women's role in forging their children's obesity renders them carriers of disease - in effect, infectious and contagious. Interestingly, the focus on certain groups of women, namely young, disadvantaged African American women, emphasises their culpability in spreading disease. I make the argument that women act as a scapegoat upon

which the problems of obesity are mapped, and that moral panic about overweight and obesity ensues accordingly.

Throughout the chapter on weight, I note that the data lacks mention of women's experiences. This is not surprising, considering the increasing importance of evidence-based medicine in scientific inquiry. Utilising women's accounts of their experiences in pregnancy or sociological accounts, for instance, would be considered unscientific. However, this lack prevents a nuanced treatment of these issues, especially in how women feel about pregnancy weight gain, how difficult it is for them to gain or lose weight, their anxieties, and the effects of both research and the recommended clinical interventions on women. For future research, I recommend taking women's experiences into account through interviewing pregnant women, being especially cognisant of their interactions with clinicians, their self-surveillance, and emotions.

Next, I delve into the following research question: What is the medical/scientific discourse's connection to women's normalisation and responsibilisation? Given this, I titled this chapter "Responsibilising pregnant bodies: An extension of mother-blaming." In this section I clarify the connection between cultural notions of the "good mother" and an ideal pregnant form for women as gleaned from medical/scientific discourse. I also ascertain the gendered nature of the discourse of obesity, and how it relates to stereotypical notions of femininity.

I have also discussed how cultural and medical/scientific discourses are tied to a history of understanding pregnancy as a mysterious time when women's desires were thought to pollute the womb and damage the fetus. I have argued that this ethos persists

throughout the data, in that women's bodies are mystified and problematised, and their temperaments difficult and prone to unruliness. Additionally, I argue that when women do not conform to the norm, and do not responsibilise themselves, they are considered bad mothers. Not gaining weight in accordance with clinical guidelines leaves women culpable for the health risks the fetus incurs, and its future ill health - in this case, women are responsible for their children's overweight and obesity. Accordingly, women are responsible for the childhood obesity epidemic generally, and since the literature understands adult obesity as a natural outcome of overweight and obesity in childhood, women are responsible for the societal problem of obesity. Women's responsibility to raise the next generation, therefore, actually begins before their children are even born, i.e., in pregnancy. The state of their bodies in pregnancy and their children's bodies is explicitly linked to good motherhood and citizenship; their successes are marked by their ability to optimise fetal health. In this case, they do so by monitoring their own bodies, food intake, and weight. Since the obese body is a "virtual confessor" (Murray 2008), one's inner self and morality is read by the public and clinicians just by virtue of being seen. Significantly, overweight and obese bodies are framed as costly and burdensome.

In the last part of this chapter on normalisation and responsibilisation, I discuss how the medical/scientific literature reframes the argument about c-sections. Rather than addressing critiques that c-sections are excessive and often inappropriate, the medical/scientific discourse frames c-sections as a risk of overweight and obesity, not resulting from a failure of medical authority or over-medicalisation, but from the failure of women's bodies themselves. While it is not yet clear why the correlation between overweight and obesity and increased rates of c-section exist, the medical/scientific

discourse clearly places the onus back on individual women to change their behaviours in pregnancy, rather than clinicians changing theirs. In such a way, women's complaints about excessive interventions in pregnancy and birth are rendered baseless; after all, the medical/scientific literature positions c-sections as a natural result of excessive gestational weight gain or pre-pregnancy overweight and obesity. An in-depth analysis of this aspect of the discourse would be a fruitful area of future study.

In Chapter VII "Governmentality: Clinical intervention and public health strategies," I addressed how public health discourse relates to the imperative of governmentality, as a clinical intervention at the individual level to prevent obesity at its origin: *in utero*. The solution to the problem of obesity is envisioned as one of imploring individuals to manage themselves and optimise their health. This is directly related to the notion of "biopedagogy," which refers to the strategies used to educate individuals on how to best care for their bodies, and ensure population health and well-being. This imperative is evident in the dataset, as researchers suggest that women can and need to be educated to prevent obesity. Particular women, namely those who are poor and African American, supposedly require more education than others because they lack education from the outset, and because they are more "prone" to problems of overweight and obesity.

Additionally, I recount the importance of particular research groups in framing dominant discourses regarding pregnancy weight gain, and how they give rise to other research groups with similar frames of reference and research objectives. Following Foucault, I argue that these research facilities act to divide normal women from pathological ones, and reinforce values surrounding overweight, obesity, health,

responsibility, risk, individuality, and prevention. In particular, the medical/scientific discourse tends to minimise the variety of human experience, and how this might affect their health. Instead, the focus is on dividing individuals into two groups: risky and not risky. Likewise, the focus is on preventing risk through monitoring and surveying individuals. The medical/scientific literature upholds the notion that obesity is difficult or impossible to treat, and so the most important task is to prevent overweight and obesity by any means possible. Significantly, these discourses refute the possibility that other factors play a significant part in shaping the problem of overweight and obesity. The recommended interventions only focus on women's actions rather than on any mitigating factors such as the quality of food, pollution, and so forth.

Finally, I argue that the dominant discourse about women is that they are difficult to manage in pregnancy, which links to my previous observations about pregnancy as a time of potential unruliness. Regardless of this problem that women pose to society at large, the scientific/medical discourse recommends educating them, especially during pregnancy, which is seen as vitally constituting the health of new generations.

One final area requiring further research concerns a discourse analysis of the public health campaigns targeting pregnant women because of the variety of literature and other media that women are subject to. I also think that sociological analysis of the research units themselves would be highly interesting. This could take the form of an analysis of the interactions between researchers and pregnant women along with interviews of those involved in the process.

In this thesis, I have undertaken a Foucauldian analysis of medical documents, adding to the advancement of knowledge in this area. What I believe this thesis - and the medical literature - lacks is an account of and by the women themselves. While I make an effort to discuss the lack of women's voices in the medical/scientific literature, and critique the literature from a perspective I believe would benefit them, this thesis does not explicitly address their concerns, nor can I guess what other concerns they may have brought to my analysis. A more comprehensive study would have included interviews with pregnant women about their experiences as they go through their pregnancies and are responsibilised into their role as "good mothers" via their weight. In sum, I have argued that the changing nature of the medical/scientific discourse reflects a collective anxiety about the body. I have argued that medical discourse on weight gain in pregnancy has created an embodied ideal as a requirement of motherhood and femininity; more recently this ideal has necessarily been linked not only to dominant discourses of obesity, which is seen as costly, burdensome, and undesirable, but also to dominant notions of good motherhood.

**Primary Sources Cited**

Abenhaim, H. A., R. A. Kinch, L. Morin, A. Benjamin, and R. Usher. 2007. Effect of prepregnancy body mass index categories on obstetrical and neonatal outcomes. *Archives of Gynecology and Obstetrics* 275, (1) (Jan): 39-43.

Abrams, B. 1994. Weight gain and energy intake during pregnancy. *Clinical Obstetrics and Gynecology* 37, (3) (Sep): 515-27.

———. 1993. Prenatal weight gain and postpartum weight retention: A delicate balance. *American Journal of Public Health* 83, (8) (Aug): 1082-4.

Abrams, B., S. L. Altman, and K. E. Pickett. 2000. Pregnancy weight gain: Still controversial. *The American Journal of Clinical Nutrition* 71, (5 Suppl) (May): 1233S-41S.

