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PARENTS, WATCHING:
INTRODUCING SURVEILLANCE INTO MODERN AMERICAN PARENTING

by

James Perry Howell

An Abstract

Of a thesis submitted in partial fulfillment of the
requirements for the Doctor of
Philosophy degree in Communication Studies in
the Graduate College of
The University of Iowa

December 2010

Thesis Supervisor: Professor John Durham Peters

During the last quarter of the twentieth century, there has been a significant expansion in the means by which parents in the United States might use technologies to watch their children. Watching and worrying about children are not new to the job of parenthood, but the ways of watching now available to parents represents a change of degree so great as to represent a change in kind. The parental gaze has become technologized. This dissertation investigates what happens when man-made devices insert themselves into this most basic of human endeavors.

Parenting desires, social expectations, and technological capacities have co-evolved in the United States to a point where the norms of parental watching are increasingly technology-based. This is a "mixed methods," cross-case study. It delves into the particulars of three distinct media while looking for patterns of use and effects across the different technologies. The core of this investigation is three case studies of particular surveillance technologies that all came to prominence, in terms of their popularity or frequency of use, in the United States in the last thirty years. The three subjects of these case studies—fetal ultrasound, Eisenberg, Murkoff, and Hathaway's 1984 pregnancy advice and guide book *What to Expect When You're Expecting*, and baby monitors—are all media that offer parents the opportunity to be better and less anxious parents by enhancing their powers of parenting observation. They form an optical—textual—acoustic triad that demonstrates the breadth of media that are enlisted into surveillance practices.

These new anxiety technologies change thinking, perceptions, and attitudes. They serve both to introduce new human capacities and to direct and to mold existing capacities. They have also helped to change our ideas of what is possible. A few

overarching characteristics of American parental thinking have helped to pushed surveillance to prominence. Middle class American parents of the last quarter of the twentieth century have come to feel that the world is a more dangerous place for their children. They perceive their offspring as more vulnerable to dangers and as less capable of avoiding these dangers on their own. Parents also feel an increased sense of personal responsibility for the safety of their children. It is not that that contemporary parents have warmer or deeper feelings toward their children, but rather that contemporary parents believe that they both can and should control a much broader range of dangers to their children than parents in the past believed they could control.

The "anxiety technologies" of this study serve in part to bring home to their users the riskiness of parenting and the vulnerability of the fetus/infant. These technologies have come to promote responsibility expansion, efficiency orientation, and risk focus for parents. While these technologies do provide parents with a great deal more focused information, many of the perceived enhancements in powers to effect outcomes are presumptive, illusory effects of actual increases in information. Information without influence is as likely to contribute to anxiety as to power.

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Graduate College
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CERTIFICATE OF APPROVAL

PH.D. THESIS

This is to certify that the Ph.D. thesis of

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has been approved by the Examining Committee
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ABSTRACT

During the last quarter of the twentieth century, there has been a significant expansion in the means by which parents in the United States might use technologies to watch their children. Watching and worrying about children are not new to the job of parenthood, but the ways of watching now available to parents represents a change of degree so great as to represent a change in kind. The parental gaze has become technologized. This dissertation investigates what happens when man-made devices insert themselves into this most basic of human endeavors.

Parenting desires, social expectations, and technological capacities have co-evolved in the United States to a point where the norms of parental watching are increasingly technology-based. This is a "mixed methods," cross-case study. It delves into the particulars of three distinct media while looking for patterns of use and effects across the different technologies. The core of this investigation is three case studies of particular surveillance technologies that all came to prominence, in terms of their popularity or frequency of use, in the United States in the last thirty years. The three subjects of these case studies—fetal ultrasound, Eisenberg, Murkoff, and Hathaway's 1984 pregnancy advice and guide book *What to Expect When You're Expecting*, and baby monitors—are all media that offer parents the opportunity to be better and less anxious parents by enhancing their powers of parenting observation. They form an optical—textual—acoustic triad that demonstrates the breadth of media that are enlisted into surveillance practices.

These new anxiety technologies change thinking, perceptions, and attitudes. They serve both to introduce new human capacities and to direct and to mold existing

capacities. They have also helped to change our ideas of what is possible. A few overarching characteristics of American parental thinking have helped to pushed surveillance to prominence. Middle class American parents of the last quarter of the twentieth century have come to feel that the world is a more dangerous place for their children. They perceive their offspring as more vulnerable to dangers and as less capable of avoiding these dangers on their own. Parents also feel an increased sense of personal responsibility for the safety of their children. It is not that that contemporary parents have warmer or deeper feelings toward their children, but rather that contemporary parents believe that they both can and should control a much broader range of dangers to their children than parents in the past believed they could control.

The "anxiety technologies" of this study serve in part to bring home to their users the riskiness of parenting and the vulnerability of the fetus/infant. These technologies have come to promote responsibility expansion, efficiency orientation, and risk focus for parents. While these technologies do provide parents with a great deal more focused information, many of the perceived enhancements in powers to effect outcomes are presumptive, illusory effects of actual increases in information. Information without influence is as likely to contribute to anxiety as to power.

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INTRODUCTION

In some respects this study is a very simple one, as I am looking at a few media technologies and how these have become forces affecting many American parents during the last quarter of the twentieth century. Of course, the details concerning how each of these media come to exert their respective forces, and what these forces might mean for anyone affected by parenting, make for a more complicated story. This study is a new entry in a much longer argument detailing how media do not merely represent or transport information from one point or person to another, but how the media and its products are forces in themselves (van Loon, 2008).

The absorbing details and everyday demands of parenting, along with the intense emotions that arise from these daily details regardless of whether you are the giver or the receiver of the parenting, make it easy to overlook the intimate ways in which media technologies have woven themselves into how parenting now gets done. Media technologies of parenthood have become so routine so quickly, and with so little controversy or debate, that it is similarly easy to miss the changes these technologies have brought to the experience of parenting.

I first became a parent in 1993. Roughly ten years before, three seemingly disparate occurrences were taking place in the United States. None of these three occurrences was marked with much fanfare at the time, but I believe that now, with the bit of hindsight that the subsequent quarter century provides, we can see that these three developments signaled significant changes in American parenting. The simple, inexpensive radio-based “baby monitor” emerged, or, more accurately, the re-emerged in the marketplace. The pregnancy advice book, *What to Expect When You’re Expecting*

(Eisenberg, Murkoff and Hathaway 1984), was first published. Fetal ultrasounds became, statistically speaking, "routine," as women who had ultrasounds at some point during pregnancy became more common than those who did not. By the time I became a parent, it was unremarkable that my wife had kept *What to Expect* by the bedside throughout the pregnancy, that my daughter's photo album commenced before her birth with the grainy reproduction of her first fetal ultrasound, or that we received a baby monitor as a baby shower present even though all of our friends knew that we lived in a two-room apartment. While I did not realize it at the time, how quickly all of these things became unremarkable and how "naturally" all of these media seemed to fit into our parenting lives were important clues as to why they are now worth talking about.

This is, from one perspective, a study about media effects. But it is also a study about how certain media become intimate parts of very important human functions—in the present case, those functions being pregnancy and early childrearing. This is a "mixed methods," cross-case study, one that delves into the particulars of three distinct media while looking for patterns of use and effects across the different technologies. These media each offer their own sort of assistance to parents, but each in some way claims to help parents to watch their children better. By implication and at time overtly, these media promise to make "better" parents—a powerful attraction to those concerned with doing parenting right.

In these case studies, I am concerned with how the objects come to construct and to communicate their promises of enhancing parental powers. One consistency across all three technologies is their active contribution to making how parents watch children more like surveillance—routinized, planned, and technology-enhanced data gathering. Each of

the technologies here molds parental watching in its own peculiar way, so I use a variety of sources for getting at the promises of the technologies, the ways they go about trying to fulfill these promises, and the outcomes from parental uses of the media.

I begin the examination of my text-based media, *What to Expect When You're Expecting* (Eisenberg, Murkoff and Hathaway 1984), by doing a close reading of the book itself. I focus especially on how the book advocates for and instructs the pregnant woman in the details of a surveillance perspective toward her own body. To help to show how this was a new approach, I also compare *What to Expect* with some of its contemporary pregnancy advice books. I look at sales data for this category of book as evidence for the extreme attraction that *What to Expect*'s messages and methods have for mothers-to-be. I also look in detail at reactions to more recent editions of the book posted on the internet sales site Amazon.com as a window into the intense and wide-ranging emotional reactions *What to Expect* inspires in its readers.

My visual medium, fetal ultrasound, has inspired a large body of formal effects research, so I begin by reviewing these results. Fetal ultrasound has also provoked the largest body of published criticism of the three surveillance technologies included in this study, so I also review the work of several authors who analyze the device from an explicitly feminist perspective. I look at how ultrasound textbooks, those used by doctors for basic information about the device and procedures, write about the pregnant woman and how this construction has changed as the procedure has gone from exotic new technology to a routine part of American pregnancy care. Finally, I look at the expansion of fetal ultrasound beyond the bounds of obstetrical care, including the growth of the "keepsake" ultrasound industry, which more explicitly places fetal ultrasound within the

long history of family photography, and the role of ultrasound in the debate over abortion in the United States. Many states have moved to require ultrasounds as a condition of obtaining a legal abortion, raising a number of questions about ultrasound effects and who, ultimately, is really being observed by the device.

Following the course of development through media targeting pregnancy and into media aimed at the infant, the final case study looks at baby monitors. While baby monitors initially achieved market popularity in the mid-1980s as an acoustic medium, I construct a history of the technology, which actually dates to the early part of the twentieth century. I look at the surprisingly small role that advertising has played in the marketing of the device. I analyze in detail opinions parents express about their baby monitors in customer reviews of the devices on two popular internet sales sites, Amazon.com and Epinion.com. I also present results from my focused interviews with four sets of parents of young children, who speak intimately about the worries and dreams of well-educated, middle class parents in contemporary America. These parents share their thoughts and experiences with baby monitors and present first hand experiences with the effects of parental anxiety technologies.

This study focuses on the parents of very young, essentially pre-language, infants, an approach that offers significant advantages and disadvantages. I exclude from this inquiry, for example, some tantalizing questions about how surveillance influences later stages of family development. I will not be looking at how surveillance affects parent-child verbal communication, nor will I be looking at the ways that child consent interacts with surveillance practices throughout the family lifespan. This focus will, however,

allow me to expand upon an understudied aspect of surveillance, the effects of surveillance processes on the watchers.

Looking at how parenting has become a surveillance practice requires looking at both parenting and surveillance in new ways, so I begin this study with detailed examinations of what critical and empirical scholars have had to say about relevant aspects of surveillance and parenting. At times this review makes for strange bedfellows, as these are not two fields which commonly intersect, much less actively interact. The various theoretical and empirical researchers whom I bring together for my cause often take very different perspectives on the phenomena under study. At times, this may leave the reader wondering if these authors are thinking about similar things at all. I try to address some of these concerns throughout the text, but I am also sure that my own efforts to integrate the insights of others and to make clear how these insights add to our understanding of parenting, technology, and surveillance sometimes falls short of success. I do believe, however, that a picture of this relationship becomes more clear as the reader moves through this wide range of very interesting material. I hope that the reader will come to agree that this study helps us to understand some of the important forces that have helped to make contemporary American parenting.

CHAPTER ONE

TECHNICALLY WATCHFUL: AMERICAN PARENTING AND SURVEILLANCE TECHNOLOGY IN THE LATE TWENTIETH CENTURY

> *Don't Worry!* Dangers that lurk in the nursery lose their terror the instant you install Elkay 2-Way Communicators. You can sleep, play bridge, or enjoy your garden with comforting assurance. Even the feeblest cry will be heard instantly wherever you are. . . Give your troubled nerves the rest they deserve. Surely your peace of mind—your health—is worth $12.50.
>
> *Parents Magazine*, 1939, "Elkay Two Way Communicator for the Home"

Media technologies have been enticing parents with offers of expanded observational capacities for quite some time. But especially in the last thirty years or so, there has been a massive acceleration in the means by which parents in the United States might use technologies to watch their children. Watching and worrying about children is not new to the job of parenthood, but the ways of watching now available to parents represents a change of degree so great as to represent a change in kind. The parental gaze has become technologized. What happens when man-made devices (and the profit-seeking corporations that produce them) insert themselves into this most basic of human endeavors? What are the attractions of these technologies for parents and how do these technologies alter the experience of parenting?

Parenting desires, social expectations, and technological capacities have co-evolved in the United States to a point where the norms of parental watching are increasingly technology-based. The core of this investigation is three case studies of particular surveillance technologies that all came to prominence in the United States around the same time, during mid-1980s. The three subjects of these case studies—fetal ultrasound, the pregnancy advice and guide book *What to Expect When You're Expecting* (Eisenberg, Murkoff, and Hathaway 1984), and baby monitors—are all media that offer

parents the opportunity to be better and less anxious parents by enhancing their powers of parenting observation. They form an optical—textual—acoustic triad that demonstrates the breadth of media that can be enlisted into surveillance practices. Analyzing these three media as "surveillance technologies" requires a new and different look at the objects themselves and the ways they are typically used. Because they each provide their own distinct sorts of surveillant experiences, each also reveals a different aspect of the phenomenon of surveillance.

In practice, all three of the surveillance media in the current study bend the traditional or expected role definitions of watcher and watched. *What to Expect* explicitly promotes self-surveillance. Fetal ultrasounds place mothers in simultaneous roles of setting, watcher, and target. Even baby monitors can sometimes leave their users wondering whether the device serves them or they serve the device. While the promises of the media are clear, their actual effects will be seen to be much less so. Do parents who adopt more routinized, regular, technology-enhanced approaches to watching their developing off-spring, that is, parents who come to practice parenting surveillance, really come to feel themselves to be better, more effective, happier, or more satisfied parents?

How has it become possible to think of parenting in terms of something as penal sounding as surveillance? Surveillance has gradually crept into the routines of contemporary American parenting. Our conceptions about both parenting and about surveillance have gradually changes. "Parenting" and "surveillance" are not typically discussed as areas with much in common. In my experience, though, when the topics are brought up together, most people have a sort of "ah ha" or "of course" reaction. If you have been a parent, when you begin to think about it, you are immediately impressed by

how much surveillance the role seemed to require. Even if you have never been a parent, you easily remember your own parents' surveillance efforts and your efforts to avoid them. So, if parenting and surveillance seem such an obvious facet of family experience when their integration is suggested, why has this pairing been so infrequently studied by scholars from both the parenting and surveillance fields?

I suspect that one major source of this oversight is the slightly shady or sinister connotations of the term "surveillance," connotations that do not sit well with the idealized images many of us associate with parenthood. As scholars of surveillance have investigated the phenomenon of surveillance in greater detail, they have tried to formalize their subject of study with more clear definitions of what they mean by surveillance. Although the history of the term "surveillance" might be an interesting study in its own right, for the purposes of this study I will be using the definition produced by a group effort of prominent scholars in the field (Ball et al. 2006, 4):

> Where we find purposeful, routine, systematic and focused attention paid to personal details, for the sake of control, entitlement, management, influence or protection, we are looking at surveillance.

The authors offer this further clarification of their terms:

> • The attention is first *purposeful*; the watching has a point that can be justified, in terms of control, entitlement, or some other publicly agreed goal.
> • Then it is *routine*; it happens as we all go about our daily business, it's in the weave of life.
> • But surveillance is also *systematic*; it is planned and carried out according to a schedule that is rational, not merely random.
> • Lastly, it is *focused*; surveillance gets down to details. While some surveillance depends on aggregate data, much refers to identifiable persons, whose data are collected, stored, transmitted, retrieved, compared, mined and traded.
> [Bulletpoints and italics in original.]