Abrams, B., and J. D. Parker. 1990. Maternal weight gain in women with good pregnancy outcome. *Obstetrics and Gynecology* 76, (1) (Jul): 1-7.

Abrams, B., and S. Selvin. 1995. Maternal weight gain pattern and birth weight. *Obstetrics and Gynecology* 86, (2) (Aug): 163-9.

Anderson, J. L., D. K. Waller, M. A. Canfield, G. M. Shaw, M. L. Watkins, and M. M. Werler. 2005. Maternal obesity, gestational diabetes, and central nervous system birth defects. *Epidemiology (Cambridge, Mass.)* 16, (1) (Jan): 87-92.

Arendas, K., Q. Qiu, and A. Gruslin. 2008. Obesity in pregnancy: Pre-conceptional to postpartum consequences. *Journal of Obstetrics and Gynaecology Canada : JOGC = Journal d'Obstetrique Et Gynecologie Du Canada : JOGC* 30, (6) (Jun): 477-88.

Barton, J. R., J. M. O'Nan, N. K. Bergauer, D. L. Jacques, and B. M. Sibai. 2001. Does a lean prepregnancy body mass index influence outcome in pregnancies complicated by mild preeclampsia remote from term? *Hypertension in Pregnancy : Official Journal of the International Society for the Study of Hypertension in Pregnancy* 20, (3): 283-90.

Bianco, A. T., S. W. Smilen, Y. Davis, S. Lopez, R. Lapinski, and C. J. Lockwood. 1998. Pregnancy outcome and weight gain recommendations for the morbidly obese woman. *Obstetrics and Gynecology* 91, (1) (Jan): 97-102.

Bodnar, L. M., A. M. Siega-Riz, and M. E. Cogswell. 2004. High prepregnancy BMI increases the risk of postpartum anemia. *Obesity Research* 12, (6) (Jun): 941-8.

Bracero, L. A., and D. W. Byrne. 1998. Optimal maternal weight gain during singleton pregnancy. *Gynecologic and Obstetric Investigation* 46, (1): 9-16.

Brennand, E. A., D. Dannenbaum, and N. D. Willows. 2005. Pregnancy outcomes of first nations women in relation to pregravid weight and pregnancy weight gain. *Journal of Obstetrics and Gynaecology Canada : JOGC = Journal d'Obstetrique Et Gynecologie Du Canada : JOGC* 27, (10) (Oct): 936-44.

Butte, N. F., K. J. Ellis, W. W. Wong, J. M. Hopkinson, and E. O. Smith. 2003. Composition of gestational weight gain impacts maternal fat retention and infant birth weight. *American Journal of Obstetrics and Gynecology* 189, (5) (Nov): 1423-32.

Byers, B. D., A. Betancourt, F. Lu, G. D. Hankins, M. Longo, G. R. Saade, and E. Bytautiene. 2009. The effect of prepregnancy obesity and sFlt-1-induced

preeclampsia-like syndrome on fetal programming of adult vascular function in a mouse model. *American Journal of Obstetrics and Gynecology* 200, (4) (Apr): 432.e1,432.e7.

Carmichael, S., B. Abrams, and S. Selvin. 1997. The pattern of maternal weight gain in women with good pregnancy outcomes. *American Journal of Public Health* 87, (12) (Dec): 1984-8.

Carmichael, S. L., and B. Abrams. 1997. A critical review of the relationship between gestational weight gain and preterm delivery. *Obstetrics and Gynecology* 89, (5 Pt 2) (May): 865-73.

Caughey, A. B. 2006. Obesity, weight loss, and pregnancy outcomes. *Lancet* 368, (9542) (Sep 30): 1136-8.

Cheng, Y. W., J. H. Chung, I. Kurbisch-Block, M. Inturrisi, S. Shafer, and A. B. Caughey. 2008. Gestational weight gain and gestational diabetes mellitus: Perinatal outcomes. *Obstetrics and Gynecology* 112, (5) (Nov): 1015-22.

Chu, S. Y., D. J. Bachman, W. M. Callaghan, E. P. Whitlock, P. M. Dietz, C. J. Berg, M. O'Keeffe-Rosetti, F. C. Bruce, and M. C. Hornbrook. 2008. Association between obesity during pregnancy and increased use of health care. *The New England Journal of Medicine* 358, (14) (Apr 3): 1444-53.

Chu, S. Y., W. M. Callaghan, C. L. Bish, and D. D'Angelo. 2009. Gestational weight gain by body mass index among US women delivering live births, 2004-2005: Fueling future obesity. *American Journal of Obstetrics and Gynecology* 200, (3) (Mar): 271.e1,271.e7.

Chu, S. Y., W. M. Callaghan, S. Y. Kim, C. H. Schmid, J. Lau, L. J. England, and P. M. Dietz. 2007. Maternal obesity and risk of gestational diabetes mellitus. *Diabetes Care* 30, (8) (Aug): 2070-6.

Chu, S. Y., S. Y. Kim, J. Lau, C. H. Schmid, P. M. Dietz, W. M. Callaghan, and K. M. Curtis. 2007. Maternal obesity and risk of stillbirth: A metaanalysis. *American Journal of Obstetrics and Gynecology* 197, (3) (Sep): 223-8.

Chu, S. Y., S. Y. Kim, C. H. Schmid, P. M. Dietz, W. M. Callaghan, J. Lau, and K. M. Curtis. 2007. Maternal obesity and risk of cesarean delivery: A meta-analysis. *Obesity Reviews : An Official Journal of the International Association for the Study of Obesity* 8, (5) (Sep): 385-94.

Cliver, S. P., R. L. Goldenberg, G. R. Cutter, H. J. Hoffman, R. L. Copper, S. J. Gotlieb, and R. O. Davis. 1992. The relationships among psychosocial profile, maternal size, and smoking in predicting fetal growth retardation. *Obstetrics and Gynecology* 80, (2) (Aug): 262-7.

Cogswell, M. E., M. K. Serdula, D. W. Hungerford, and R. Yip. 1995. Gestational weight gain among average-weight and overweight women--what is excessive? *American Journal of Obstetrics and Gynecology* 172, (2 Pt 1) (Feb): 705-12.

Crane, J. M., J. White, P. Murphy, L. Burrage, and D. Hutchens. 2009. The effect of gestational weight gain by body mass index on maternal and neonatal outcomes. *Journal of Obstetrics and Gynaecology Canada : JOGC = Journal d'Obstetrique Et Gynecologie Du Canada : JOGC* 31, (1) (Jan): 28-35.

Davis, E. M., S. J. Zyzanski, C. M. Olson, K. C. Stange, and R. I. Horwitz. 2009. Racial, ethnic, and socioeconomic differences in the incidence of obesity related to childbirth. *American Journal of Public Health* 99, (2) (Feb): 294-9.

de Assis, S., M. Wang, S. Goel, A. Foxworth, W. Helferich, and L. Hilakivi-Clarke. 2006. Excessive weight gain during pregnancy increases carcinogen-induced mammary tumorigenesis in sprague-dawley and lean and obese zucker rats. *The Journal of Nutrition* 136, (4) (Apr): 998-1004.

DeVader, S. R., H. L. Neeley, T. D. Myles, and T. L. Leet. 2007. Evaluation of gestational weight gain guidelines for women with normal prepregnancy body mass index. *Obstetrics and Gynecology* 110, (4) (Oct): 745-51.

Dietz, P. M., W. M. Callaghan, M. E. Cogswell, B. Morrow, C. Ferre, and L. A. Schieve. 2006. Combined effects of prepregnancy body mass index and weight gain during pregnancy on the risk of preterm delivery. *Epidemiology (Cambridge, Mass.)* 17, (2) (Mar): 170-7.

Dietz, P. M., W. M. Callaghan, B. Morrow, and M. E. Cogswell. 2005. Population-based assessment of the risk of primary cesarean delivery due to excess prepregnancy weight among nulliparous women delivering term infants. *Maternal and Child Health Journal* 9, (3) (Sep): 237-44.

Edwards, L. E., W. L. Hellerstedt, I. R. Alton, M. Story, and J. H. Himes. 1996. Pregnancy complications and birth outcomes in obese and normal-weight women: Effects of gestational weight change. *Obstetrics and Gynecology* 87, (3) (Mar): 389-94.

Feig, D. S., and C. D. Naylor. 1998. Eating for two: Are guidelines for weight gain during pregnancy too liberal? *Lancet* 351, (9108) (Apr 4): 1054-5.

Fernandez, I. D., C. M. Olson, and T. De Ver Dye. 2008. Discordance in the assessment of prepregnancy weight status of adolescents: A comparison between the centers for disease control and prevention sex- and age-specific body mass index classification and the institute of medicine-based classification used for maternal weight gain guidelines. *Journal of the American Dietetic Association* 108, (6) (Jun): 998-1002.

Fox, N. S., V. Bhavsar, D. H. Saltzman, A. Rebarber, and S. T. Chasen. 2009. Influence of maternal body mass index on the clinical estimation of fetal weight in term pregnancies. *Obstetrics and Gynecology* 113, (3) (Mar): 641-5.

Getahun, D., C. V. Ananth, Y. Oyelese, M. R. Chavez, R. S. Kirby, and J. C. Smulian. 2007. Primary preeclampsia in the second pregnancy: Effects of changes in prepregnancy body mass index between pregnancies. *Obstetrics and Gynecology* 110, (6) (Dec): 1319-25.

Getahun, D., C. V. Ananth, M. R. Peltier, H. M. Salihu, and W. E. Scorza. 2007. Changes in prepregnancy body mass index between the first and second pregnancies and risk of large-for-gestational-age birth. *American Journal of Obstetrics and Gynecology* 196, (6) (Jun): 530.e1,530.e8.

Getahun, D., L. M. Kaminsky, D. A. Elsasser, R. S. Kirby, C. V. Ananth, and A. M. Vintzileos. 2007. Changes in prepregnancy body mass index between pregnancies and risk of primary cesarean delivery. *American Journal of Obstetrics and Gynecology* 197, (4) (Oct): 376.e1,376.e7.

Gillman, M. W., S. L. Rifas-Shiman, K. Kleinman, E. Oken, J. W. Rich-Edwards, and E. M. Taveras. 2008. Developmental origins of childhood overweight: Potential public health impact. *Obesity (Silver Spring, Md.)* 16, (7) (Jul): 1651-6.

Goodall, P. T., J. T. Ahn, J. B. Chapa, and J. U. Hibbard. 2005. Obesity as a risk factor for failed trial of labor in patients with previous cesarean delivery. *American Journal of Obstetrics and Gynecology* 192, (5) (May): 1423-6.

Groth, S. 2007. Are the institute of medicine recommendations for gestational weight gain appropriate for adolescents? *Journal of Obstetric, Gynecologic, and Neonatal Nursing : JOGNN / NAACOG* 36, (1) (Jan-Feb): 21-7.

———. 2006. Adolescent gestational weight gain: Does it contribute to obesity? *MCN.the American Journal of Maternal Child Nursing* 31, (2) (Mar-Apr): 101-5.

Groth, S. W. 2008. The long-term impact of adolescent gestational weight gain. *Research in Nursing & Health* 31, (2) (Apr): 108-18.

Gunderson, E. P., and B. Abrams. 1999. Epidemiology of gestational weight gain and body weight changes after pregnancy. *Epidemiologic Reviews* 21, (2): 261-75.

Gunderson, E. P., B. Abrams, and S. Selvin. 2000. The relative importance of gestational gain and maternal characteristics associated with the risk of becoming overweight after pregnancy. *International Journal of Obesity and Related Metabolic Disorders : Journal of the International Association for the Study of Obesity* 24, (12) (Dec): 1660-8.

———. 2000. The relative importance of gestational gain and maternal characteristics associated with the risk of becoming overweight after pregnancy. *International*

*Journal of Obesity and Related Metabolic Disorders : Journal of the International Association for the Study of Obesity* 24, (12) (Dec): 1660-8.

Gunderson, E. P., B. Sternfeld, M. F. Wellons, R. A. Whitmer, V. Chiang, C. P. Quesenberry Jr, C. E. Lewis, and S. Sidney. 2008. Childbearing may increase visceral adipose tissue independent of overall increase in body fat. *Obesity (Silver Spring, Md.)* 16, (5) (May): 1078-84.

Gunderson, E. P., R. Striegel-Moore, G. Schreiber, M. Hudes, F. Biro, S. Daniels, and P. B. Crawford. 2009. Longitudinal study of growth and adiposity in parous compared with nulligravid adolescents. *Archives of Pediatrics & Adolescent Medicine* 163, (4) (Apr): 349-56.

Haeri, S., I. Guichard, A. M. Baker, S. Saddlemire, and K. A. Boggess. 2009. The effect of teenage maternal obesity on perinatal outcomes. *Obstetrics and Gynecology* 113, (2 Pt 1) (Feb): 300-4.

Herring, S. J., E. Oken, J. Haines, J. W. Rich-Edwards, S. L. Rifas-Shiman, K. P. Kleinman ScD, and M. W. Gillman. 2008. Misperceived pre-pregnancy body weight status predicts excessive gestational weight gain: Findings from a US cohort study. *BMC Pregnancy and Childbirth* 8, (Dec 22): 54.

Hibbard, J. U., S. Gilbert, M. B. Landon, J. C. Hauth, K. J. Leveno, C. Y. Spong, M. W. Varner, et al. 2006. Trial of labor or repeat cesarean delivery in women with morbid obesity and previous cesarean delivery. *Obstetrics and Gynecology* 108, (1) (Jul): 125-33.

Hickey, C. A., S. P. Cliver, R. L. Goldenberg, and M. L. Blankson. 1992. Maternal weight status and term birth weight in first and second adolescent pregnancies. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine* 13, (7) (Nov): 561-9.

Hickey, C. A., S. P. Cliver, R. L. Goldenberg, J. Kohatsu, and H. J. Hoffman. 1993. Prenatal weight gain, term birth weight, and fetal growth retardation among high-risk multiparous black and white women. *Obstetrics and Gynecology* 81, (4) (Apr): 529-35.

Hickey, C. A., S. P. Cliver, R. L. Goldenberg, S. F. McNeal, and H. J. Hoffman. 1997. Low prenatal weight gain among low-income women: What are the risk factors? *Birth (Berkeley, Calif.)* 24, (2) (Jun): 102-8.

Hickey, C. A., S. P. Cliver, S. F. McNeal, and R. L. Goldenberg. 1997. Low pregravid body mass index as a risk factor for preterm birth: Variation by ethnic group. *Obstetrics and Gynecology* 89, (2) (Feb): 206-12.