What connotations of surveillance make it seem somehow wrong to claim that American parents have come to practice surveillance to a surprising degree? First,

surveillance typically produces power for the individual or group practicing it—but this power is "two-sided" (Ball et al. 2006, 2). This additional power can be used for good or ill, depending on many other factors, such as the motives and material capabilities of the surveillants. Though power relations, and even the explicit exercise of power by parents over their children, are an obvious aspect of family dynamics, they are perhaps aspects of family relations about which some Americans are less than completely comfortable, conflicting as they do with American democratic and egalitarian ideals. This is doubly the case when we consider how easily such increased power might be used against those begin watched.

Another potentially problematic aspect of surveillance is its notoriously "leaky" character. Surveillance often produces "data," or information in storable and transportable forms, so the power-producing capacities of the information from surveillance may not be limited to the individual or group who actually initiated the surveillance. These "secondary surveillants" may have very different motives, morals, and goals than those of the original surveillants. This problem confronts even the most seemingly benign of surveillance practices, a class that I believe includes all of the parenting surveillance included in this study, practices in which the "protection" or care functions of the surveillance are more prominent than are the functions of control or manipulation. At one point in the history of baby monitors, for example, criminals realized that the monitors produced easily intercepted radio transmissions. This allowed baby monitors to unwittingly function as handy eavesdropping devices that helped criminals determine when a family was asleep or not at home, so that the home might be more easily burgled.

Apart from such clear cases in which the nefarious motives of some surveillants can be easily identified, surveillance often produces other unintended consequences. Ball et al. note that some of these unintended consequences are encapsulated in two of the meanings of “discriminate” (Ball et al. 2006). Ball et al observe that “all true surveillance systems are meant to discriminate between one group and another” (Ball et al. 2006, 2). They mean “discriminate” as in “distinguish between,” but they are mindful of how this distinguishing process can easily lead to “discriminate’s” more negative sense. This study will highlight some different, yet still unintended, consequences of the power to discriminate conferred by surveillance. The new technologized surveillance in parenting produces new sorts of information, and this new information will be seen to produce both new comforts and new anxieties. Unsurprisingly, it is these new comforts that are emphasized by each technology’s proponents. One purpose of this study is to raise awareness of the new anxieties that also attend these surveillance practices, and to try to look at how users balance these comforts and anxieties. Fetal ultrasounds, for example, give parents unprecedented access to knowledge about their fetus’s development. When the news is good, ultrasounds can put parents at ease. But when the news is less good, parents can be placed in anxiety-provoking situations that require them to make literal life-or-death decisions not contemplated by previous generations of parents. But although this is part of the story, the impact of new parenting surveillance is not limited to this, “new information necessitates new decisions” dilemma. The effects of new parenting surveillance are both more far-reaching and more complex than any individual parents’ choices. For example, many surveillance technologies quickly

establish themselves as a "norm" of parenting, so opting out of the practice becomes increasing difficult.

Surveillance, as it is commonly understood and experienced, is clearly associated with mistrust. "Surveillance fosters suspicion" (Ball et al. 2006, 3). The relationship between surveillance and mistrust is a deep one, one that operates in both directions. The presence of surveillance often strongly implies, to all sides of the surveillance relationship, that the person being watched is not trusted. But if being watched can make the target feel guilty or accused, it can also put the watcher in an uncomfortable position in which constant vigilance seems to be required. Surveillance, like any empirical method, can never definitively prove a universal—no amount of watching can establish definitively that an individual is always trustworthy, or always safe, or always of any condition whose concern might prompt surveillance attention. The best it can do, even when it is operating correctly and the humans involved are paying proper attention and interpreting its data correctly, it that the target has been trustworthy, or has been safe. The steps into the future, the steps away from mistrust and uncertainty, must always be a judgment or extrapolation from the surveillance data, they can never its definitive conclusion.

The general availability of these surveillance practices has permanently changed parenting by changing what the greater society sees as "responsible" behavior for an American parent. Once the power of a particular surveillance practice becomes generally acknowledged, any parent who fails to avail himself or herself of this power becomes suspect of not performing the parenting role with sufficient care. In ways similar to how encasing a child in a car seat has become a minimal acceptable societal standard for

responsible parenting, parenting surveillance threatens to produce a host of new practices with "imperative character" (Tymstra 1989)—they become the norms parents cannot refuse, lest they risk the negative judgments of society or, perhaps even more importantly, of themselves. Parenting surveillance technologies change parents' own ideas about what they can control in their children's lives, producing expanded senses of both influence and responsibility. Technology plays a role in setting standards of normality.

"Watching" seems such an integral aspect of parenting that it can be difficult at first to see it as a variable. Parenting is many things, but in many ways it is a craft, a complex activity that can be carried out in a number of different ways, with considerably different outcomes even in cases where there is some agreement about the general goals. As a craft, just how the supervising, looking after, and keeping tabs on children that comprises parental "watching" gets accomplished varies greatly across practitioners, even as most parents might express allegiance to the ultimate outcome of raising children who make it safely to adulthood. Just as disciplinary techniques employed by parents to guide and to punish children are noted by both scholars and the casual observer to vary from family to family, we can also talk about how such techniques change more broadly across time, as certain practices fall into or out of vogue ("time out," spanking) as effective, acceptable, or legal ways of accomplishing the parental craft. But while the more overt methods of training and control thought of as "disciplinary techniques" are a well-established subject of study for scholars of parenting (as well as for scholars of prisons, governments, factories, or wherever one group of people seeks to control and direct others), the supervisory and "watching" aspect of parenting is often ignored in

analyses of parenting behavior. The Foucaultian insight that watching and supervision can themselves be methods of discipline and control (Foucault 1977; Foucault 1978) has been accepted to great benefit in the analysis of a variety of human endeavors, from the workings of prisons to the workings of the internet. Watching and supervision are also important ways by which parents exert discipline over children, and they highlight how disciplinary practices affect their practitioners just as surely as they influence their targets. This investigation will demonstrate how surveillance establishes a relationship between watcher and target, a relationship in which both sides may be affected.

Aspects of human behavior that seem the most "natural" are often the most difficult to notice and to characterize as human constructions. But no less than an overtly disciplinary parenting practice such as spanking, watching and supervision are also subject to "vogues" as to what are acceptable and expected practices for the responsible parent of a given time. Parenting is radically historical.

The notions of what childhood is and what makes a "responsible" parent in the United States have changed notably over the past century and a half. While childhood and parenting have distinctive meanings among different social classes, it is still possible to construct a narrative of an overall societal shift in parenting practices and parallel changes in the legal and social expectations of children. Surveillance technologies have both reflected and affected these societal changes. Surveillance practices are almost always motivated by risk judgments; worries that something bad may happen produce urges to vigilance. Changing conceptions of childhood and parenting have changed parenting worries, while changing technologies have greatly expanded the ways in which parents can be vigilant. Parenthood carries responsibilities for care, control, direction,

and protection—that is, governance responsibilities—that across the lifespan as each child develops, and evolve across many lifespans as society's expectations for family governance change. Have we reached a point where surveillance is an expectation, not just an option, for modern parental governance?

Surveillance and Family: Time—Space—Risk

In his discussion of the work of Harold Innis, James Carey is noted to have described the course of Western history as the change from time-binding communication technologies to space-binding ones (Carey 1988). Both authors saw communication technologies as not only reflecting the cultural interests (and biases) of their milieu, but also as actively shaping a culture's conceptualizations of itself and the world of which it is a part. As Carey explained, Innis saw communication technologies as shaping a culture through their powers to alter the subjects of thought and interest, the symbols with which thought occurred, and the communities in which thoughts developed (Carey 1988).

The increased complexity, ubiquity, and integration of surveillance technologies into contemporary American society suggest that we may be witnessing another transition, this time from a space-binding culture to a risk-binding one. This is an important transition not just because the subjects of cultural attention may be transitioning from space and time, which are both intimately related to the conquest and mastery of the external environment, to the more inwardly focused, psychological and subjective notion of risk. The transition to "risk binding" technologies also implies an entirely different notion of "binding." Whereas "space binding" and "time binding" technologies forged links that allowed for human connectedness across space or time, the type of binding that occurs as a result of "risk binding" technologies is the "binding" of

the bacteriophage, an effort to infect the risk and to control it from within. A cultural focused on risk binding seems to acknowledge that we are inevitably, perhaps even inescapably connected, if only through the dangers we mutally experience. These risk binding attempts seem to say that conquest and mastery of our threats and challenges are no longer realistic goals—"risk binding" offers a hoped-for protection of the social organism, while acknowledging that the risks remain alive and present.

If time binding has faded from relevance, it is the victim of its own success—time impermanence has become a non-issue for many Americans who expect (perhaps incorrectly) that their digital archive will insure instantaneous, permanent access to all they want or need to recall. Space binding has similarly become routine, as global transportation and digital communication have made location increasingly irrelevant as an impediment to production, relationship maintenance, or knowledge acquisition. What now gets our attention are the risks accompanying even our routine daily activities—if we stay at home, our houses bathe us in cancer-producing radon gas; if we go outside for a walk to get some fresh air, our water bottles leach chemicals that turn thirst-slaking sips into attacks on our endocrine systems. The answer offered by American capitalism to this apparent explosion of risks is the comforting embrace of protective technologies, with surveillance technologies high on the list of risk reducers.

"Protection" is a model in many ways better suited to the workings of contemporary, service economy capitalism than is "mastery." "Protection" implies both an ongoing risk and an ongoing, self-regenerating need, while "mastery" implies a finite and achievable state. If corporations are to sell into and generate profits by a mastery situation, corporations can only insure continued sales by the manufacturing of new

consumers to replace the satisfied masters, along with the introduction of new risks for which new mastery product purchases will be required. Within a protection system, however, the needs for (profit-generating) services are as constant as the risks being guarded against—corporations need only convince the consumer of the ongoing presence of risk to insure consistent demand. The developing child presents a tantalizing target for the construction of multiple and ongoing risks. Surveillance can be sold to parents in the form of material goods promising protection with regular use (baby monitors), in the form of training for self-improvement and self-regulation (*What to Expect When You're Expecting*), and in the form of information that keeps the parent abreast of rapidly changing, yet invisible, developments (fetal ultrasounds). Attention to how surveillance is sold to parents will make it clear that modern American capitalism has produced an amalgamation of protection and mastery models to satisfy contemporary risk-binding needs.

"Risk Society," Control, and the Growth of Surveillance

Ulrich Beck (1992) and Anthony Giddens (1991,1999), among many others, have identified the prominent focus on risk, including both anxieties about risks and efforts to respond to these anxieties, as a defining characteristic of contemporary life in Western societies. While Beck, who first characterized Western life since the last quarter of the twentith century as a "risk society," often highlights the contemporary world's increased potentials for widespread environmental disasters (Beck 1992), Giddens has noted that this prominent focus does not mean that life has actually become more dangerous but, rather, that individuals in contemporary cultures are "bound up with the aspiration to control and particularly with the idea of controlling the future" (Giddens 1999, 2). This

increasing focus on control, including the beliefs that one both can and should control an increasingly wide range of one's environment, is fundamental to understanding important changes in parenting that have occurred in the past 30 years. This increasing desire for control is an important motive force behind parents' increasing use of surveillance technologies and practices. It operates to inspire the push parents feel to adopt surveillance tactics. Its ultimately unlimited, unsatisfiable nature (for all possible risks can never be foreseen or fully controlled) insures a continually evolving marketplace for news ideas of risks and new products and services to assist in risk containment.

Giddens (1999), building on the ideas of Beck (1992), contends that contemporary risk society inhabitants acquire this notable focus on risk principally as a result of two broader developments of modern culture. The first development is a shift in how the relationship between humans and nature is perceived, a shift from being primarily concerned with how nature might affect (especially how it might negatively affect) us to being primarily concerned with how we are affecting (again, especially how we are negatively affecting) nature. Giddens believes that this increased attention to human agency became solid in the mid-20th century and that is has accelerated in the contemporary period. The second important development underlying the increased contemporary focus on risk is the gradual fading of fate as a principle explanation of human events. With this decline of fate as a major explanatory principle, people come to believe that causes can (or at least should) be identified. According to Beck and Giddens, the post-modern, late twentieth century twist on this loss of faith in fate, an important psychological component of what he describes as the "risk society," is that people have come to see that, especially in the case of dangers, causation is acknowledged to be

multiple, often a function of human construction, and rarely 100% knowable in any case. This acknowledgement of ultimate unknowability is held simultaneously with the belief that causes exist and should be identified. This way of experiencing the world creates a perpetual tension between the responsibility to know and the anxiety of limited perceptions.

Both of these developments contribute to important attitudinal shifts that lead contemporary parents to make greater use of surveillance practices than previous generations of parents. As both “nature” and “fate” become less salient as explanations of undesirable parenting outcomes (a malformed fetus, or a toddler injured while crawling out of a crib), both parents themselves and the broader societal networks they inhabit look for causes of these bad occurrences. As parents make up the nuclear family’s principle internal sources administrative power, especially when children are young, the actions of parents themselves become a logical focus (though not necessarily the exclusive focus) for inquiries into bad outcomes. Parents see themselves, and are seen by others, as responsible for an increasing range of events related to their children—an increasing number of childhood occurrences are seen as “outcomes” subject to the control and intervention of the parents. “Good” or “responsible” parents are those who prevent bad outcomes, so bad outcomes call into question whether the parents involved have, in fact, been good and responsible. This questioning can occur at an extra-familial level (e.g., protective social services investigations of child injuries) and at the intra-familial level (when parents question each other’s behavior) and at the level of the self (when a parent is racked with guilt and doubt about some aspect of his/her own behavior in relation to an undesired child outcome).

Although most scholars of risk, including Giddens and Beck, tend to focus on the new dangers brought on by technological advances and on the increased burdens of attention and responsibility brought on by the contemporary focus on risk, Giddens (1999) does acknowledge positive sides to the social developments he describes. Decreasing acceptance of fate and decreasing constriction to traditional roles and behaviors may bring uncertainty and anxiety, but they also bring increased freedom and opportunities. Individuals may have greater freedom of choice to chart their own ways of understanding and/or of responding to the risks of the world—though Giddens observes that the breadth of such freedoms are also heavily dependent on social class and other social/economic circumstances. Similarly, technological advances often expand the range of choices—that is one important source of both their attractiveness and their anxiety-provoking potential, as more choices can mean both more opportunities for good outcomes and more opportunities for doubt about the wisdom of any particular choice.

"Reflexive modernization" (Beck 1992), the application of the modern tendencies to question and doubt to the practices and achievements of modernity themselves, is seen in this awareness of the double-edged nature of the changes brought about by advancing technologies. It is the awareness of contemporary American parents that the expanded possibilities brought about by changes in the products and practices of parenting may likely carry costs of which they are only dimly or not-at-all aware. Like other developments characteristic of the risk society, reflexive modernization is itself double-edged, producing on the one hand anxiety about potential negative consequences but also, simultaneously in many cases, increased efforts from parents to the tasks of consolidating information from multiple sources and of making decisions with as much information as

possible. This project itself can be seen as a facet of the reflexive modernization process. Its goal is to highlight and to evaluate not just a particular individual technological advance for its pros and cons, but to identify the gains and dangers of the increasingly easy incorporation of surveillance technologies and practices as a whole into parenting.