Hickey, C. A., S. P. Cliver, S. F. McNeal, H. J. Hoffman, and R. L. Goldenberg. 1995. Prenatal weight gain patterns and spontaneous preterm birth among nonobese black and white women. *Obstetrics and Gynecology* 85, (6) (Jun): 909-14.

Hickey, C. A., S. F. McNeal, L. Menefee, and S. Ivey. 1997. Prenatal weight gain within upper and lower recommended ranges: Effect on birth weight of black and white infants. *Obstetrics and Gynecology* 90, (4 Pt 1) (Oct): 489-94.

Hickey, C. A., R. Uauy, L. M. Rodriguez, and L. W. Jennings. 1990. Maternal weight gain in low-income black and hispanic women: Evaluation by use of weight-for-height near term. *The American Journal of Clinical Nutrition* 52, (5) (Nov): 938-43.

Howie, L. D., J. D. Parker, and K. C. Schoendorf. 2003. Excessive maternal weight gain patterns in adolescents. *Journal of the American Dietetic Association* 103, (12) (Dec): 1653-7.

Hulsey, T. C., D. Neal, S. C. Bondo, T. Hulsey, and R. Newman. 2005. Maternal prepregnant body mass index and weight gain related to low birth weight in south carolina. *Southern Medical Journal* 98, (4) (Apr): 411-5.

Johnson, J. W., J. A. Longmate, and B. Frentzen. 1992. Excessive maternal weight and pregnancy outcome. *American Journal of Obstetrics and Gynecology* 167, (2) (Aug): 353,70; discussion 370-2.

Johnson, J. W., and M. K. Yancey. 1996. A critique of the new recommendations for weight gain in pregnancy. *American Journal of Obstetrics and Gynecology* 174, (1 Pt 1) (Jan): 254-8.

Johnston, C. S., F. S. Christopher, and L. A. Kandell. 1991. Pregnancy weight gain in adolescents and young adults. *Journal of the American College of Nutrition* 10, (3) (Jun): 185-9.

Johnston, C. S., and L. A. Kandell. 1992. Prepregnancy weight and rate of maternal weight gain in adolescents and young adults. *Journal of the American Dietetic Association* 92, (12) (Dec): 1515-7.

Johnston, E. M. 1991. Weight changes during pregnancy and the postpartum period. *Progress in Food & Nutrition Science* 15, (3): 117-57.

Joseph, N. P., K. B. Hunkali, B. Wilson, E. Morgan, M. Cross, and K. M. Freund. 2008. Pre-pregnancy body mass index among pregnant adolescents: Gestational weight gain and long-term post partum weight retention. *Journal of Pediatric and Adolescent Gynecology* 21, (4) (Aug): 195-200.

Kabiru, W., and B. D. Raynor. 2004. Obstetric outcomes associated with increase in BMI category during pregnancy. *American Journal of Obstetrics and Gynecology* 191, (3) (Sep): 928-32.

Keppel, K. G., and S. M. Taffel. 1993. Pregnancy-related weight gain and retention: Implications of the 1990 institute of medicine guidelines. *American Journal of Public Health* 83, (8) (Aug): 1100-3.

Kiel, D. W., E. A. Dodson, R. Artal, T. K. Boehmer, and T. L. Leet. 2007. Gestational weight gain and pregnancy outcomes in obese women: How much is enough? *Obstetrics and Gynecology* 110, (4) (Oct): 752-8.

Kriebs, J. M. 2009. Obesity as a complication of pregnancy and labor. *The Journal of Perinatal & Neonatal Nursing* 23, (1) (Jan-Mar): 15-22.

Kuhlmann, A. K., P. M. Dietz, C. Galavotti, and L. J. England. 2008. Weight-management interventions for pregnant or postpartum women. *American Journal of Preventive Medicine* 34, (6) (Jun): 523-8.

Lederman, S. A. 2001. Pregnancy weight gain and postpartum loss: Avoiding obesity while optimizing the growth and development of the fetus. *Journal of the American Medical Women's Association (1972)* 56, (2) (Spring): 53-8.

———. 1993. The effect of pregnancy weight gain on later obesity. *Obstetrics and Gynecology* 82, (1) (Jul): 148-55.

Lombardi, D. G., J. R. Barton, J. M. O'Brien, N. K. Istwan, and B. M. Sibai. 2005. Does an obese prepregnancy body mass index influence outcome in pregnancies complicated by mild gestational hypertension remote from term? *American Journal of Obstetrics and Gynecology* 192, (5) (May): 1472-4.

Lu, G. C., D. J. Rouse, M. DuBard, S. Cliver, D. Kimberlin, and J. C. Hauth. 2001. The effect of the increasing prevalence of maternal obesity on perinatal morbidity. *American Journal of Obstetrics and Gynecology* 185, (4) (Oct): 845-9.

Luke, B., M. L. Hediger, and T. O. Scholl. 1996. Point of diminishing returns: When does gestational weight gain cease benefiting birthweight and begin adding to maternal obesity? *The Journal of Maternal-Fetal Medicine* 5, (4) (Jul-Aug): 168-73.

Mazaki-Tovi, S., R. Romero, E. Vaisbuch, J. P. Kusanovic, O. Erez, F. Gotsch, T. Chaiworapongsa, et al. 2009. Maternal serum adiponectin multimers in preeclampsia. *Journal of Perinatal Medicine* 37, (4): 349-63.

McAnarney, E. R., and C. Stevens-Simon. 1993. First, do no harm. low birth weight and adolescent obesity. *American Journal of Diseases of Children (1960)* 147, (9) (Sep): 983-5.

Mehta, S. H. 2008. Nutrition and pregnancy. *Clinical Obstetrics and Gynecology* 51, (2) (Jun): 409-18.

Mumford, S. L., A. M. Siega-Riz, A. Herring, and K. R. Evenson. 2008. Dietary restraint and gestational weight gain. *Journal of the American Dietetic Association* 108, (10) (Oct): 1646-53.

Muscati, S. K., K. Gray-Donald, and K. G. Koski. 1996. Timing of weight gain during pregnancy: Promoting fetal growth and minimizing maternal weight retention. *International Journal of Obesity and Related Metabolic Disorders : Journal of the International Association for the Study of Obesity* 20, (6) (Jun): 526-32.

Naeye, R. L. 1990. Maternal body weight and pregnancy outcome. *The American Journal of Clinical Nutrition* 52, (2) (Aug): 273-9.

Neggers, Y. H., R. L. Goldenberg, S. L. Ramey, and S. P. Cliver. 2003. Maternal prepregnancy body mass index and psychomotor development in children. *Acta Obstetricia Et Gynecologica Scandinavica* 82, (3) (Mar): 235-40.

Nielsen, J. N., J. Gittelsohn, J. Anliker, and K. O'Brien. 2006. Interventions to improve diet and weight gain among pregnant adolescents and recommendations for future research. *Journal of the American Dietetic Association* 106, (11) (Nov): 1825-40.

Nielsen, J. N., K. O. O'Brien, F. R. Witter, S. C. Chang, J. Mancini, M. S. Nathanson, and L. E. Caulfield. 2006. High gestational weight gain does not improve birth weight in a cohort of african american adolescents. *The American Journal of Clinical Nutrition* 84, (1) (Jul): 183-9.

Novak, D. A., M. Desai, and M. G. Ross. 2006. Gestational programming of offspring obesity/hypertension. *The Journal of Maternal-Fetal & Neonatal Medicine : The Official Journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians* 19, (10) (Oct): 591-9.