Foucault's Panopticon and Surveillance

Many accounts of modernity and technoculture (for example, Lyon 1994, Robins and Webster 1999, Whitaker 1999, Misa, Brey, and Feenberg 2003, Andrejevic 2007) emphasize the growing reach of surveillance into the most intimate aspects of daily life. These accounts support Foucault's observation that we live in an age of "social orthopedics" (Foucault 2000, 57), a time when supervision becomes integral to the exercise of power, and power manipulates future behavior rather than just punishing past transgressions. Surveillance practices are seen as vital components of the supervision required for the exercise of modern power.

Contemporary studies of surveillance frequently invoke, citing Bentham's 1791 work (Bentham 1995), usually via Foucault (1977), the image of the panopticon, a system of surveillance by which each individual is led ultimately to internalize the mechanisms of social control. In several different works, Foucault pushes the idea of "panopticism" far beyond the realm of concrete surveillance practices, developing the prison architecture as a metaphor for the much broader cultural shift away from spectacular punishment and toward self-discipline as the more efficient method of directing societal behavior. Panopticism allows disciplinary power to extend its reach both more broadly across the population and more deeply into the individual's own psychic functioning than punitive forms of power ever could. Foucault also links panopticism to the creation of

new forms of knowledge and their related social practices, such as the systematic monitoring of human behavior under a variety of conditions and the development of authoritative institutions for collecting knowledge and administering the social practices, such as psychology and psychiatry (Foucault 2000, Roberts 2005).

Foucault and scholars building on his ideas have used the panopticon metaphor to look at how power and discipline operate at the societal level, as well as how surveillance processes tend to construct a particular subject for the "surveillant," the individual or institution doing the watching. It is also possible to delve into Foucault's descriptions for ideas about how surveillance processes affect the individuals targeted by them and how these processes contribute to the individual target's experience of the world. Panoptic surveillance links to behavioral control in several different ways. Targets of surveillance have different subjective experiences of surveillance under these different modes of operation.

In its most overt and material forms, such as the prison as originally envisioned by Bentham (1995), surveillance achieves social behavioral control through a combination of ubiquity, ambiguity, and consequence severity. Bentham's prison design called for a central watching area, with cells for prisoners radiating outward. An arrangement of slats and lighting makes the prisoner visible at all times to watchers in the central area, but the prisoner is unable to see into the central area. The effect of this arrangement on the prisoner is that the surveilled individual realizes that he or she might be under surveillance at any time. Similarly, according to Bentham, the individual knows that he or she cannot know whether surveillance is actively occurring at any given moment.

Combined with this physical design is a particular style of prison behavioral management. This management style is equal in importance to the physical design if the surveillance is to have the behavioral control effects described by both Bentham and Foucault. These authors, and most of the authors in surveillance studies who have built on Foucault's ideas, tend to de-emphasize this aspect of panopticism. Though the particular manner in which this might be achieved is often left to the reader's imagination, the goal of the "management style" is clear: the consequence of being observed doing whatever behavior is forbidden must be quite severe, so severe that the individual believes he or she must above all avoid this consequence. The panopticon, as actual physical structure, and panopticism, as metaphor, hold that under the combination of these three conditions, ubiquity, ambiguity, and severity, most individuals will come to behave as if misbehaviors will always be discovered and punishments will be certain and horrible—that is, most individuals will not engage in these forbidden behaviors.

Under this straightforward iteration of the panopticon, surveillance contributes to the individual's exercise of behavioral control, but the behavioral control remains, much like the surveillance, external in important ways to the will of the individual. The individual is controlling the forbidden behavior to avoid the feared punishment. The possibility of surveillance is "alive" enough that, in combination with the severity of the punishment, the individual makes the rational decision that the forbidden behavior is "not worth it"—i.e., the promised pleasure of the forbidden behavior is rationally outweighed by the likelihood of discovery and the severity of punishment.

Further iterations of the panopticon surveillance metaphor develop the idea that, under certain conditions, behavioral controls become, through a variety of different

routes, importantly less external to the active will of the individual. One way this can happen is through the gradual acceptance of surveillance as integral to social operations. The individual comes to accept that constant and accurate surveillance, along with swift and sure punishment, are integral to the environment, rather than contingent aspects of it. This type of surveillance requires that the surveillance process move beyond the confines of a particular physical structure and become a part of the more general community. Foucault believed that under such a system, resistance to the behavioral restrictions imposed along with the surveillance became for many people, while not a logical impossibility, no longer a behavioral option actively considered. Most targets of this sort of surveillance system will cease assessing whether or not surveillance is present and will operate, with little or no consciousness, as if the surveillance is a given. The subject's feelings about surveillance are notably different at this level of the integration of surveillance into the social fabric than they are under condition in which surveillance is tied to a particular physical location. Surveillance is no longer the punitive foreman or prison guard, ever ready to administer a cost for any transgression. The subject's adjustment to the presence of surveillance means that his or her actual wants and needs begin to conform to the behavioral restrictions that surveillance authority dictates. While surveillance is still external to the individual, the subject internalizes many more aspects of the behavior control, as aspects of the subject's psyche have made important adjustments to the (assumed) efficient operations of surveillance.

An additional step in the incorporation of surveillance processes occurs when subjects move beyond acquiescence and toward actively enjoying and seeking out surveillance benefits. In these cases, subjects see the behavioral restrictions that

surveillance seeks to enforce as coincident with their own desires or values. At this stage of surveillance development, the targets welcome its behavioral restrictions. The target may continue to be aware that his or her own target position gives up important power relative to the surveillant, but the target feels an important elision of goals with the behavioral controls that surveillance brings. Surveillance targets judge this additional power enjoyed by the surveillants as irrelevant, inconsequential, or worth the price for the benefits gained from the overall effects of surveillance. The subjective experience is not just accommodation or acquiescence to surveillance—it is active support of surveillance.

Foucault holds that the ultimate goal of panoptic surveillance is a further step in its development, one in which the surveillance itself, as well as the surveillance-inspired behavioral control, becomes an exercise of the will of the surveillance subject. The individual takes on the ideals, beliefs, and values, as well as the behaviors that the panoptic surveillants sought to impose by external force. The individual comes to advocate not only the behavioral mandates, but also a worldview that supports and maintains these behavioral directives. Within this perspective, the individual no longer experiences surveillance as foreign, as imposed by an “outside” force. The individual has become simultaneously the guard and the prisoner within the panopticon, both surveillant and surveillance’s target.

Foucault and others have developed the ideas that self-surveillance, and the adoption of the values, perspectives, and beliefs that support it, are the results of a gradual inculcation of panoptic surveillance strategies. Because the targets of self-surveillance are also its advocates, the powers external to the individual that the surveillance may serve (by producing some behaviors and eliminating others) become

increasingly difficult to identify. In Bentham's development of the panopticon as prison architecture and operating organization, the roles, functions, and power relations of all concerned were clear. These power structures and their operations become less overt, more "naturalized," and less easy to identify with each successive iteration of the panoptic into a fabric of social surveillance and social behavioral control. At the extreme of *self*-surveillance, the individual experiences the surveillance as the exercise of his or her own power. The individual willingly, even enthusiastically, becomes the object of his or her own panoptic gaze.

One of Foucault's central insights is that power relations are integral to social processes such as surveillance. Self-surveillance can be seen as a process of self-generated power, of gaining greater control over one's own efforts in order better to direct them consistently toward one's own goals. But it is important also to make note of who constructs, and who benefits from, worldviews supportive of surveillance generally, including self-surveillance. Foucault implies that this construction and these benefits are not as self-constructed as they might seem to the participants.

Foucault's panopticon underscores surveillance's function as a generator of power, power for the surveillants over the targets of surveillance. To the extent that Foucault attends to the subjective experiences of those actually involved in the surveillance, he focuses primarily on the discomforts and controls experienced by surveillance's targets and how the targets are likely to respond. Surveillants gain the power to accomplish their goals and to compel the targets to behave consistently with the surveillants' goals. For Foucault's panopticon metaphor, this is sufficient analysis to explain the attraction (what Foucault sees as a general urge across most members of the

population) to become one of the watchers rather than merely one of the watched. But if the panopticon metaphor offers more insights into the experiences of the target than the experiences of the surveillants, other aspects of Foucault's thinking hint at a more complex understanding of the watcher's experiences, which will also be of relevance to our present analysis of parents' practices of surveillance.

Foucault's Governmentality and Surveillance

While the image of Bentham's panopticon developed by Foucault has for many years been the dominant paradigm for analyzing the processes of surveillance (Bentham 1995, Foucault 1977), lately surveillance scholars have shown an increasing interest in challenging the panopticon as an explanatory model. Haggerty (2006), for example, contends that Foucault's own notions of "governance" and "governmentality" hold more promise than does the panopticon for explaining the wide variety of ways that surveillance has come to be practiced in contemporary societies.

Haggerty's explications of Foucault's perspectives on governance and governmentality provide a useful structure for understanding how surveillance works and where surveillance fits within larger social processes. As a theoretical construct, governance seeks to describe and explain "characteristic efforts to pattern the behavior of people in prescribed directions" (Haggerty 2006, 40), that is, it seeks to explain how some people try to get other people to behave in certain ways. Governance theory analyzes these efforts across three broad categories: "rationalities," which are the "conscious reflections on the aims and ambitions of governing," "technologies," the tools used to achieve governmental aims, and "subjects," the "targets of governance" (Haggerty 2006, 40). Haggerty notes that the governmentality concept of "technologies"

includes not only the material manifestations that might come most obviously to mind with the use of the word “tools,” but also the strategies and behaviors used to achieve governance aims. Similarly, the concept of “subjects” typically implies for governance scholars much more active agents than might be connoted at first by the term “targets”—subjects are always seen as possessing the potential for a variety of responses, such as support, compliance, resistance, and/or subversion, to the governance efforts of others.

Within this “governmentality” model, surveillance can be seen as a technology of broader governance processes, but it is also a governance process itself, with its own agents, rationales, technologies, and subjects. What the model contributes to our understanding of surveillance is the idea that, if we are to understand them fully, particular examples of surveillance must be tied both to the aims of those who employ them and to the activities of those who are subject to the surveillance, including the activities that are the nominal cause for the surveillance and the activities that can be seen as a direct response to the surveillance itself. Following Foucault, Haggerty is arguing that surveillance (especially in its modern technological manifestations) is most accurately seen as potentially powerful rather than as inherently either good or evil. Surveillance only acquires good or evil characteristics within the actual “rationalities—technologies—subjects” context in which it is employed. Using Foucault’s thinking as a model for the present analysis also means remembering that lines of causation are usually multiple, interwoven, and embedded, rather than simple and direct.

David Lyon has described surveillance as having “two faces” : “care and control” (Lyon 2001, p. 3). These two faces can be seen as developing from two broad categories of rationalities or aims that motivate the surveillance activities. The first of these

rationalities is the goal of eliminating proscribed or forbidden behaviors. Most typically, these proscribed behaviors are ones that are seen (by the surveillants or those for whom the surveillants are acting as proxies) as interfering with some right or privilege. The direction of the behaviors of those being surveilled away from these proscribed behaviors is the classic "control" function of surveillance. Foucault's panopticon model emphasizes that the goal of much of surveillance is to induce self-control in the surveilled subjects so that the surveillant powers will not have to exercise more overt methods of behavioral control.

The second major "face" of surveillance comes from a different sort of rationale, admittedly with many parallels to the control function described above, but with enough of a difference in emotional tone that it warrants a distinct category. This second aim of surveillance is "care": the protection and support of those being watched. While the explicit rationality of the first sort of surveillance is the limiting of proscribed, rights-violating behaviors, this second sort focuses on assisting the targets of the surveillants to "flourish" (Lyon, 2001, 3), that is, on assisting the surveillance targets to maintain their own integrity in order to continue to develop and to exercise their own rights.

By now we are familiar with accounts of surveillance that analyze surveillance as an instrument of disciplinary power welded by governments or corporations. Some accounts of these sorts of surveillance, taking the long historical view, also mention government and corporate forms of watching as supplanting earlier forms of surveillance provided by the family or by the church (Lyon, 2001). While some recent work on surveillance, such as Haggerty's, has criticized the tendency of surveillance studies to focus on the "control" half of the dual "care and control" purposes of surveillance

identified by Lyon, most of the work on surveillance continues to focus on how governments and corporations use surveillance to monitor and, ultimately, to direct the behaviors of its targets. Governance theory can help to guide investigation of the workings of any number of different organizations or institutions whose aims (whether control, care, or, in most cases of parenting, both care and control) are "to pattern the behavior of people in prescribed directions." If the aims or goals, the rationalities, of "care" surveillance activities are distinguishable from "control" surveillance, does this lead to different governance technologies, different governance subjects, and different responses from these subjects?

It is easy to see the "control" aims, if not the explicit rationalities, of many governance activities, because the most overt manifestations of many such activities are their proscriptions of behaviors: speed limit signs, "no smoking" warnings, the locked exit gate and beeping alarm of the inventory control tags in stores or libraries, or most of the Ten Commandments. The patterning and prescription of behaviors seem to include, almost automatically, the proscription of behaviors—in Lyon's terminology, the control of behaviors. The "care" aims or rationalities of governance activities are often more difficult to identify. One reason for this may be that, simply put, when it comes to governance activities, care is a less common aim than is control—many governance programs do not include any overt aim that their subjects "flourish." Another reason for this difficulty in associating care with governance activities is that care, as the word is most commonly understood, can be shown in many ways that do not obviously involve the directions of people's behaviors in prescribed directions, even if the aim of that direction is, as Lyon's definitions would suggest for "care" surveillance, protection.

Taken together, these first two reasons highlight how "care" is a much more tenuous aspect of governance than is "control." So, in the situations in which governance efforts seek to combine control with care, these efforts combine an essential or definitional aspect of governance function with a contingent or voluntary one. This means that, within a rationality of governance that espouses "care and control," the "care" element will always be the more ephemeral, and easily lost, goal of governing.

The third and perhaps the most salient reason why surveillance scholars have been reluctant to look into the care face of surveillance is that care rationalities can be presented by governance powers as the more emotionally or politically acceptable rationale for what are, in fact, control rationalities—that is, it is often more socially acceptable to argue that you wish to direct someone's behaviors because you care about them than because you want to control them. "Care" becomes the camouflage for "control." This has led scholars, quite rightly, to be suspicious of claims of care rationalities and to look behind these claims for the (presumably more "real") control aims that the governance powers seek to hide.

American parenting is often a setting for governance activities in which these dual (and, sometimes, dueling) rationalities of care and control are explicit and recognized. The task of raising a child is a clear example of a "governance activity." For while a parent may be doing many things as he or she raises a child, the parent is most certainly involved in considerable "characteristic efforts to pattern the behavior of people in prescribed directions" (Haggerty 2006, 40). Surveillance activities are very often important materialized technologies by which parents seek to direct their care and control aims for their "subjects"—i.e., on their children.