Ogunyemi, D., S. Hullett, J. Leeper, and A. Risk. 1998. Prepregnancy body mass index, weight gain during pregnancy, and perinatal outcome in a rural black population. *The Journal of Maternal-Fetal Medicine* 7, (4) (Jul-Aug): 190-3.

Oken, E., S. L. Rifas-Shiman, A. E. Field, A. L. Frazier, and M. W. Gillman. 2008. Maternal gestational weight gain and offspring weight in adolescence. *Obstetrics and Gynecology* 112, (5) (Nov): 999-1006.

Oken, E., E. M. Taveras, K. P. Kleinman, J. W. Rich-Edwards, and M. W. Gillman. 2007. Gestational weight gain and child adiposity at age 3 years. *American Journal of Obstetrics and Gynecology* 196, (4) (Apr): 322.e1,322.e8.

Olson, C. M. 2007. A call for intervention in pregnancy to prevent maternal and child obesity. *American Journal of Preventive Medicine* 33, (5) (Nov): 435-6.

Olson, C. M., M. S. Strawderman, and B. A. Dennison. 2009. Maternal weight gain during pregnancy and child weight at age 3 years. *Maternal and Child Health Journal* 13, (6) (Nov): 839-46.

Olson, C. M., M. S. Strawderman, P. S. Hinton, and T. A. Pearson. 2003. Gestational weight gain and postpartum behaviors associated with weight change from early pregnancy to 1 y postpartum. *International Journal of Obesity and Related*

*Metabolic Disorders : Journal of the International Association for the Study of Obesity* 27, (1) (Jan): 117-27.

Parker, J. D., and B. Abrams. 1993. Differences in postpartum weight retention between black and white mothers. *Obstetrics and Gynecology* 81, (5 ( Pt 1)) (May): 768-74.

———. 1992. Prenatal weight gain advice: An examination of the recent prenatal weight gain recommendations of the institute of medicine. *Obstetrics and Gynecology* 79, (5 ( Pt 1)) (May): 664-9.

Purfield, P., and K. Morin. 1995. Excessive weight gain in primigravidas with low-risk pregnancy: Selected obstetric consequences. *Journal of Obstetric, Gynecologic, and Neonatal Nursing : JOGNN / NAACOG* 24, (5) (Jun): 434-9.

Radesky, J. S., E. Oken, S. L. Rifas-Shiman, K. P. Kleinman, J. W. Rich-Edwards, and M. W. Gillman. 2008. Diet during early pregnancy and development of gestational diabetes. *Paediatric and Perinatal Epidemiology* 22, (1) (Jan): 47-59.

Rasmussen, S. A., S. Y. Chu, S. Y. Kim, C. H. Schmid, and J. Lau. 2008. Maternal obesity and risk of neural tube defects: A metaanalysis. *American Journal of Obstetrics and Gynecology* 198, (6) (Jun): 611-9.

Ratner, R. E., L. H. Hamner 3rd, and N. B. Isada. 1991. Effects of gestational weight gain in morbidly obese women: I. maternal morbidity. *American Journal of Perinatology* 8, (1) (Jan): 21-4.

———. 1990. Effects of gestational weight gain in morbidly obese women: II: Fetal morbidity. *American Journal of Perinatology* 7, (4) (Oct): 295-9.

Reece, E. A. 2008. Perspectives on obesity, pregnancy and birth outcomes in the united states: The scope of the problem. *American Journal of Obstetrics and Gynecology* 198, (1) (Jan): 23-7.

Rooney, B. L., and C. W. Schauberger. 2002. Excess pregnancy weight gain and long-term obesity: One decade later. *Obstetrics and Gynecology* 100, (2) (Aug): 245-52.

Rooney, B. L., C. W. Schauberger, and M. A. Mathiason. 2005. Impact of perinatal weight change on long-term obesity and obesity-related illnesses. *Obstetrics and Gynecology* 106, (6) (Dec): 1349-56.

Rosenberg, T. J., S. Garbers, W. Chavkin, and M. A. Chiasson. 2003. Prepregnancy weight and adverse perinatal outcomes in an ethnically diverse population. *Obstetrics and Gynecology* 102, (5 Pt 1) (Nov): 1022-7.

Rosenberg, T. J., S. Garbers, H. Lipkind, and M. A. Chiasson. 2005. Maternal obesity and diabetes as risk factors for adverse pregnancy outcomes: Differences among 4 racial/ethnic groups. *American Journal of Public Health* 95, (9) (Sep): 1545-51.

Salihu, H. M., A. P. Alio, R. E. Wilson, P. P. Sharma, R. S. Kirby, and G. R. Alexander. 2008. Obesity and extreme obesity: New insights into the black-white disparity in neonatal mortality. *Obstetrics and Gynecology* 111, (6) (Jun): 1410-6.

Salihu, H. M., A. L. Dunlop, M. Hedayatzadeh, A. P. Alio, R. S. Kirby, and G. R. Alexander. 2007. Extreme obesity and risk of stillbirth among black and white gravidas. *Obstetrics and Gynecology* 110, (3) (Sep): 552-7.

Salihu, H. M., O. Lynch, A. P. Alio, J. L. Kornosky, H. B. Clayton, and A. K. Mbah. 2009. Extreme obesity and risk of placental abruption. *Human Reproduction (Oxford, England)* 24, (2) (Feb): 438-44.

Salihu, H. M., O. Lynch, A. P. Alio, and J. Liu. 2008. Obesity subtypes and risk of spontaneous versus medically indicated preterm births in singletons and twins. *American Journal of Epidemiology* 168, (1) (Jul 1): 13-20.

Schieve, L. A., M. E. Cogswell, and K. S. Scanlon. 1999. Maternal weight gain and preterm delivery: Differential effects by body mass index. *Epidemiology (Cambridge, Mass.)* 10, (2) (Mar): 141-7.

Schieve, L. A., M. E. Cogswell, K. S. Scanlon, G. Perry, C. Ferre, C. Blackmore-Prince, S. M. Yu, and D. Rosenberg. 2000. Prepregnancy body mass index and pregnancy weight gain: Associations with preterm delivery. the NMIHS collaborative study group. *Obstetrics and Gynecology* 96, (2) (Aug): 194-200.

Scholl, T. O., M. L. Hediger, J. I. Schall, I. G. Ances, and W. K. Smith. 1995. Gestational weight gain, pregnancy outcome, and postpartum weight retention. *Obstetrics and Gynecology* 86, (3) (Sep): 423-7.

Shepard, M. J., L. S. Bakketeig, G. Jacobsen, T. O'Connor, and M. B. Bracken. 1996. Maternal body mass, proportional weight gain, and fetal growth in parous women. *Paediatric and Perinatal Epidemiology* 10, (2) (Apr): 207-19.

Shepard, M. J., A. F. Saftlas, L. Leo-Summers, and M. B. Bracken. 1998. Maternal anthropometric factors and risk of primary cesarean delivery. *American Journal of Public Health* 88, (10) (Oct): 1534-8.

Siega-Riz, A. M., K. R. Evenson, and N. Dole. 2004. Pregnancy-related weight gain--a link to obesity? *Nutrition Reviews* 62, (7 Pt 2) (Jul): S105-11.

Siega-Riz, A. M., A. H. Herring, A. F. Olshan, J. Smith, C. Moore, and National Birth Defects Prevention Study. 2009. The joint effects of maternal prepregnancy body mass index and age on the risk of gastroschisis. *Paediatric and Perinatal Epidemiology* 23, (1) (Jan): 51-7.

Siega-Riz, A. M., A. M. Siega-Riz, and B. Laraia. 2006. The implications of maternal overweight and obesity on the course of pregnancy and birth outcomes. *Maternal and Child Health Journal* 10, (5 Suppl) (Sep): S153-6.

Slickers, J. E., A. F. Olshan, A. M. Siega-Riz, M. A. Honein, A. S. Aylsworth, and National Birth Defects Prevention Study. 2008. Maternal body mass index and lifestyle exposures and the risk of bilateral renal agenesis or hypoplasia: The national birth defects prevention study. *American Journal of Epidemiology* 168, (11) (Dec 1): 1259-67.

Spellacy, W. N. 2008. Obstetric practice in the united states of america may contribute to the obesity epidemic. *The Journal of Reproductive Medicine* 53, (12) (Dec): 955-6.

Srinivasan, M., C. Dodds, H. Ghanim, T. Gao, P. J. Ross, R. W. Browne, P. Dandona, and M. S. Patel. 2008. Maternal obesity and fetal programming: Effects of a high-carbohydrate nutritional modification in the immediate postnatal life of female rats. *American Journal of Physiology.Endocrinology and Metabolism* 295, (4) (Oct): E895-903.

Stevens-Simon, C., and E. R. McAnarney. 1992. Adolescent pregnancy. gestational weight gain and maternal and infant outcomes. *American Journal of Diseases of Children (1960)* 146, (11) (Nov): 1359-64.

Stevens-Simon, C., E. R. McAnarney, and K. J. Roghmann. 1993. Adolescent gestational weight gain and birth weight. *Pediatrics* 92, (6) (Dec): 805-9.

Stotland, N. E., A. B. Caughey, M. Lahiff, and B. Abrams. 2006. Weight gain and spontaneous preterm birth: The role of race or ethnicity and previous preterm birth. *Obstetrics and Gynecology* 108, (6) (Dec): 1448-55.

Stotland, N. E., J. S. Haas, P. Brawarsky, R. A. Jackson, E. Fuentes-Afflick, and G. J. Escobar. 2005. Body mass index, provider advice, and target gestational weight gain. *Obstetrics and Gynecology* 105, (3) (Mar): 633-8.

Stotland, N. E., L. M. Hopkins, and A. B. Caughey. 2004. Gestational weight gain, macrosomia, and risk of cesarean birth in nondiabetic nulliparas. *Obstetrics and Gynecology* 104, (4) (Oct): 671-7.

Stotland, N. E., A. E. Washington, and A. B. Caughey. 2007. Prepregnancy body mass index and the length of gestation at term. *American Journal of Obstetrics and Gynecology* 197, (4) (Oct): 378.e1,378.e5.

Sukalich, S., M. J. Mingione, and J. C. Glantz. 2006. Obstetric outcomes in overweight and obese adolescents. *American Journal of Obstetrics and Gynecology* 195, (3) (Sep): 851-5.

Taffel, S. M., K. G. Keppel, and G. K. Jones. 1993. Medical advice on maternal weight gain and actual weight gain. results from the 1988 national maternal and infant health survey. *Annals of the New York Academy of Sciences* 678, (Mar 15): 293-305.

Vahratian, A., A. M. Siega-Riz, D. A. Savitz, and J. Zhang. 2005. Maternal pre-pregnancy overweight and obesity and the risk of cesarean delivery in nulliparous women. *Annals of Epidemiology* 15, (7) (Aug): 467-74.

Vahratian, A., J. Zhang, J. F. Troendle, D. A. Savitz, and A. M. Siega-Riz. 2004. Maternal prepregnancy overweight and obesity and the pattern of labor progression in term nulliparous women. *Obstetrics and Gynecology* 104, (5 Pt 1) (Nov): 943-51.

Waller, D. K., G. M. Shaw, S. A. Rasmussen, C. A. Hobbs, M. A. Canfield, A. M. Siega-Riz, M. S. Gallaway, A. Correa, and National Birth Defects Prevention Study. 2007. Prepregnancy obesity as a risk factor for structural birth defects. *Archives of Pediatrics & Adolescent Medicine* 161, (8) (Aug): 745-50.

Waller, D. K., A. T. Tita, M. M. Werler, and A. A. Mitchell. 2003. Association between prepregnancy maternal body mass index and the risk of having an infant with a congenital diaphragmatic hernia. *Birth Defects Research.Part A, Clinical and Molecular Teratology* 67, (1) (Jan): 73-6.

Whitaker, R. C. 2007. Commentary: Should I blame mom or dad? identifying the relative contribution of each parent's body size to that of their offspring. *International Journal of Epidemiology* 36, (1) (Feb): 108-9.

Whitaker, R. C., and W. H. Dietz. 1998. Role of the prenatal environment in the development of obesity. *The Journal of Pediatrics* 132, (5) (May): 768-76.

Wolfe, H. M., R. J. Sokol, S. M. Martier, and I. E. Zador. 1990. Maternal obesity: A potential source of error in sonographic prenatal diagnosis. *Obstetrics and Gynecology* 76, (3 Pt 1) (Sep): 339-42.

Wolfe, H. M., I. E. Zador, T. L. Gross, S. S. Martier, and R. J. Sokol. 1991. The clinical utility of maternal body mass index in pregnancy. *American Journal of Obstetrics and Gynecology* 164, (5 Pt 1) (May): 1306-10.

**Secondary Sources Cited**


The Associated Press. 2007. Pregnancy weight gain guidelines may be too high. *CBC News*, April 2. http://www.cbc.ca/health/story/2007/04/02/pregnant-weight.html

Apron Study. Alberta Pregnancy Outcomes and Nutrition. http://www.apronstudy.ca/

Bailey, L. 2001. Gender shows: First-time mothers and embodied selves. *Gender & Society* 15(1): 110-129.

Bartky, S. L. 1990. *Femininity and Domination: Studies in the Phenomenology of Oppression.* New York: Routledge.

Bell, K., D. McNaughton, and A. Salmon. 2009. Medicine, morality and mothering: Public health discourses on foetal alcohol exposure, smoking around children, and childhood overnutrition. *Critical Public Health* 19(2): 155-170.

Benjamin, J. 1988. *The Bonds of Love.* New York: Random House.

Berg, B. L. 2009. *Qualitative Research Methods.* 7th ed. New York: Allyn & Bacon.

Birch, L. L., J. O. Fisher, and K. K. Davison. 2003. Learning to overeat: Maternal use of restrictive feeding practices promotes girls' eating in absence of hunger. *American Journal of Clinical Nutrition* 78: 215-220.

Boonin, D. 2004. Review of *Rights, Duties and the Body: Law and Ethics of the Maternal-Fetal Conflict* by Rosamund Scott. *The Philosophical Review* 113(4): 582-584.

Bordo, S. 1993. *Unbearable Weight: Feminism, Western Culture, and the Body.* Berkeley: University of California Press.

Bray, A., and C. Colebrook. 1998. The Haunted Flesh: Corporeal Feminism and the Politics of (Dis)Embodiment. *Signs* 24(1): 35-67.

Brown, M. 2008. Somehow we all survived: The ideology of the U.S. backlash against risk management. *South Atlantic Quarterly* 102(2): 287-307.

Brumberg, J. J. 1997. *The Body Project: An Intimate History of American Girls*. New York: Random House.

Butler, J. 1993. *Bodies that Matter: On the Discursive Limits of "Sex"*. New York and London: Routledge.