The Precious Child, Risk Tolerance, and Worry

Childhood as a life stage inhabited by highly prized and valued beings deserving of extreme care and attention is held by some scholars to be largely a construction of modern times (Ariès, 1962), though more recent scholarship on the family has called into question Ariès's contention that highly valued children are a construction unique to modernity or to western thought (Cox, 1996). There is more general agreement among family scholars with the more focused contention that, in the United States, this construction process intensified beginning in the late nineteenth century (Zelizer, 1985). The "precious childhood" construction itself seems to depend on a complex confluence of technological (especially medical and surveillance) advances, public attitudes, and economic conditions for its development. Both historically and in contemporary times, when either these attitudes or these economic conditions do not support the "preciousness" of a child, the protective efforts toward children are reduced (Zelizer, 1985). The economic factors interact with the attitudinal ones such that cause and effect are difficult to specify. For example, one piece of this developing "precious" attitude has been the gradual exclusion of the child from the labor market, an action that "protects" the child from potential dangers and exploitation, while also reducing competition with the adult labor pool (Zelizer, 1985).

One characteristic of contemporary risk society (Beck, 1992) is the attention to societal risks guided more by the risk's emotional valence than by the risk's actual statistical probability. Adams (1995) points out several important characteristics of how risk judgments appear to function. The "calculation" involved in most real world everyday risk assessment is actually two types of calculations, the likelihood of an

“accident” or injury as a result of a certain course of behavior, along with the likelihood of a reward as a result of that course. An “adverse event,” then, can be of two types, an “accident” that occurs or a reward that is lost— risk involves the assessment of the likelihood and magnitude of *both*. (Which means that either, or both, of these “calculations” can be done relatively well or poorly, however we choose to assess this.) Another way of thinking about this process, one probably more true to the way most people experience own thinking and behavior in risky situations, is that people calculate the likelihoods both of reward and of punishment. But, depending on what aspects of a given situation you are paying attention to, “punishment” can be the negative results from too risky behavior or from behavior that deprives you of benefits because it is not risky enough. An individual can, at least in theory, be balancing an extraordinarily complex set of factors that are potentially relevant to each risky situation.

Central to Beck’s ideas about the unique character of contemporary “risk society” are two aspects of risk that Beck sees as new to human history: the high number of potentially catastrophic risks introduced into the world by modern human practices, such as the development of nuclear power or the massive expansion of industrial manufacturing, and the greatly increased control each individual has been given to understand and to direct the course of his or her life. This increase in control, usually understood in terms of an increase in individual *freedom* from the restraints of custom, habit, religion, family, history, etc., also means that the individual must take on the individual *responsibility* to assess the values and riskiness of each human endeavor, both his or her own and those of others, without recourse to the readily available conclusions of those institutions from whose grasp he or she has been freed (Beck, 1992). Thus,

social changes in the direction of greater behavioral and psychological freedoms also mean the increased possibility of making mistaken or foolish choices, and as we become increasingly aware of our freedom to make mistakes, anxiety about the ills that might befall us (both those under our control and those over which we have little or no say) become more pronounced.

Parents must contend with the risks that arise from dangers from outside the family, as well as those that result from their own mistakes, misjudgments, and foolish choices, along with similar inattentions and mistakes of their “priceless children.” Researchers in the area of risk perception have identified consistent biases in how subjects perceive risky situations and arrive at judgments of risk. Tversky and Kahneman (1974) have observed that subjects significantly overestimate the likelihood of dangerous outcomes when the risks are highly imaginable. In a similar vein, these same authors note people also tend to overestimate the likelihood of events that are readily available in memory. This means that a social system that repeatedly publicizes and emphasizes the riskiness of situations (such as childrearing, for example) will produce members who overestimate the likelihood of a negative event occurring. This means that technology industries (such as those selling surveillance) can promote demand for their products by promoting the view that the world is a dangerous place. Advertising in this area typically portrays distressing situations of low probability (e.g., your vehicle has plummeted off a snow-covered mountain road) while emphasizing the usefulness of the technology as an aid to the consumer in such a situation. In addition, the presence in the user’s daily life of a particular technology as a material object may remind its user not so much of the comfort the technology promises but of the danger from which the technology claims to

offer protection. The *failure* of the feared outcome to actually occur in a given person's life is only partially effective in convincing the typical person that the event is less likely to occur in the future. This is because when people believe an event is a chance occurrence, they tend to believe that chance "evens the score" and that the failure of a feared event to occur means that it is more likely to occur the next time (Tversky and Kahneman, 1974). So if, by advertising, for example, corporations can convince the consumer to overestimate the probability of a dangerous event occurring, the event's *not* occurring in real life can make consumers *more* convinced that it is likely to occur in the future.

Traditional Sites for the Study of Surveillance

In his recent "overview" of the field of surveillance studies (pun intended on his part), David Lyon (2007) notes a tendency of some surveillance scholars [including, in the past, himself (Lyon 2001)] to refer to the contemporary condition as a "surveillance society," implying a ubiquitous and inescapable web of surveillance. He finds the term "surveillance society" useful in that it draws the reader's attention to the broad range of overt and covert surveillance practices, but also "potentially misleading" in that it also seems to imply an "homogeneous situation of 'being under surveillance'" that does not accurately capture the variability of surveillance practices across different situations in the current environment (Lyon 2007, 25). Before Foucault's panopticon captured scholarly imagination, George Orwell's *1984* (1949) provided "Big Brother" as the image-reference of choice for early surveillance scholars, such as James Rule (1973). There is an ongoing tension within society between forces that wish to minimize the attention paid to surveillance practices and those who warn of its oppressive application

as an efficient and universal tool of management, control, and oppression. Similarly, each surveillance scholar must struggle to balance an accurate portrayal of how surveillance actually functions with the dangers the scholar sees in the expansion of surveillance potentials that are likely to come with future technological advances. Inevitably, some (e.g., Renninger and Shumar 2002; Rheingold 2000) are more optimistic about this future than others (e.g., Ball and Webster 2003; Whitaker 1999).

Lyon underlines two competing aspects of surveillance practices that makes these practices challenging to characterize accurately: different “sites” of surveillance often have significantly different histories, rationales, and technologies (that make attention to their individual circumstances worthy of close attention), but, at the same time, contemporary surveillance has a strong overall tendency, abetted by technological developments, toward convergence and integration of surveillance systems. Lyon believes that there is a discernable “pull” in the development of surveillance practices toward the sort of integration and ubiquity that would make the term “surveillance society” an accurate description rather than a colorful metaphor. Technical limitations and target resistance are the two main counterweights to this tendency toward integration (Lyon 2007).

Surveillance scholars speak in terms of different “sites” of surveillance. While the use of “sites” seems to imply physical location as a principal differentiating characteristic, in reality the physical location in which the surveillance occurs is a rather contingent aspect of the surveillance process. “Sites” in surveillance scholarship usually refer to particular governance structures, distinguishable sets of practices for management, control, organization, prediction, or protection—the same physical location

can be watched in many different ways and for many different reasons. Humans, or data generated by humans, are the targets of interest in the sites most commonly investigated by surveillance scholars, but many surveillance practices focus on non-human targets as well (weather, animal migration, etc.). Lyon (2007) identifies five major sites of surveillance: the military, the state, the workplace, the police, and the marketplace. These sites are distinguishable by unique histories, practices, and target responses, but Lyon also argues that there is significant overlap and mutual borrowing of surveillance technologies and strategies across sites. These sites of attention have been fairly stable throughout the history of contemporary surveillance studies—Rule's (1973) investigation of surveillance practices, some thirty-four years before Lyon's, focused on state bureaucracies, the police, and corporate surveillance of consumers. In addition to the transfer of specific technologies across surveillance sites, surveillance practices share a set of discernable characteristics across different sites: a tendency toward *rationalization*, or the application of standardized procedures guided by reason as the principle approach to solving life's challenges, a tendency of these rationalized procedures to employ *technology*, human-created devices to increase the speed, reach, and efficiency of watching, a tendency of this rationalization to *sort* or classify the people who are the surveillance targets in order to attain target management goals (Lyon, 2007). Lyon notes that different surveillance sites enact these rationalization, technology, and sorting characteristics differently, so his categories become a model of analysis for particular surveillance practices, a guide to what to look for within specific sites. Lyon also describes a fourth variable of surveillance practices, "knowledgeability," which combines, somewhat confusingly to my mind, the overtness of the surveillance (how

obvious surveillance is to its targets) with the targets' responses (for example, cooperation or resistance). Lyon describes a fifth characteristic of surveillance, "urgency," which is not so much a current variable as a contention that surveillance practices as a whole are being employed faster and in more environments, with less attention to counterbalancing concerns of privacy or freedom, since the 9/11 terrorist attacks in the United States.

Lyon is arguably the leading scholar in the field of surveillance studies today, so his recommendation to attend to the characteristics of rationalization, technology deployment, sorting, overtness, and target responses are deserving of attention. They do seem to mix different levels of abstraction in a way that might produce confusion in some instances—sorting, for example, seems to be an example of one kind of rationalization procedure, rather than an entirely different category. Lyon's categories fit within the Foucault/Haggerty "agents—rationales—technologies—subjects" governance model offered here as a useful analytic approach to the study of surveillance. Most of Lyon's observations are examples of "technologies" in the governance model, as this category includes both the material tools of the surveillance and the strategies by which these tools are deployed. Lyon's "knowledgeability" seems to highlight important characteristics of the "subjects" category of the governance model, the extent to which the targets of surveillance are aware of their surveillance, combined with the targets' reactions to these surveillance processes. Lyon's model and the governance model are complementary rather than contradictory, though, for me, the governance model is more intuitive and easier to apply across different types of surveillance. It is important to note that Lyon did not claim the characteristics of surveillance sites he described formed an all inclusive

model—he was offering his observations of trends in surveillance, especially as it is being practiced in contemporary societies.

The governance model emphasizes the process links between its variable categories—if we are focusing on a particular surveillance practice in a particular setting, such as the use of the baby monitor in the family home, the governance model reminds us to look not only at the strategies by which the monitor is used, but also effects on the baby (targets), effects on the parents (agents), and the reasons the surveillants have for engaging in this surveillance behavior (rationales). Each of these factors is systemically linked, so that changes in one variable can produce feedback that leads to changes elsewhere. The entire surveillance process is also embedded within a cultural milieu that affects all aspects of the process. Changes in American perceptions of risk after the 9/11 terrorist attacks, for example, made certain federal government rationales for surveillance more acceptable, directly changing government surveillance practices. In a similar way, changes in parental perceptions about the riskiness of the Internet has coincided with the uptake of new technologies for keeping track of children's computer use.

Parenting Surveillance

The family shares rationalities with each of the five more "traditional" surveillance sites identified by Lyon (2007)—the military, the state, the workplace, the police, and the marketplace. Lyon notes that military and state bureaucracies collect and analyze data on their populations in order to facilitate training, measure the effectiveness of interventions, and monitor health and welfare. Parents have many of these same aims for their children. Military, state, and police surveillance can also serve explicit risk reduction goals, providing information about others (enemies or potential enemies,

dangerous weather, financial, health, or sociological trends, criminals, etc.), so that the forces of the surveillants can be directed toward minimizing or eliminating the risks. Many of the surveillance services directed at parents similarly emphasizes the riskiness of the world and the utility of surveillance for the parents' protective role.

Workplace surveillance processes are an integral part of employers' efforts to ensure that workers "performed the tasks expected of them" (Lyon 2007, 35). The monitoring, efficiency, and profit maximization goals of the capitalist might seem far removed from the "care and control" aims that I have ascribed to parents. However, families employ surveillance technologies to promote efficiency and productivity in parenting, even if the parental attraction to multi-tasking that surveillance often serves does not have the single-minded goal of profit that ultimately underpins workplace monitoring. As will be especially evident in our detailed studied of the self-surveillance taught by *What to Expect* and the medial surveillance of fetal ultrasound in the coming chapters, much of family surveillance is decidedly multi-targeted. It is often unclear who is really the watcher, or who is the one being most disciplined by many parenting surveillance practices. Even restricting our attention to the social classes that most evidence the "priceless child" ideals, i.e., those that do not seek financial "profit" directly from their children's labors, many contemporary American parents seek out surveillance technologies in order to fulfill their care and control goals in the most *efficient* manner possible. The first published mention of something we might recognize as a baby monitor, a 1919 article in *Popular Mechanics,* emphasized the monitor's benefits for maternal productivity: "mother may go about her housework, while baby will sleep soundly, undisturbed by the noise of the living rooms" (*Dictaphone calls mother* 1919,

695). When it comes to parenting, the "profit" to be maximized might be more than financial—think about emotional connectedness, security, protectiveness, distraction, or any of the many other pleasures that a parent might seek or find in parenting. More efficient parenting might allow the increase of any of these. Surveillance technologies offer promises of more efficient parenting—some of "care and control" is like supervision and management in any setting, with similar rationales whether the target is the three month old in the crib whom you *want* to sleep or the thirty year old on the factory floor whom you want *not* to sleep.

Lyon's brief overview of marketplace surveillance characteristics emphasizes the data-capturing capacities of surveillance practices. This "dataveillance" (Davis 1973, cited in Genosko and Thompson 2006) and the creation of "data-images" (Lyon 1994) or "data doubles" (Ball et al 2006, Los 2006) to facilitate prediction and control of individuals and groups in all phases of the capitalistic process might also seem far removed from the aims of parenting. However, in the contemporary United States, the data doubles of children are firmly established. Surveillance processes are embedded and routinized to the point that the child begins generating his or her data double before birth; parents are even encouraged to engage with these doubles by a number of automatic mechanisms. Interactions with the school system bring a flood of data to the attention of parents: individual academic achievement is tested, while performance data is generated at the individual, classroom, school, and school district levels. What is the "responsible" approach to this data: ignore it, choose a teacher based on it, choose a school? I automatically receive a monthly emailed report of my 9th grade daughter's current grade in each of her classes, and I am notified when her school meal account balance falls

below ten dollars. With a few clicks of my computer mouse, I can review of list of her every food purchase for the current school year. Perhaps HoHo consumption and mathematics achievement could be correlated, but should that most properly require population data? Similar processes alert me to the need for additional funds in her cell phone account, where I can also view all of the calls she has sent and received.

The boundaries between the “care” and the “control” duties of parenthood have probably always been fuzzy, and, by the teen years especially, whether a particular parenting activity is labeled as care or control greatly depends on a number of context factors (such as who is doing the labeling). This is certainly the case with parental surveillance activities. As the child develops from complete dependence on the parent for safety and support to something approaching independence, the parent is faced with an evolving matrix of rationales and technologies of surveillance. Within each family circumstance, the risks to the child change as the child develops, while the child’s changing awareness of and responses to parental surveillance behaviors often contribute to a contentious site of competing definitions for what surveillance implies. Add to these developmental changes the “extra-familial” societal-context changes, such as changes in risk tolerance, changes in available risky situations, and marketplace changes in available surveillance technologies, and we begin to see just how complex a full accounting of surveillance processes in the real world can become. Even the identification of surveillant agent is not as straightforward as it might appear, as “parenting”-type care and control aims are often shared between parents and governmental authorities, or taken over by governmental authorities altogether. If a judge orders GPS tracking of a truant teen as an alternative to incarceration (Kovach 2008), is this more “care” or “control”? Is

the parent a surveillant if he or she allows this practice, even if others have access to the child's location blips on the digital map?

The *potential* complexity of any surveillance process should not, however, deter us from the energetic search for surveillance's *most determinative* characteristics. It is a frequent rhetorical tactic of those who wish to obscure the workings of power to point out a few possibly influential factors that have not been considered by critics. So, while I do want to argue that any surveillance process is a complex one to which multiple perspectives can contribute to fuller understanding, I want to fight against the tendency to conclude from this complexity that all surveillance is benign or that the aims of surveillants do not have much influence on surveillance's ultimate effects.