———. 2004. *Undoing Gender*. New York and London: Routledge.

———. 2005. *Giving an Account of Oneself*. New York: Fordham Press.

Campos, P., A. Saguy, P. Ernsberger, E. Oliver, and G. Gaesser. 2006. The epidemiology of overweight and obesity: Public health crisis or moral panic. *International Journal of Epidemiology* 35: 55-60.

Carabine, J. 2001. Unmarried motherhood 1830-1990: A genealogical analysis. In *Discourse Theory and Practice: A Reader*, eds. Margaret Withered, Stephanie Taylor, and Simeon J. Yates, 267-310. London: Sage Publications Inc.

Centers for Disease Control and Prevention Online (CDC). Overweight and Obesity. Centers for Disease Control and Prevention. http://www.cdc.gov/obesity/

Centers for Disease Control and Prevention Online (CDC). Healthy People 2010. The Division of Nutrition, Physical Activity, and Obesity. http://www.healthypeople.gov/

Cherry, A. 1999. Maternal-fetal conflicts, the social construction of maternal deviance, and some thoughts about love and justice. *Texas Journal of Women and the Law* 8: 245-259.

Cogan, J. C. 1999. Re-evaluating the weight-centered approach toward health: The need for a new paradigm. In *Interpreting Weight: The Social Management of Fatness and Thinness*, eds. Jeffery Sobal and Donna Mauer, 229-253. New York: Aldine de Gruyter.

Cohen, L., D. P. Perales, and C. Steadman. 2005. The O word: Why the focus on obesity is harmful to community health. *Californian Journal of Health Promotion* 3(3): 154-161.

Colb, S. F. 2007. *When Sex Counts: Making Babies and Making Law*. New York: Rowman & Littlefield Publishers, Inc.

Crandall, C.S., S. D'Anello, N. Sakalli, E. Lazarus, G. W. Nejtardt, and N.T. Feather. 2001. An attribution-value model of prejudice: Anti-fat attitudes in six nations. *Personality and Social Psychology Bulletin*. 27(1): 30-37.

Davies, L., M. McKinnon, and P. Rains. 2001. Creating a family: Perspectives from teen mothers. *Journal of Progressive Human Services* 12(1): 83-100.

DeJong, W. (1980). The Stigma of Obesity: The Consequences of Naive Assumptions Concerning the Causes of Physical Deviance. *Journal of Health and Social Behavior*, 21(1), 75-87.

Denzin, N. K., and Y. S. Lincoln, eds. 2003. *Strategies of Qualitative Inquiry*. 2nd Ed. Thousand Oaks, London, and New Delhi: Sage Publications.

Earle, S. 2003. "Bumps and boobs": Fatness and women's experiences of pregnancy. *Women's Studies International Forum* 26(3): 245-252.

Ehrenreich, N., ed. 2008. *The Reproductive Rights Reader: Law, Medicine, and the Construction of Motherhood.* New York and London: New York University Press.

Ernsberger, P. 2009. Does social class explain the connection between weight and health? In *The fat studies reader*, eds. Sondra Solovay and Esther Rothblum, 25-36. New York: New York University Press.

Fausto-Sterling, A. 2005. The bare bones of sex: Part 1-Sex and gender. *Signs* 30(2): 1491-1597.

Ferguson, S. J., and C. Parry. 1998. Rewriting menopause: Challenging the medical paradigm to reflect menopausal women's experience. *Frontiers: A Journal for Women's Studies* 19(1): 20-41.

Flegal, K. M. 2006. Commentary: The epidemic of obesity—what's in a name? *International Journal of Epidemiology* 35: 72-74.

Foucault, M. 1990. *History of Sexuality: An Introduction, Vol. 1.* New York: Vintage.

———. 1991. Governmentality. In *The Foucault Effect: Studies in Governmentality*, eds. Graham Burchell, Colin Gordon, and Peter Miller, 87-104. Chicago: The University of Chicago Press.

———. 1995. *Discipline and Punish: The Birth of the Prison.* New York: Vintage.

———. 1999. *Abnormal: Lectures at the College de France 1974-1975.* New York: Picador

———. 2003. *Society Must be Defended: Lectures at the College de France 1975-76.* New York: Picador.

———. 2007. *Security, Territory, Population: Lectures at the College de France, 1977-1978.* New York: Picador.

Gatens, M. 1996. *Imaginary Bodies: Ethics, Power, and Corporeality.* New York: Routledge.

Gordon, Colin. 1991. Governmental Rationality: An Introduction. In *The Foucault Effect: Studies in Governmentality*, eds. Graham Burchell, Colin Gordon, and Peter Miller, 1-52. Chicago: The University of Chicago Press.

Grosz, E. 1994. *Volatile Bodies: Toward a Corporeal Feminism.* Indianapolis: Indiana University Press.

Grün, F., and B. Blumberg. 2006. Environmental obesogens: Organotins and endocrine disruption via nuclear receptor signaling. *Endocrinology* 147(6) (Suppl.): S50-S55.

Gubrium, J. F., and J. A. Holstein. 2003. Analyzing Interpretive Practices. In *Strategies of Qualitative Inquiry.* 2nd Ed., eds. Norman K. Denzin and Yvonna S. Lincoln, 214-248. Thousand Oaks, London, and New Delhi: Sage Publications.

Haraway, D. 1988. Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist Studies* 14(3): 575-599.

Haskins, K. M., and H. E. Ransford. (1999). The Relationship between Weight and Career Payoffs among Women. *Sociological Forum*, 14(2), 295-318.

Hays, S. 1996. *The Cultural Contradictions of Motherhood.* New Haven: Yale University Press.

Herndon, A. M. 2005. Collateral damage from friendly fire?: Race, nation, class and the "war against obesity". *Social Semiotics* 15(2): 127-141.

Holmes, D., S. J. Murray, A. Perron, and G. Rail. 2006. Deconstructing the evidence-based discourse in health sciences: truth, power and fascism. *International Journal of Evidence Based Healthcare* 4: 180-186.

Honeycutt, K. 1999. Fat world/thin world: "Fat busters," "equivocators," "fat boosters" and the social construction of obesity. In *Interpreting Weight: The Social Management of Fatness and Thinness*, eds. Jeffery Sobal and Donna Mauer, 165-182. New York: Aldine de Gruyter.

Institute of Medicine. 1990. Effects of Gestational Weight Gain on Outcome in Singleton Pregnancies. *Nutrition During Pregnancy: Part I: Weight Gain, Part II: Nutrient Supplements.*

Jameson, M. 2010. Fed up with fat and saying something about it. Los Angeles Times, February 2. http://articles.latimes.com/2010/feb/01/health/la-he-fat-fatigue1-2010feb01

Johnston, N. 2010. It's now more dangerous to give birth in California than it is in Kuwait or Bosnia. AlterNet, February 3. http://www.alternet.org/investigations/145524/it's_now_more_dangerous_to_give_birth_in_california_than_it_is_in_kuwait_or_bosnia

Kokkonen, R. 2009. The fat child-a sign of 'bad' motherhood? An analysis of explanations for children's fatness on a Finnish website. *Journal of Community and Applied Social Psychology* 19: 336-347.

Kristeva, J. 1982. *Powers of horror: An essay on abjection.* New York: Columbia University Press.

Kukla, R. 2005. *Mass Hysteria: Medicine, Culture, and Mother's Bodies.* New York: The Rowman and Littlefield Publishing Group, Inc.