Looking at the family, and the task of parenting in particular, as a site for the investigation of surveillance provides organizational limits and a focus to the practices and technologies of concern. The family is a particular materialized form of governance—inquiry into the rationales, technologies, and targets of parenthood surveillance practices will provide direct insight into how surveillance fits into this form of governance. While almost all surveillance processes admit of complex interpretations, in parenting surveillance we can identify the actors and look at the interactions among the component parts of the process with much more accuracy than in other, broader surveillance sites. Understanding family surveillance better may provide highly suggestive clues of how surveillance works in some of these other, broader areas, where humans seek to control, direct, inspire, and discipline each other, but where the agents, rationales, technologies, and targets are more difficult to identify.

Conclusions

Surveillance is the purposeful, systematic collection of detailed information for the purposes of control, management, influence, and/or protection. New strategies and technologies of surveillance emerged in United States in the 1980s that signaled a different, technologized parenting. This study will look in detail at three of the technologies: fetal ultrasound, the pregnancy advice book *What to Expect When You're Expecting*, and baby monitors.

Multiple theorists highlight the functions of surveillance to produce and to distribute power. While most work on surveillance analyzes these effects at larger institutional levels, such as the economy, the workplace, or the prison, this current study will apply these ideas to the more intimate setting of the parent-child relationship. Questions about what sorts of power are being sought and what sorts of power are being produced by surveillance may mean something different once we begin to explore surveillance as a parenting activity. Governmentality theory suggests that we look at parental surveillance in terms of its rationalities (the aims and goals of the watchers), its technologies (the strategies and tools used to work toward these goals), and its subjects. In this framework, the subjects of surveillance are its targets. I have hinted that defining this target may not be as straightforward as it would first appear in many of the examples of surveillance we will examine in this study.

Though prior surveillance scholarship has tended to neglect the family as an important site of surveillance, the insights of this scholarship about the surveillance process can serve as a meaningful starting point from which to look more closely at surveillance by parents. For example, several scholars suggest that the classifying and sorting that results from surveillance data gathering in an important element in the power

of surveillance. Will this also prove to be true of surveillance within the intimacy of parenthood?

Surveillance is acknowledged to serve care and control aims, though surveillance scholarship tends to focus more on these control aims. Most surveillance theory seems to point to the power and control gains of the watcher as the expressed or implied motive for surveillance. While these two aims can certainly be applied to the parenting enterprise, these explanations may seem a bit too narrow once we begin to look at the broad range of parenting activities in which surveillance plays an important part. Parenting is a clear instances in which care and control are both important and oftentimes manifest within the same observable behaviors. Looking at some important parenting practices as surveillance will bring new insights into how parenting works in contemporary America, while looking at surveillance as it occurs in parenting will usefully broaden our understandings about how surveillance works and how it can affect not only its targets, but those doing the watching as well.

CHAPTER TWO

STUDYING PARENTS WATCHING: EMPIRICAL INVESTIGATIONS OF PARENTING ANXIETIES & SURVEILLANCE ACTIVITIES

> It is irrelevant whether we live in a world which is in fact or in some sense 'objectively' safer than all other worlds; if destruction and disasters are anticipated, then that produces a compulsion to act.
>
> Beck, "Living in the world risk society"

Most Americans will be parents at some point in life (Child Trends 2002), and all of us began as children, so we all get touched to a greater or lesser degree by how parenting is done. Changes in parenting do not just affect the parents and children who are their immediate participants—they ultimately come to affect all of us. Families raising children are a focus of important social resources—the legal and commercial systems, to cite two major examples, devote significant efforts toward establishing, maintaining, supporting and, in many instances, exploiting childrearing and parenting as a special category of human endeavor. A lot of time, effort, and expense is devoted to parenting and childrearing, not just by the parents directly involved, but by the broader society that has deemed it a worthwhile social practice. Changes in parenting practices lead to changes in resource allocations, so we all can benefit when these changes are more thoughtfully considered.

Many authors and commentators (e.g., Stearns, 2003; Ungar, 2009) have raised concerns that the more anxious, more risk-averse parents of the United States in the last quarter of the twentieth century raise more anxious, risk-averse children. These authors leave the implication that these children will then grow into a generation of more anxious, more risk averse adults, threatening to take the broader society in a direction in which

safety becomes the dominant value at the expense of other important values, such as innovation, discovery, and adventure. In addition to these worrisome potential broad social effects, recent findings within the child development literature connect how parents deal with the risks faced by children to some of the most basic aspects of the child's psychological functioning. Some of these developing capacities, such as the child's "executive functions" like self-control and the ability to delay gratification, are clearly associated with the individual's later functioning in many important areas. Researchers are increasingly believing that children's executive functions have both a "hard-wired" neurological basis (Aarnoudse-Moens et al. 2009) and, importantly for parents, an experiential, teachable basis (Tough 2009). How parents managed the child's exposure to everyday risks—their allowing the child to experience and to problem-solve around some risks—is an important influence on this teachable part (Ungar 2009).

Research results relevant to broad questions about the watching of children by parents exist across a wide range of disciplines. Much of the research literature explicitly about surveillance, such as studies of workplace monitoring, corporate surveillance of customers, and security-type surveillance practices, focuses on the effects of surveillance on the targets of the surveillance. While these results are very likely to be relevant to surveillance within the family, these results are likely to be more relevant to the family dynamics of families with older children, when the children's resistance behaviors become important family issues. For this review, I will concentrate on studies most relevant to the parent's role as surveillant, with some additional attention to studies looking at child effects specific to parent watching. A few researchers have explicitly framed their questions in terms of parenting surveillance or other parent watching

behaviors. Researchers from a wide variety of disciplines have, for example, questioned and investigated the effects of viewing fetal ultrasound images, have searched for connections between parent monitoring practices and subsequent child pathologies such as anti-social behavior and substance abuse, and have explored how overprotective parenting might interfere with the child's planning and self-control abilities.

This chapter reviews the published literature on questions relevant to parenting surveillance, especially questions concerning the effects of surveillance on the watchers and the watched. Empirical studies of child monitoring, by which I mean any studies published in peer-reviewed journals that make any use of investigative findings beyond the author's own opinions, fall generally into two broad approaches, "objectivist" and "constructionist." This is a rough division, with some overlap, and I offer it here to help organize a large body of somewhat disparate work for the reader rather than to make a larger theoretical point. Each approach has its own strengths and weaknesses, though I believe each also adds significantly to an understanding of how surveillant watching alters parenting processes and outcomes.

"Objectivist" research approaches, as I am conceiving them here, typically begin with some definition of specific processes under investigation ("anxiety," "monitoring," etc.) and treat these processes as having an objective reality that allows them to be studied meaningfully across geographic locations and time periods. Objectivist family research spans several different academic disciplines, especially medicine, psychology, and sociology. Objectivist research tends to describe its subjects in significant detail, though research conclusions are most often extended beyond the range of the immediate subject group, either explicitly or by strong implication. This research is usually

investigating individual processes that the researcher hopes to establish as existing across individuals. Objectivist research also strives to establish cause-effect relationships, though conclusions about such relationships must often be couched in terms of correlations between events.

Constructionist approaches to the study of parenting surveillance view concepts such as risk, danger, "responsible parenthood," and even childhood itself primarily as social constructions rather than as empirical absolutes with some objective existence outside the social contexts in which they are employed. Constructivist researchers do not deny that these patterns of construction frequently re-appear in many different social contexts, but their foci are looking at how these concepts come to be constructed by various social groups, what gets included and excluded within these concepts by social groups, and the functions these concepts play in shaping attitudes, thoughts, and behaviors. Constructionist and objectivist approaches have some common ground, though their targets of interest are often different portions of similar processes. Both, for example, could be interested in the processes of parental risk perception. But while objectivist researchers might examine conditions that lead parents to experience anxiety, how variations in the conditions vary the anxiety experience, and how variations in parenting anxiety lead to variations in parenting behaviors (and what sorts of child behaviors seem to results from these parenting variations), a constructionist researcher might be more interested in how parents formed their notions of the responsibilities of parenthood, or what facets of the person's social system contributed to the parent's developing risk ideas.

This study strives to occupy an area that bridges the objectivist and constructionist perspectives. I want to acknowledge the socially-constructed nature of many of the variables we are investigating and to maintain a focus on the larger social forces that contribute to these constructions. At the same time, I want to explore the conclusions that thoughtful researchers have been able to draw about the effects of parents' surveillance practices. I believe these objectivist findings may contribute to a better understanding of both parenting and surveillance, even if we must acknowledge the limitations of these findings and the possibility that these effects may vary to an unknown degree with other parents and other social groups beyond those most typically targeted by objectivist researchers.

Objectivist Research on Parental Watching: Motives, Processes, Effects

Objectivist research relevant to the questions posed in this study can be found across a number of different specialty areas. Medical researchers have looked fairly extensively at the "effects" of fetal ultrasound examinations on several aspects of the mother's functioning, including emotional well-being, attachment to the fetus, and health behaviors with fetal effects, like drinking alcohol or smoking. Fathers are very occasionally included in some of these studies. Medical researchers have also studied how parents cope with illness or other physical disorders in newborns or infants that require parents to use in-home monitoring devices. Even before the more general commercial availability of baby monitors expanded in the mid-1980s, for example, hospitals sometimes sent babies thought to be at greater risk for Sudden Infant Death Syndrome (SIDS) home with highly specialized (and extremely expensive) breathing monitors, devices which shared some functional and technological characteristics with

current commercial baby monitors. Researchers have studied in detail how parents use these high-technology monitors and the effects these monitors have on many different areas of family functioning, from infant survival to the parents' emotional well being. Because these devises parallel the uses of more common baby monitors in so many ways, we will look at this research in detail.

Outside the medical specialty, family researchers have done explicit investigations of parent surveillance under the concept of "child monitoring." Much of this work equates child monitoring with knowledge of the child's whereabouts. Studies of this sort deal exclusively with children well outside the range considered in this current study, but their result bear some attention given their close intersection with many of the concerns of this study, especially parental worries about children, how parents respond to these worries, and how these parental responses ultimately affect the children who are targets of surveillance. These empirical studies often seek to develop parental monitoring as a unitary quantitative variable so that its volume can be correlated with child behaviors or child problems of interest, such as substance abuse, aggression, or school performance. Noteworthy in light of this current study's emphasis on the processes of surveillance and the effects of these various processes on those practicing them, empirical research in the area of "child monitoring" has been criticized for failing to distinguish among the many different sources by which parents might gain their information on children. Such criticisms attack the notion that "child monitoring" can really be a uni-dimensional variable and are encouraging the field to see parenting surveillance as a richly varied set of processes, a perspective more in keeping with the view of parenting surveillance offered in this study. One such pair of critics (Stattin and Kerr 2000), for example, noted

that the most common route by which parents in most “child monitoring” studies gained their information was from their children’s self-reports. While children’s self-reports do constitute one stream of information for parents, it is one source of surveillance information among many, and not necessarily applicable to family constellations with pre-verbal subjects. Scholars of surveillance in other domains—workplace, commercial, or governmental surveillance, for example—would never consider targets’ self-reports to supervisors to be a full accounting of their area’s watching practices, so it is good that family scholars are moving beyond this narrow view of how watching gets done.

Motives for Surveillance: Research on the Anxieties of New Parenthood

Especially for new parents, pregnancy and the arrival of a child signals an abrupt transition of roles, behaviors, responsibilities, and feelings. While early researchers looking into the changes brought about by parenthood described parenthood as a “crisis,” (LeMasters 1957), the field has generally moved away from such characterizations because of the event’s normative character (Miller and Sollie 1980). Miller and Sollie (1980) studied a group of American middle-class parents through their pregancies and up to the infant’s eighth month. They found that the arrival of a first baby increased the personal and marital stress experienced by most new parents and that the parents’ sense of personal well-being declined during the baby’s first few months of life. Overall, however, the level of these new stresses was not usually severe and the parents were able to generate a variety of coping behaviors to help them to meet their new role demands. Parents described being able to turn to each other and to people outside the family for advice and assistance. Several parents noted that the arrival of a new child led them to conclude that many of the dilemmas associated with parenthood, such how to balance the

parent's personal relationship with the child, time demands of parenthood, and career demands or aspirations, simply did not have "easy answers" (Miller and Sollie 1980, 463). The authors noted that their sample of couples, while relatively large (n=120), was not random and that only a small number of women in their sample were "strongly career-oriented" (Miller and Sollie 1980, 463). These restrictions limit the generalizability of these results.

The problem of accurate generalizing of family research findings is underscored by investigations of "resilient families" (those which adapt to life stressors successfully) conducted by McCubbin and McCubbin (1988). The McCubbin's research suggested that families who adapted well to major family transitions shared significant characteristics, but also that socio-economic and ethnic backgrounds influenced some of the characteristic important to family resiliency. While the caveats that financial resources, social class, and ethnic identification may influence how a family responds to important events such as new parenthood may seem obvious, it is important that they be remembered when trying to interpret the applicability of research findings beyond the subjects of immediate study. Even these caveats are themselves suggestive rather than definitive—the focus of the McCubbins and McCubbins (1988) study was itself fairly specialized, trying to identify factors associated with positive adaptation to overseas deployment in military families. The differences they observed may or may not be relevant to the anxieties and behaviors of new parenthood.

Nystrom and Ohrling (2004) identified 33 published articles focusing on characterizing the experience of parenting during the child's first year. This review suggested that even parents who cope well with this transition and who find it a

rewarding experience also find it exhausting and overwhelming at times (Nystrom and Ohrling 2004). Nystrom and Ohrling noted significant difference in the strains experienced by mothers and fathers—in contrast to the Miller and Sollie (1980) findings, mothers were noted to be significantly more conflicted about the effects of childcare on their careers than were fathers, consistent with the authors observations that women also continued to spend significantly more time in childcare activities than did fathers. Across many different studies, however, both mothers and fathers identified a particular feeling of import to our current study as a significant source of stress in the new parent role: new feelings of responsibility for the safety and protection of the child (Nystrom and Ohrling 2004).

While developmental psychologists are increasingly recognizing that children differ significantly in their sensitivity and responses to fear and that these temperamental differences can play a significant role in understand how children develop and respond to their environments (e.g., Kochanska, Aksan, and Joy 2007), research on how parents perceive and respond to the new role demands of parenthood does not appear to have clearly identified or investigated the possibility of similar temperamental differences in adults. Differences in, for example, “trait anxiety,” when they are identified at all in parents, are typically not treated as variables of interest, since researchers tend to focus on parents’ responses to the immediate challenges being presented to parents at particular stages of parenting development (for example, whether parents are feeling generally more anxious when the child is a new born compared to when the child is an eight month old.) Such temperamental differences in sensitivities to the anxieties of parenthood may turn out to be an important factor in understanding parents’ definitions of and responses to

early childhood risks (including their adoption of and responses to surveillance tactics and the information surveillance provides).

Parental Monitoring and its "Outcomes"

Researchers have looked in detail at parenting patterns associated with anti-social behaviors in children and how parents' monitor their children has been a special target of investigators' attentions. Most of the work that seeks to identify a specific effect of parental monitoring in particular, however, focuses on adolescent children. Studies of parenting patterns associated with younger children's anti-social behaviors tend to mention parental monitoring or surveillance-type activities only by implication. Parents whose children do not show these problematic behaviors show a consistent pattern of interaction with their child's activities ("monitor, discipline, problem solve, and reinforce"), while parents of children with anti-social behaviors consistently neglect one or more of these components (Patterson 1984, 1299). Hayes (2003) has noted that the field has had some difficulty consistently defining "parental monitoring" since it has become a focus of research interest. This difficulty seems to reflect disagreements among different researchers around how much of the "watching" component, that is, the information gathering process, should be included and how much of the "action plan" component, or what the parent does with the information, should also count as part of the "parental monitoring" variable. Definitions of "parental monitoring" has gradually evolved from a combination of the parent's rules and expectations about how much information they will receive from the adolescent about his or her activities along with actual time the parent and adolescent spent together (Capaldi and Patterson 1989), through the parent's level of knowledge of the adolescent's activities combined with

parental communication to the child that the parent knows about the activities and is concerned about the child (Dishion and McMahon 1998), to more recent research that defines the variable rather more narrowly as the amount of the adolescent's activities of which the parent is accurately aware (Stattin and Kerr 2000; see Hayes (2003) for an extended discussion of this definitional evolution). All of these various definitions of parental monitoring have resulted in similar research findings: deficiencies in parental monitoring consistently show a strong relationship to the adolescent child's anti-social behavior (Laird et al. 2008). As previously noted, research on the effects of parental monitoring tends to define the variable in terms of the amount of knowledge (of the child) that the parent possesses, not in terms of how this information was obtained. Stattin and Kerr (2000), noting that most of the research in this area shows that parents use self-reports from the adolescent as the principle or even the sole source of monitoring information, have even proposed that research on "parental monitoring" is actually studying the openness and honesty of communication between adolescent and parent. As Laird and his colleagues (2008) point out, the specific mechanisms by which parental monitoring helps to reduce anti-social behaviors in the child are still largely unknown.

There is very little published empirical research results about the continuity of parenting behaviors across time, and this is reflected in the small amount of information available about the stability of parents' watching behavior toward their children as members of the family get older (Petit et al. 2007). Again, the existing empirical research tends to focus on children significantly older than those who are the focus of the current project. Much of these results confirm rather "common sense" expectations about how parental monitoring changes throughout the older child's development. Parents believe

that is it expected and proper to spend less time directly watching their children as the children get older and to allow children gradually greater freedom of movement outside of direct supervision. Parents then do tend to spend less time watching their children and to know fewer exact details about the children's activities as the children get older (Laird et al. 2003). The parental behaviors encapsulated in these generalizations are moderated by both the child's temperament and by the parents' parenting style. Researchers describe a "resistance to control" variable in child temperament and a "proactive" parenting style (Pettit et al. 2007). Pettit and his colleagues describe resistant to control children as more overtly oppositional to their parents' supervision efforts and note that these children tend to receive less parental supervision. "Proactive" parents tend to actively teach their children conflict resolution skills and to have rules in place regarding their behavioral expectations of the child (rather than only setting limits after some sort of child problem has developed). These "proactive" parents also tend to have greater knowledge of their children's whereabouts and activities (Petit et al. 2007) (though it is unclear whether this higher level of knowledge results from the parents' own surveillance efforts or from higher levels of voluntary information disclosure from their children).

At this point, there is little in the literature to indicate whether or not high or low levels of parent attention, "anxious" parenting, or "overprotective" parenting that may be in evidence during the child's infancy signal the beginning of a pattern of heighten or more anxious watching that persists as the child develops, so it is difficult to make the backward link from parental monitoring effects on the adolescent to presumptions about possible effects of early childhood monitoring. As the offspring develops from fetus to infant to toddler, child, and adolescent, what the parent must look out for and the ways of

watching change radically. As many researchers in the area of "parental monitoring" have observed, parents' monitoring of their children is an interactive process, and parents have to contend with a variety of different responses from the "targets" of parents' watching, including the potential for increasingly sophisticated resistance behaviors as the child gets older (Laird et al. 2003, Pettit et al. 2007). Perhaps more importantly, the meaning of parental monitoring, especially to the child, changes as the child gets older and the parent-child relationship changes. Parental protective (or control) wishes (as evidenced in the parents' "action plans," or what they considering doing with the information obtained from parental monitoring) that may seem irrelevant, or even comforting, to the younger child can increasingly become challenges to autonomy and independence for the adolescent.

The current state of the field does not allow for clear conclusions about the effects, or lack thereof, of parental surveillance efforts on very young children, though some findings are very suggestive. Psychological researchers in the field of "executive functions" have hypothesized a significant link between the development of such skills (such as the ability to regulate one's emotions, the ability to delay gratification, the ability to assess contingencies, the ability to plan one's future actions, and the ability to focus one's efforts to effect one's plans) and a wide variety of positive behavioral outcomes, such as good school achievement, resilience in the face of life stressors, and the avoidance of psychopathology (Aarnoudse-Moens et al. 2009). While researchers in this area generally conceive of executive functions as "a set of neurocognitive processes" (Aarnoudse-Moens et al. 2009, 981), many researchers have also hypothesized a link between environmental factors, including parenting behaviors, and the child's

development of these skills (Kopp 1982; Zeman et al. 2006). Kochanska and her colleagues have pushed the search for the roots of executive function skills back to the earliest stages of infancy, discovering that some apparent genetic vulnerability to weaknesses in executive functioning may be moderated by the quality of the mother-infant attachment (Kochanska, Philibert and Barry 2009). All researchers in this area note that executive functions are multi-faceted processes, and some of the parenting behaviors thought to be contributory to the child's development of executive function skills have, by implication, a significant component of parental surveillance. For example, important social domain experiences linked to this development include being exposed to focused limit setting and soothing efforts of others (Zeman et al. 2006), activities that would seem to be clearly tied to an adult's accurate surveillance of the child. Kochanska, Philibert and Barry (2009) note that several researchers have linked security of the mother-infant attachment to better executive function skills. Investigating how parental surveillance in early childhood might function differently in, or even contribute to, mother-infant attachments of higher or lower security would seem to be a fruitful direction for future research.

From a different perspective, Ungar (2009) has suggested that parental over-protectiveness, including excessive parental monitoring, contributes to child and adolescent psychopathology under certain conditions. These conditions include the family living in a "low risk" environment and the parents' failure to modify their own surveillance and control behaviors to the developmental abilities of the child.
Ungar contends that "overprotective parenting" is "(1) unnecessary; (2) denies children the opportunity structures to experience healthy psychosocial development; (3)

contributes to patterns of delinquency or excessive anxiety among children from stable, well resourced homes; and (4) leaves children unprepared for transitions to adulthood and independent living" (Ungar 2009, 259). Increased surveillance of children is a key feature of the sort of parenting Ungar describes. Ungar believes that overprotective parenting represents an imbalance between the parents' responsibility to protect children and parents' responsibility to provide appropriate risks and responsibilities necessary for other aspects of the child's healthy development. As with the parental monitoring literature, Ungar's observations (based on his observations as a practicing child and family therapist) are focused on parenting behaviors toward adolescent children. The "risks and responsibilities" developmentally appropriate for the parent to "provide" for an infant or very young child, and whether the parents' failure to provide these by being "overprotective" (or excessively watchful) results in some sort of lasting developmental harm to the child, are issues not clearly addressed in the published research literature at present. Research suggests that any relationship to be discovered between early parental surveillance and later child "outcomes" is likely to be complex and to involve interacting factors of parent and child temperament. Even more researched variables of parenting such as hostility or maternal depression appear to be linked to child outcomes in complex rather than simple ways—insecurely attached children do not show as much anti-social behavior later in childhood as securely attached children do when raised by a depressed mother, for example (Vando et al. 2008).

Depression and anxiety are probably the two pathologies most commonly investigated for their links to the parenting suffers received (Rapee 1999). Rapee's (1999) major review of this literature did not identify surveillance or monitoring practices

specifically as a parenting variable linked by researchers to the offsprings' later development of either of these disorders. Rapee also rightly raised concerns about how to interpret this literature as a whole, given its "lack of consistency in methods, measures, and theory" (Rapee 1999, 48). Across the diverse methods and measures used, however, Rapee did observe significant consistency in the identification of two broad parenting factors, at least one of which has significant connections to surveillance. Given a variety of different labels by different investigators, Rapee characterizes these two factors as representing (1) the parent's acceptance or rejection of the child and (2) the parents emphasis on control or autonomy of the child. Rapee felt research suggested a modest but significant link between parental control and the offspring's later development of anxiety problems. Since "control" is often an explicit motive for surveillance activities, and surveillance may be an important component in parents' efforts to exert control over children, this may provide a link between some parental surveillance activities and the development of pathology in their offspring. Obviously, this link is tenuous and requires much more explicit investigation before conclusions can be drawn. Other investigators in this field, for example, have taken pains to differentiate the effects of parental control by psychological or emotional manipulation from parental control accomplished by straightforward communication and clear behavioral limit setting (e.g., Barber 1996). "Parental control," as it has been studied in the research literature, is a multi-dimensional concept in which parent watching behaviors play only a part. However, as Lyons (2007), Foucault (1977), Haggerty (2006), and many others have pointed out, surveillance itself is also a multi-dimensional activity that can be employed with varying degrees of openness or secrecy, and with motives ranging from protection to manipulation and

control. The role of parenting surveillance in parental control has yet to be explored.

Identifying the contribution of any single factor, or even a group of related behaviors such as parental surveillance, to human development is extremely tricky. As Bronfenbrenner (1986) has noted, it is probably most accurate to see child "outcomes," the person the child becomes and the behaviors he or she exhibits, as "the result of an interplay between child characteristics and his or her developmental context" (Halpern 2004, 400). Parenting behaviors are just one part, albeit an important part, of this developmental context. By highlighting the tread of parental surveillance and questioning its effects on the components and the system of the developing infant-parent dyad, we are looking at one facet of a complex system—but a facet over which parents might exercise significant conscious control.

Home Monitoring of the "Vulnerable Child"

There are no published empirical studies of either the effects of routine use of ordinary baby monitors on the anxieties of parents or of the effectiveness of routine use of ordinary baby monitors in the principle function described by manufactures, that is, alerting parents to potentially dangerous situations involving the child. The single published peer-reviewed article on baby monitors investigates parental opinions of the monitors as described by contributors to a popular consumer website (Nelson 2008). However, a similar situation to home baby monitor use has been investigated extensively, the use of much more sophisticated, doctor-prescribed, in-home cardio-pulmonary monitors by parents of children identified as at risk for Sudden Infant Death Syndrome.

Sudden Infant Death Syndrome (SIDS), in which the infant child dies during sleep without warning or identifiable cause, has for many years been recognized in the

literature as a significant source of worry for both parents and pediatricians (Forsyth et al. 1972). The medical profession began many years ago to recognize a "vulnerable child syndrome," in which some parents became especially anxious about the potential death of their child (Green and Solnit 1964). Most parents showing signs of this vulnerable child syndrome have a child with a significant physical illness, or at least judge their child to be at risk for some particular disorder. SIDS represents an even broader, more generalized worry for more parents, since parents know only of its existence, not of its causes. (This was especially the case in the mid-1980s and only slightly less the case today.) Medical research into SIDS's causes and prevention has been ongoing since the 1960s, while popular press attention has contributed to significant sales of "over the counter" devices claiming to monitoring the infant and aid in SIDS prevention since the mid-1970s (Mindlin et al. 1975). The medical community, at least in its published statements and policies, has consistently been suspicious of the usefulness of home monitoring devices (Bergman, Beckwith and Ray 1975). Relevant professional associations have recommended against their use except when specifically recommended by the infant's pediatrician because of identifiable risk factors in the child (Bergman, Beckwith and Ray 1975, Mindlin et al. 1975, Committee on Fetus and Newborn 2003). Early writers on this subject mentioned the high likelihood that home infant monitors would raise parents' anxieties substantially without any demonstrable benefit to the child (Mindlin et al. 1975). This has prompted a significant amount of research into the effectiveness of prescribed types of home monitoring devices (but not the "over the counter" baby monitors on which this study focuses) in preventing SIDS and into the emotional effects of this home monitoring on the family.

The use of prescribed home-based infant monitors on high-risk infants presents many parallels, along with some significant differences, to the routine use of the more common "over the counter" baby monitors which are an explicit object of this study. Prescribed home monitors detect specific physiological functions of the infant, typically either breathing rate and/or heart rate, by means of sensors attached directly to the infant. Physicians, on the basis of a variety of potential risk factors, order these devices, but after brief training, just like their non-prescription counterparts, the use, monitoring, and responses to alarms sent off by the monitoring device are all the responsibilities of the parent (Black, Hersher, and Steinschnider 1978, Committee on Fetus and Newborn 2003). So, while the general situation presented to parents using these prescribed devices is similar to parents using more common baby monitors, the monitoring technologies themselves are different, and the condition of the babies involved are also different, as these have children have been specifically identified as at high risk for SIDS from a variety of factors. The way in which the prescribed monitoring device communicate to parents is different from over-the-counter baby monitors used in the 1980s—rather than the constant transmission of all ambient sounds of the non-prescribed baby monitor, prescribed monitors sound a loud alarm when pre-determined physiological parameters are not met—typically caused by lengthy pauses in breathing and/or slow heart rate. So while the routine baby monitors transmit all sounds and rely on the listener to determine what counts as a deviation deserving of parental attention, prescribed monitors send an alert only when hazardous conditions are identified. (As we shall see in the chapter on baby monitors, many contemporary baby monitor designs have begun to incorporate this "signal on detected hazard" design.) The "anxiety situation" of prescribed baby monitors

seems on the surface to present its parent users with both advantages and disadvantages compared to parents using over-the-counter devices. On the side of producing more anxieties, the children who are targets of prescribed monitor surveillance have been specifically identified as at higher risk for SIDS. On the side of producing fewer anxieties, the prescribed devices alert parents specifically to potentially hazardous situations (with an alarm), while over the counter versions require much more focused attention and judgments by parents about what sounds signal a danger. Even with the imperfections of the parallel between routine and prescribed baby monitor usage, enough similarities exist that the published findings on prescribed monitor use may have some bearing on our questions about the anxiety effects of routine baby monitor surveillance.

Since SIDS is, by definition, "the sudden *unexplained death* of infant younger than one year of age" (Moon and Fu 2007, emphasis added), researchers in the area have developed another acronym for experiences which the infant survives but which might have led to death if care actions had not been taken—"ALTE" or "apparent life-threatening events" (Fu and Moon 2007). Similar to SIDS, the causes of an ALTE are often unexplainable—no potential cause is located in about half of the identified cases (Fu and Moon 2007). Through the early 1980s, the infant's experience of an ALTE often resulted in the infant's being classified as at high risk for SIDS, but by the late 1980s this connection had been disconfirmed by published studies (National Institutes of Health 1987, Fu and Moon 2007). While specific causes of SIDS remain unknown, large-scale statistical studies in the late 1980s and early 1990s have revealed significant risk factors for SIDS. Some of these risk factors, such as face-down sleeping position, parents can attend to with little extra effort or expense, though others, such as male gender and

catching a common cold, do not offer parents any easy compensatory responses (Kinney and Thach 2009).

Both apnea (breathing interruption) and bradycardia (slowed heartbeat) have been suspected as causes of SIDS and these are the physiological processes most commonly watched by prescribed home monitors. However, neither has been shown to be a predictable precursor to SIDS, and prevention of SIDS is no longer considered a sufficient indication for home monitoring by the American Academy of Pediatrics' Committee on Fetus and Newborn (Committee on Fetus and Newborn 2003). In his clinical commentary to a 2004 article (Shoemaker et al. 2004), Matthew Gannons, MD, observed

> An episode of SIDS is devastating to parents and leaves physicians questioning what more could have been done to prevent the tragedy. Apnea monitors, however, are not the answer (Gannons 2004).