Kukla, R. 2006. Ethics and ideology in breastfeeding advocacy campaigns. *Hypatia* 21(1): 157-180.

Lafrance, M. 2007. Embodying the subject: Feminist theory and contemporary clinical psychoanalysis. *Feminist Theory* 8(3): 263-278.

Lazar, M. M., 2005. Politicizing Gender in Discourse: Feminist Critical Discourse Analysis as Political Perspective and Praxis. In *Feminist Critical Discourse Analysis*, ed. Michelle M. Lazar, 1-30. New York: Palgrave Macmillan.

LeBesco, K. 2004. *Revolting Bodies? The Struggle to Redefine Fat Identify.* Amherst and Boston: University of Massachusetts Press.

Lorber, J., R. Laub Coser, A.S. Rossi, and N. Chodorow. 1981. On *The Reproduction of Mothering*: A Methodological Debate. *Signs* 6(3):482-514.

Löwy, I. 1988. Ludwik Fleck on the social construction of medical knowledge. *Sociology of Health & Illness* 10(2): 133-155.

Markens, S., C.H. Browner, and N. Press. 1997. Feeding the fetus: On interrogating the notion of maternal-fetal conflict. *Feminist Studies* 23(2): 351-372.

Maurer, D., and J. Sobal. 1999. The social management of fatness and thinness. In *Interpreting Weight: The Social Management of Fatness and Thinness*, eds. Jeffery Sobal and Donna Mauer, 3-10. New York: Aldine de Gruyter.

Mazer-Poline, C., and V. Fornari. 2009. Anorexia nervosa and pregnancy: Having a baby when you are dying to be thin-case report and proposed treatment guidelines. *International Journal of Eating Disorders* 42: 382-384.

Mitchell, Steve. 2008. Writing down every morsel doubles weight loss. MSNBC, July 8. http://www.msnbc.msn.com/id/25573436/

Murray, S. 2008a. Pathologizing "fatness": Medical authority and popular culture. *Sociology of Sport Journal* 25: 7-21.

Murray, S. 2008b. *The 'Fat" Female Body*. New York: Palgrave Macmillan.

Neiterman, E. 2007. When pregnant body becomes visible: Weight, shape, and appearance of pregnant bodies in mass media. Paper presented at the annual meeting of the American Sociological Association, August 11, 2007, in New York City, United States.

Oliver, J.E. 2006. The politics of pathology: How obesity became an epidemic disease. *Biology and Medicine* 49(4): 611-627.

Parker, I. 1992. *Discourse dynamics: Critical analysis for social and individual psychology*. London and New York: Routledge.

Parker, I., and the Bolton Discourse Network. 1999. *Critical textwork: An introduction to varieties of discourse and analysis*. Buckingham and Philadelphia: Open University Press.

Phillips, L., and M. W. Jorgensen. 2002. *Discourse analysis as theory and method.* London: Sage Publications.

Phillips, N., and C. Hardy. 2002. *Discourse analysis: Investigating processes of social construction.* London: Sage Publications.

Project Viva. Project Viva: A study of health for the next generation. http://www.dacp.org/viva/index.html

Public Health Agency of Canada. It's your health! Health Canada. http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/index-eng.php

Rail, G., and M. Lafrance. 2009. Confessions of the flesh and biopedagogies: Discursive constructions of obesity on *Nip/Tuck. Medical Humanities* 35: 76-79.

Reuter, S. Z. 2006. The genuine Jewish type: Racial ideology and anti-immigration in early medical writing about Tay-Sachs disease. *Canadian Journal of Sociology* 31(3): 291-323.

Reuter, S. Z. 2007a. *Narrating Social Order: Agoraphobia and the Politics of Classification.* Toronto: University of Toronto Press.

Reuter, S. Z. 2007b. The politics of 'wrongful life' itself: Discursive (mal)practices and Tay-Sachs disease. *Economy and Society* 36(2): 236-262.

Rose, N. 1999. *Powers of Freedom: Reframing Political Thought.* Cambridge and New York: The Cambridge University Press.

Rose, N. 2007. *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century.* Princeton: Princeton University Press.

Saguy, A. C., and K. W. Riley. 2005. Weighing both sides: Morality, mortality, and framing contests over obesity. *Journal of Health Politics, Policy and Law* 30(5): 869-921.

Saguy, A. C., and R. Almeling. 2008. Fat in the fire? Science, the news media, and the "obesity epidemic". *Sociological Forum* 23(1) 53-83.

Scott, R. 2002. *Rights, Duties and the Body: Law and Ethics of the Maternal-Fetal Conflict*. Oxford: Hart Publishing.

Sen, G., and R. C. Snow, eds. 1994. *Power and Decision: The Social Control of Reproduction*. Boston: Harvard University Press.

Soares, R. M., M. A. Nunes, M. I. Schmidt, A. Giacomello, P. Manzolli, S. Camey, C. Buss, M. Drehmer, C. Melere, J. Hoffman, S. Ozcariz, C. N. Manenti, A. P. Pihheiro, and B. B. Duncan. 2009. Inappropriate eating behaviors during pregnancy: Prevalence and associated factors among pregnant women attending primary care in southern Brazil. *International Journal of Eating Disorders* 42: 387-393.

Stross, C. 2007. *Glasshouse*. New York: Penguin Group.

Swann, R. A., A. Von Holle, L. Torgensen, K. Gendall, T. Reichborn-Kjennerud, and C. M. Bulik. 2009. Attitudes toward weight gain during pregnancy: Results from the Norwegian mother and child cohort study (MoBa). *International Journal of Eating Disorders* 42:394-401.

Taub, D. E. 2005. Review of *Revolting Bodies? The Struggle to Redefine Fat Identity by Kathleen Lebesco*. *Contemporary Sociology* 34(6): 677-679.

Tjepkema, M. 2008. Adult obesity in Canada: Measured height and weight. Statistics Canada. http://www.statcan.gc.ca/pub/82-620-m/2005001/article/adults-adultes/8060-eng.htm

Tyler, I. 2001. Skin-tight. In *Thinking through the skin*, eds. Sara Ahmed and Jackie Stacey, 69-83. London and New York: Routledge.

U.S. Department of Health & Human Services, Department of the Surgeon General. Overweight and Obesity: A Vision for the Future. The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity. http:// www.surgeongeneral.gov/topics/obesity /calltoaction /fact_vision.htm

Warin, M., K.Turner, V. Moore, and M. Davies. 2008. Bodies, mothers and identities: rethinking obesity and BMI. *Sociology of Health & Illness* 30(1): 97-111.

Wetherell, M., S. Taylor, and S. J. Yates (eds). 2001. *Discourse Theory and Practice: A Reader*. London: Sage Publications Inc.

Wolf, Naomi. 1990. *The Beauty Myth*. Toronto: Vintage Canada.

World Health Organization. Global Strategy on Diet, Physical Activity and Health. WHO: Obesity and Overweight. http://www.who.int/dietphysicalactivity/ publications/facts/obesity/en/

World Health Organization. "What is the scale of the obesity problem in your country?" WHO Global Infobase BMI comparison for 2005. https://apps.who.int/infobase/report.aspx?rid=118

Wright, J. 2009. Biopower, biopedagogies, and the obesity epidemic. In *Biopolitics and the 'Obesity Epidemic': Governing Bodies*, eds, Jan Wright and Valerie Harwood, 1-14. New York: Routledge.