Despite this published official policy and established lack of connection, physicians are acknowledged to continue to prescribe home monitors in response to perceptions of SIDS risks (Abendroth et al. 1999).

More than a dozen studies investigating the effects of home monitoring on the moods of parents were published from the 1970s through the 1990s (Abendroth et al. 1999). Results were decidedly mixed, with more studies concluding that the monitors increased parental stress, but with a significant number of studies finding that the monitors provided "support and comfort" (Abendroth et al. 1999, 50).

Abendroth and his colleagues' (1999) study is noteworthy because its design benefitted from the established lack of connection previously established in the literature between these prescribed home monitors and SIDS. This allowed the researchers to

ethically establish a “no monitors” comparison group among infants that had similar (i.e., “high risk”) medical histories to the “monitored” group. Since researchers were able to gain access to the families in both groups before they left the hospital, they were also able to establish baseline “pre-home monitoring” levels of the parents’ emotional states and family functioning.

Abendroth et al. (1999) found no differences in any of the eight measures of family function (e.g., affective involvement, communication, problem solving, etc.) between parents using home monitors and those not using them, either at the baseline period before discharge (which would be hoped to show that the groups were similar on these measures) or, most importantly, when the families had been home together for six months after the baby’s discharge from the hospital. Parents in both groups had elevated levels of depression, anxiety, and hostility compared to the normal range for adults, not an unexpected finding in light of the stresses of parenting an high risk infant. Parents using the monitors appeared to have slightly greater feelings of depression and hostility in the first few weeks after their child’s discharge from the hospital than did parents who did not use the monitors, but these differences subsided by the infant’s third month after discharge. The authors speculated that the monitors’ presence may have served as a constant reminder to these parents of their child’s high risk status. Presumably, then, parents were able to accommodate to this status after two weeks at home. Though not noted prominently by Abendroth and his colleagues in this study, a more straightforward cause may have contributed to these negative parental reactions—problems with the monitors themselves. Other investigators of parental reactions to home monitors have noted the parents to have significant difficulties simply in dealing with the new

technology in the home, getting the machine to function correctly, responding to false alarms, etc. (e.g., Black et al. 1978). Many of these other studies have also shown that parents accommodate to these initial anxieties within the first few weeks (e.g., Black et al. 1978, McElroy et al. 1986).

In Abendroth et al.'s (1999) study, by the sixth month post-discharge, parents of the non-monitored children were measured as higher in depression, hostility, and anxiety, although this difference was only statistically significant for the hostility measure. The investigators were unable to explain this finding and speculated that mothers in the "no monitors" group might have returned to work in greater numbers prior to the final measurements at six months post hospital, resulting in an increase in negative feelingfrom additional stresses of combining work and parenting (though they collected no data to substantiate this). Most previous studies of parental reactions to home monitoring do not have comparable data for this time period. McElroy et al. (1986) assessed mothers' well-being at 3 months and one year post-discharge—they found no significant differences at either time between mothers using home monitors and a control group of mothers not using home monitors.

Studies of home monitoring consistently show a high level of parent satisfaction with the home monitoring experience after it is complete. Studies varied in the amount of parental frustrations with the technology they reported, although parents' complaints about false alarms, etc. appears to be more frequent in earlier studies (i.e., mid-1980s and before) than in more recent ones. This could be due to improvements in the technologies over time such that false alarms and difficulties setting up the devices were reduced, or due to reduced discrepancy between parental expectations and realities of daily life with

the home monitors, or due to some combination of these factors. However, even early studies that seemed to highlight some effects of home monitoring (e.g., Caine et al. 1980, which had no no-monitor comparison group) also concluded that parents found using the monitors to be comforting overall. While the literature confirms the everyday observation that caring for a new baby represents a significant stress for parents, it suggests that even parents in situations that lend themselves to higher anxiety, such as having an infant judged to be at higher risk for SIDS, tend to acclimate to their new situation over time. Under these conditions of heightened anxieties, most parents find that home monitoring surveillance devices provide at least a mild comfort during an especially anxious time.

Parental “compliance” with home monitor use, that is, their actual use of it, as opposed to the amount of use directed by physicians, is fairly high in the case of these sophisticated monitors and identified high risk infants. Studies typically find that infants are attached to the monitors properly 75% or more of the time that physicians request (Gibson et al. 1996, Mohan et al. 1999). These types of monitors are typically prescribed for relatively focused periods of time, unlike the more ongoing, open-ended manner in which common baby monitors are used—this time focus probably increases the parent’s proper use of the monitors. Even so, parental compliance sometimes declines over the course of several weeks (Carbone et al. 2001), though some studies have found compliance to remain constant or even to improve over the course of several months (Gibson et al. 1996). Parents also seem to make their own judgments about the balance of risk to the child and parental efforts. Parental monitor compliance is significantly higher when the child has individually been identified as having had a previous life-

threatening episode compared to when monitoring is recommended merely because the child had a risk factor associated with SIDS, such as being the sibling of a child who has had such an episode (Carbone et al. 2001), or having a medical disorder with a possible association with SIDS (Mohan et al. 1999). Parents also tend to report themselves to researchers as using the monitors more regularly than they actually do use them (Cordero et al. 1993, Mohan et al 1999).

A Constructionist Approach: Commercial Communities of Parenthood

One constructionist approach especially applicable to the subjects of this study focuses on commercial constructions of concepts such as risk and responsibility and how these concepts are incorporated into parenting. That is, the approach looks in detail at how the concepts are developed in commercial product development, advertising, and marketing. This approach is especially useful to the study of anxiety, risk, and parenthood because parents are frequent targets of advertising and, as will become clear in the current study, parents' anxieties are a frequent target of commercial communication.

Martens et al. (2005) provide a prime example of this "commercial constructions" sociological approach. They argues that both childhood itself and the notions of safety and danger relevant to children are given much of their salience and definition within our lives by how they are portrayed and discussed within the commercial realm (by advertising copy, products developed and marketed, etc.). Commercial discourses can, Martens et al. contend, be seen to develop and to support the ideas that the child is both dependent and vulnerable, that the world presents many potential dangers, and that it is the job of parents to protect (through the appropriate purchase and use of the proper

goods and services) their prized but fragile offspring. As with other studies from the sociological perspective, Martens et al.'s point is not to establish whether or not these ideas are accurate in some objective sense, but to illustrate how particular images of childhood and parenting come to dominate in the commercial sphere. These illustrations lead to questions about competing images and ideas that appear to be excluded from commercial portrayals, and to questions about who might benefit from how childhood and responsibility have come to be defined by commercial concerns.

A word of caution is necessary here: noting that commercial discourses contain and develop these safety concerns and their solutions is not proof that these concerns exist merely or even primarily because of the commercial discourses, and Martens et al. do not claim such a straightforward connection. It is possible, for example, that the commercial discourses succeed in gaining the consumers' attentions because they accurately highlight pre-existing consumer concerns. In this way, commercial discourses could serve to direct consumer choice among competing products rather than to create per se the original demands for these products [e.g., the "canalizing function" (Lazarsfeld and Merton 1948)]. But even if it is impossible to prove that such commercial communications create the anxieties for which their advertised products offer the cure, it is suggestive to notice that some particular views of childhood and corresponding particular actions of parents are much more frequently supported by commercial communications than are others. Notions of vulnerable children and purchasable parental responsibility are these more frequent and, one expects, more profitable, ideas.

Commercial communications around products related to child safety, including much of the promotional material and "consumer reviews" of the main surveillance

technologies investigated in this study, construct a "responsible parent" ideal whose proper behavior goes a long way toward successfully addressing the safety concerns to which these same communications refer. This "proper" and "responsible" behavior is where the profits lie for commercial concerns. Martens et al. describe the broader commercial marketplace as an important piece among a larger group of interwoven "social networks," networks she terms "communities of parenthood" (Martens et al. 2005, 7). "Communities of parenthood" include all of the networks a parent might occupy that may in some way affect the parenting enterprise. Martens et al. believe that norms and models of parenthood are constructed gradually over time through the interconnected efforts of these various communities. This model of a network of multiple potential causes, with its variety of potential interlocking effects, makes it clear that simple linear cause-effect links will be rare. This focus on complex causation is the primary function of the communities of parenthood model as Martens et al. describe it—they do not attempt to offer either an empirical or a theoretical description that would concretely identify specific "communities," nor do they address the issue of relative effect strengths of the many possible communities a parent might occupy (for example, who pays more attention to advertisers, who listens more to doctors, and who relies on the advice of grandparents, and why?). Martens et al.'s work helps to highlight the multiplicity of potential influences on the parents' experiences of all aspects of parenthood and to remind us that such seemingly "internal" concepts such as risk perception are not without their socially determined aspects.

Martens et al. (2005) emphasize that parents, especially new parents, are actively learning what it means to be a parents, actively engaged in formulating their identities as

parents. For those who seek to be “good” or “responsible” parents, they take their learning from the variety of communities of parenthood with which they interact, including the advice of experts, their own observations of the parenting behaviors of others, and the suggestions of commercial culture. Martens et al. believe that a significant source of parenting anxiety arises from the parents’ active comparison of their own experiences and behaviors with the images of parents portrayed by the various communities of parenthood.

Martens et al. (2005) conclude that “commercial communities of parenthood” (i.e., manufacturers and sellers of safety-related products and services, along with the products and communications about products such companies produce) promote a particular parenting style, a specifically risk-averse parenting style that is equated with responsible parenthood. They note that this focus on risk avoidance and safety is at odds with many of the values presented in other areas of commercial culture (i.e., to non-parents), which present risk-taking as pleasurable and admirable. This equation of risk-aversion and “good” when it comes to parenting is universal enough across the range of commercial communities of parenthood that it may have become not just one parenting approach option among many, or even a generally agreed upon goal to which most Western parents might aspire, but a training template, a major source by which parents invent their own parenting identities and understand themselves, and a model that strongly influences how parents are acted upon by others (e.g., how they are adjudged by the legal system, how they are regulated by politicians and bureaucrats, and how they are judged as parents by the greater community).

Martens et al.'s "communities of parenthood" idea might also be used in the future to investigate a phenomenon which seems to contradict many of the general conclusions of both the sociological and psychological literature on parenting, parents who consistently fail to maintain their children's safety, especially parents who might feel little or no guilt about this outcome. Martens et al. and other sociologists of parenting appear to assume that the "responsible parent" identity will be an aspiration for all, even if commercial constructions of this aspirational model might render its full attainment for most parents in the real world. But as the results of several studies within both the psychological and sociological literatures demonstrate, parents do not act as if bound single-mindedly to the goal of risk avoidance. In fact, parents often make explicit that another characteristic of a good parent is one who teaches children to manage their own risks—and this almost inevitably means exposing children to potential dangers so that they can learn to make their own risk judgments. In addition to this behavior, itself also consistent with parental striving to be a good parent, there are also research findings that suggest parents are actively balancing risk calculations with the efforts required for risk avoidance, so when parents begin to feel that their efforts are "not worth it" in terms of benefits to the child, they eliminate even doctor-ordered risk-reduction behaviors. This will be clearly seen in some of the psychologically-oriented medical literature on early child monitoring, and it is also demonstrated in a qualitative investigation done from a more sociological perspective.

Social Construction of Parenthood and Child Risk

While the commercial constructions of childhood literature focuses on how risk concepts are portrayed by companies and the extent to which these portrayals are taken

up by consumers, other sociological investigations look directly at how risk is discussed and how it functions in the everyday lives of subjects, regardless of how it might have originated. Kelley, Hood, and Mayall (1998) conducted one of the few direct interview studies of children, parents, and their perceptions of risk and risk-related behaviors. The researchers interviewed parents of children ages 3, 9, and 12, along with cohort groups of children at the same ages (some of whom were the children of the interviewed parents) in the UK. According to these investigators, parents acknowledged as socially-defined and accepted their major roles as protectors of their children. Parents also identified the need to balance somewhat conflicting requirements of protecting their children from risk while also encouraging their children to take some risks "in order to be a child and to become a competent adult" (18). Interestingly for the purposes of the current study, these parents did not identify the ages of 3, 9, and 12 as relatively risky ones for children—both earlier (infancy) and later (adolescence) stages were seen as more dangerous. Parents were characterized as seeing their own childhoods as less restricted by their own parents and as less dangerous than contemporary (late 1990s) childhood. Also interesting in light of these parents' expressed belief in the relatively greater dangers inherent in infancy, home was perceived as a safe haven and the dangers to which parents were most attentive were those that originated outside the home or family—child abduction and interpersonal violence were commonly cited, along with more societal-level dangers such as pollution or poor educational opportunities.

Parents of these toddler-and-above aged children felt that an important aspect of their protective function was actively teaching their children about risks—what situations were risky and how to respond to those situations. The researchers noted that even at age

3, children did not necessarily get anxious about the same aspects of situations as did their parents. While one mother of a three-year-old expressed worry that her daughter's presence at nursery school exposed the child to possible interactions with potentially dangerous "strangers," the daughter expressed anxiety only about having to wait for the mother's arrival at the end of the day. Perhaps unsurprisingly, as the children in this sample got older, they identified more sources of worry in common with the parents. In general, though, children focused more on interpersonal violence worries and less on abduction or larger societal-level concerns.

The authors identified the phenomenon of "compensation," a feeling prevalent among the parents they interviewed that parents should make up for the potential negative effects on their children of the increased restrictions and decreased freedom of movement that parents applied in the cause of risk reduction. Compensation took the form of encouraging and supporting children's involvement in many after-school activities, usually by providing transportation to most of the activities. These compensatory action were felt by the authors to be, for most parents, part of an overall responsibility the parents felt to provide developmentally appropriate experiences for the children within the limits imposed by the parents' tolerance of risk. By age 12 (but not earlier), children were felt by most parents to need more freedom of movement and less direct supervision by parents—this increased freedom was seen by parents to be an important contributor to the children's learning to become independent and responsible adults. These parents, then, understood that their supervision and surveillance of their children, while felt to be necessary in the name of safety, had an effect of restricting the children's developing independence and responsibility. They actively sought out

activities for their children that might reduce these negative developmental effects, while still allowing parents a good measure of supervision of the children. By age 12, however, these compensatory activities were seen to be not fully compatible with the children's developmental needs—in the eyes of these parents, some lessons, it appears, can only be learned if the parents relax their supervision and control.

This phenomenon of compensation emphasizes the nature of parenting surveillance (and, I would argue, most other types of surveillance as well) highlighted by Scott, Jackson, and Backett-Milburn (1998)—surveillance in most instances is not simply "watching"—it also involves the active structuring of the surveillance targets' activities (in this case, the children's daily activities) so as to render them more contained, more controlled, more easily observed, and less risky in the judgment of the surveillants. The "watching" aspect of surveillance is virtually inseparable from these other containment and control activities, and all are seen as important to the goal of risk reduction and to the role of responsible parent. One notable aspect of many new surveillance technologies, including some of those in our current study and some developed since Kelley et al. conducted their interviews, is that they seek to bridge this watching—containment divide, allowing the children (and the parents) an increased range of behaviors and an apparent increased freedom of movement while maintaining the "watching" in some form. The effects of this "bridging" function on the developments of both children and parents remain to be more fully explored.

Parents expressed the conviction that the home environment alone was inadequate to provide for their children's proper development—the study's authors felt this sentiment to be more frequently and more strongly expressed by parents from lower

socio-economic classes. Parents frequently linked this inadequacy of home (and their own efforts) to wishes for or complaints about government-provided services for the children, such as school and after-school programs. Parents expressed this sentiment across the range of ages included in this study. Even at the lower end of the age range, parents felt that extra-familial contacts were important for skills the children need to develop—for 3 year olds, for example, manners were mentioned as an important skill for which parents sought additional sources of teaching for children in addition to the parents' own efforts.

This group of UK parents demonstrates how many parents are quite aware of the direct effects of their risk perceptions on their children—that the parents' desires for the safety of the children directly leads to restrictions in their children's freedom and mobility that is not without negative consequences for these same children. Parents are aware of this balancing act and actively try to compensate for potential negative effects. Two additional points are less clear. First, Kelley et al did not address the issue of the accuracy, or lack thereof, of parental perceptions of risk. The statically rare possibility of stranger abduction, for example, is given by parents unquestioningly as a logical reason for their imposition of general restrictions on their children's mobility and independence—the restrictions are seen as regrettable rather than as irrational. Secondly, while Kelly et al did a commendable job identifying parents' own risk perceptions and their risk-containment behaviors such as surveillance, no specific link was built between these two sets of observations. Perhaps this was due to a lack of variance in these risk perceptions, the attendant anxieties aroused in parents, and risk-containment behaviors of

parents in Kelly et al's study. As results were reported by the investigators, there appeared to be no subject representing a position of less control or less surveillance,

Kelley, Hood, and Mayall (1998) interpreted parents' acknowledgment of risks such as pollution and violence, over which they had little or no control, as at least partial confirmation of Beck's (1992) "risk society" perspective. The authors also felt that their subjects offered some support for Beck's "individuation" hypothesis. Parents expressed the feeling that older, more traditional methods of insuring child safety, i.e., those in effect during their own childhoods, such as much more limited dangers and shared knowledge and responsibility for child minding across a cohesive community of adults, no longer existed. Individual parents had to develop their own methods for insuring the safety of their particular children. The authors did not highlight the ways in which their findings failed to support Beck's ideas. Most specifically, unlike what Beck predicted, the focus of these parents appeared to be familial, rather than individual. The fact of family membership, and their own status as parents, led directly to the parents' felt responsibilities that this study identified, especially the responsibilities for risk control via surveillance and behavioral structuring.

"Imperative" Technology and Regret Theory

For parents, one appeal of the use of surveillance practices for multiple safety-related concerns is the belief that this use will reduce risks to the child. But in part because such risk considerations are themselves rarely straightforward, judgments parents make about the risk reduction effects of their own behaviors (like surveillance) are similarly rarely crystal clear. So it seems very likely that factors in addition to what we might consider "clear eyed" parental assessments of risk and of risk reduction contribute

to the parents' considerations about engaging in a activity like child surveillance. Some researchers from a mixed psychological-sociological perspective have attempted to incorporate ideas and findings from more general research into human decision making into understanding how parents understand and respond to risks related to children. Human decision research provides some results that suggest what some of these additional factors might be that parents consider when assessing child risks and determining their own risk reduction behaviors. For example, another important factor for parents may be the extent to which engagement (consideration, purchase, use) with safety products demonstrates (to the self and to others) enactment of a "responsible parent" identity that can attenuate "anticipated decision regret" (Tymstra 1989). "Anticipated decision regret" is the formal construction of what might be called more colloquially the "better safe than sorry" or the "how dumb would you feel" approach to decision making, as in, "How dumb would you feel if you don't do [purchase, practice, use, etc.] *X*, and something bad happens to your child?" Tymstra found that decision regret in humans focuses almost exclusively on the potential negative psychological consequences of not performing a particular action (e.g., the guilt or self-recrimination that comes from failing to act). The potential negative consequence of performing an action (e.g., a conclusion of wasted effort in a situation in which the effort was unsuccessful or unnecessary) seems, in comparison, to have little motivating effect. Decision regret is an attempt by scholars of human decision making processes to identify factors that account for why humans so often make decisions in ways to do not seem to line up with mathematical calculations of outcome probabilities.

Conclusions

New ways of watching by parents, watching most accurately characterized as "surveillance," have evolved in America since the mid-1980s. These modes of watching have become both a standard practice and a standard of practice. Without much explicit planning or public discussion, surveillance parenting has become an important part of what is required of the "responsible" parent, prescribed both by the wider society and by parents themselves.

In situations where the patient has relatively little to lose and much to gain by use of a medical technology, these technologies acquire an imperative character for potential users—they become attractive far out of proportion to the "objective" likelihood that they produce a benefit to the user. The possibility that one may regret not having done everything possible seems to be a very powerful motivation. There are significant parallels between patients in such "life or death" situations and parents of the very young, such that surveillance technologies may acquire a similar imperative character for parents. Something about new surveillance technologies urges or demands that parents take them up, so that, in some important ways, parents may feel compelled to use surveillance technologies and practices, rather than merely free to use them. Identifying specific players and how they contribute to the development of this compulsion is a challenge. The makers of these technologies, who must maximize sales in order to increase profits, are likely to be significant contributors to this framing of parenting surveillance technologies as vital and expected. Another group that makes a major contribution toward establishing surveillance as an imperative is the parents themselves. Some of the reasons that parents have for using new surveillance tactics are conscious, rational, and

reasonable—freely acknowledged and openly discussed. Part of what has established surveillance practices as a norm of American parenting is a tendency among parents to err on the side of caution, to include a margin of safety around children that might be more than the children actually require for their safe and healthy development. Other interesting reasons that parents have for using surveillance, which also contribute mightily to the imperative character of the practices, are much less rational, less reasoned, and less freely acknowledged. Surveillance technologies speak to parents' wishes and fears as much as to their rational assessments of the jobs of parenting—this investigation seeks to identify both the rational and the less rational contributors to the rise of surveillant parenting and to describe how they contribute to the development of the surveillance imperative.

Research results linking parental watching to the child's later development of undesired traits or conditions are, at this point, suggestive rather than definitive. While there is certainly intuitive appeal to the concerns expressed by some scholars that anxious, overly watchful parents are more likely to produce anxious children, research has not discovered a clear link nor definitive causal mechanism by which this effect might be produced. The causal link between anxious watchfulness in parents of very young children and later child pathology is especially tenuous. Anxious watchfulness in the parenting of young children may signal a parental tendency to other sorts of parenting characteristics, such as excessive psychological control or anxiety, that in combination does contribute to negative child development outcomes.

Counter-balancing these concerns, empirical research on parents of older children supports a conclusion that parents who remain actively involved with their children by

maintaining an awareness of their child's whereabouts and activities are contributing to better child outcomes. Most parents seem to be able to recognize that the ways they can best watch their children change as the child gets older and parents are largely able to adjust their surveillance activities to the developmental level of the child.

The case of highly sophisticated in-home baby monitors suggests that parenting surveillance technologies can be simultaneously sources of anxiety and comfort—anxiety, because they may malfunction and because they remind their users of vulnerabilities, comfort because they are seen as at least occasionally providing genuine assistance to the taxing job of parental watching. With time, most parents seem to accommodate to the anxieties of parenthood, whether these anxieties are from direct risks to the child or from the interactions with devices acquired to assist with parental safety desires. This research also suggests that parents make their own judgments about the severity of risk to their children and about the usefulness of the surveillance practices, rather than slavishly following the directives of medical authorities. Empirical research confirms that, in most instances, it is difficult for parents to maintain consistent surveillance practices over many weeks or months—parents' anxieties about their child's vulnerability usually decline as their child successfully develops.

CHAPTER THREE

READING BODIES: PREGNANCY ADVICE BOOKS AND SELF-SURVEILLANCE

> The book is such a great technology. It's lightweight, it's mobile and the battery never runs out.
>
> Matt Goldberg, CEO, Lonely Planet Guides[1]

The various meanings of the colloquial English expression for pregnancy, "expecting," and the title of the pregnancy advice book that is the focus of this chapter, *What to Expect When You're Expecting* (Eisenberg, Murkoff and Hathaway 1984) all underscore how human perceptions, beliefs, and behaviors contribute much to how this biological process is experienced. As Gardner (1995, 45) has described it, pregnancy is a process that is "biologically determined … but socially achieved as well." "Expect"—the word points to the future, but not just any future. It implies a particular chain of events, an anticipated future, a future about which you have some vision. The *Merriam-Webster Online* (2010) dictionary confirms this connotation, differentiating "expecting," "looking for," and "hoping" by the degrees of certainty with which their actors embrace what may occur. *Merriam-Webster Online* (2010) also notes that "expect . . . usually involves the idea of preparing or envisioning." When you *expect*, you are an active participant, a constructor of your take on what may transpire, not just a passive observer of whatever may happen next. The *Merriam-Webster Online* (2010) dictionary also explains that "expect" shares Latin etymology with "spy."

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[1] Allen, Anne Wallace. 2010. Guidebooks adapt to the mobile download era. *The Palm Beach Post*, May 13, http://www.palmbeachpost.com/accent/travel/guidebooks-adapt-to-mobile-download-era-686647.html (accessed May 25, 2010).

What to Expect When You're Expecting is a book medium, mostly text with occasional line drawing illustrations. As a book, its apprehension, how its user senses it and interacts with it, requires different sorts of activity than the other two media of this study, fetal ultrasounds and baby monitors. As Barthes (1977) has noted, making sense of textual representations via reading implies a sequence of activity extending over time (van Loon 2008). As will become evident as we look at *What to Expect* in detail, the authors make good use of this aspect of the reading experience and how it parallels pregnancy, also an activity extending over time.

What to Expect When You're Expecting offers a guide and manual for self-surveillance at this early stage of parenting. *What to Expect*'s innovations are, in part, a battle over genre--what sort of book best serves the needs of expectant contemporary parents? Before *What to Expect*, most pregnancy advice books explained or illustrated, that is, provided information about, what was happening during pregnancy. They were, essentially, reference books. *What to Expect* spoke in a different voice, as a consultant, a guide, and a fellow traveler. To be sure, *What to Expect* does contain lots of information and at a casual glance appears to be one among many books explaining the experience of pregnancy for the curious and anxious mother-to-be. But *What to Expect* positioned itself as a different sort of book, one to be lived with, to be kept by the bedside and referred to regularly and often throughout the pregnancy, one providing both advice and comfort. Where previous pregnancy advice books were like reference works, organized by the symptoms, problems, and tasks of pregnancy, *What to Expect* was more like a religious primary text, walking with its pregnant readers through their deliverance (a baby has been pictured on the back cover of every United States edition). *What to Expect*'s authors

showed themselves familiar with the terrain, but they also communicated that each reader's journey would of necessity be unique--*What to Expect* invited the mother to organize and to make sense of her own cascade of new thoughts and sensations. It offered (and continues to offer, as it is now in its fourth edition and has been on the *New York Times* bestsellers list most weeks since 1990) to the potentially overwhelming task of bearing a child a panoply of techniques of a newly reflexive parenting, especially surveillance, planning, goal setting, and risk reduction strategies. *What to Expect* spoke to many women's developing identities as reflexive parents.

What to Expect functions, in part, as a self-surveillance training manual, so it holds important clues about how self-surveillance became important for American parents in the latter part of the twentieth century. Surveillance tends to offer power to those who employ it (Foucault, 1977), and this is also an attraction of self-surveillance. Who would not wish for more power when faced with the heady responsibilities of impending parenthood? But while the power gained through surveillance practices is often understood to be at the expense of those being watched, such an analysis is of limited usefulness when the watcher and watched are one and the same. This is, at least in part, the situation of the reader of *What to Expect*, a text which made self-surveillance an integral part of parenting. Understanding how *What to Expect* made this work will provide important insights into how self-surveillance practices changed the subjective experience of becoming a mother.

Pregnancy Advice Books and the "Medicalization" of Pregnancy

There appear to be at present no published book-length analyses of pregnancy advice books. A number of related phenomena have garnered such longer studies. There

are books about childrearing advice (Hulbert 2003, Grant 1998), medical care of pregnant women (Oakley 1984, Rothman 1986 [cited in Browner 1997], Rakusen and Davidson 1982 [cited in Copleton 2004]), midwifery practices (Eccles 1982), cross-cultural studies of labor practices [Englemann 1883(!)], childbirth and pregnancy [Jordan 1993 (cited in Browner 1997), Davis-Floyd 1992, Wertz and Wertz 1989, Leavitt 1986], and reproductive practices more generally [Ginsberg and Rapp 1995 (cited in Browner 1997)]. Several articles about pregnancy advice books since the mid-1990s have taken an explicitly feminist perspective (Sbisa 1996, Ruhl 1999, Marshall and Woollett 2000) and have analyzed these books in terms of how they function to limit and to control female identities and behaviors. One set of studies by Gardner (1994, 1995) with a notably historical, social constructionist perspective drew many conclusions similar to feminist critics about how advice texts function to reinforce traditional activities and roles for women. A more recent study by Copelton (2004) tries to account for the ongoing popularity of these books with pregnant women despite the criticisms these texts attract. Most of these authors, with the exception of Copelton, do not limit themselves to United States pregnancy advice texts, and several do not focus on American texts at all—Sbisa looks at Italian pregnancy advice books, while Ruhl works with similar books in the United Kingdom. Most of these authors, however, tend to draw general, rather than culture-specific, conclusions about how these texts function.

Much of the critical attention to pregnancy since the 1980s has analyzed the "medicalization" of pregnancy (Oakley 1984, 12). "Medicalization," which is not limited to pregnancy, is the process by which "a particular area of social behavior (pregnancy) comes to be separated off from social behavior in general and reconstituted as a specialist,

technical subject under the external jurisdiction of some expert [medical] authority" (Oakley 1984, 1). As with most hegemonic processes, medicalization is generally seen to be the result of efforts by groups that gain power, prestige, or some other advantages from this way of understanding and organizing behavior, aided by systemic characteristics that allow medicalization to change and adapt to critiques and challenges without changing the basic power relations within the system. Though different authors emphasize different groups as the principle beneficiaries of the medicalization of pregnancy, among those seen by critics as gaining power by this way of looking at things are "physicians, judges, legislators, and the media" (Hubbard 1995, 305). The medicalization of pregnancy is seen as an example of the expanding "social control functions" of medicine (Copelton 2004, 1), though some specialists in the sociology of medicalization (who apply this idea to areas other than pregnancy) have pointed out that the medical profession itself is not always centrally involved in or even the beneficiary of all medicalization (Conrad 1992). The idea or possibility of medicalization is especially salient for pregnancy and parenthood because of its implication that parents are not the constructors and directors of their own parenting identities and actions. Medicalization implies that larger forces external to the parents themselves, such as the medical profession, are constructing how the problems and solutions of parenthood are understood and enacted. Medicalization critics argue that even maternal self-surveillance, when directed by medical professionals, is co-opted to service the hegemony of the medical profession, rather than the needs and desires of parents themselves.

While medical professionals (and others) have offered advice via books to pregnant women in terms of "symptoms" or other constructs that could be construed as

“medicalizing” pregnancy for many, many years (e.g., Fox, 1834), historians of the medicalization of pregnancy generally see it as primarily a twentieth-century phenomenon (Oakley 1984, Grant 1998, Hulbert, 2003). Medicalized pregnancy is so dominant in contemporary America that it is sometimes difficult to remember that different views of pregnancy are possible. As one example of a competing paradigm, Oakley (1984) notes that, before the beginning of the twentieth century, pregnancy was more likely to be understood by mothers, the general public, and even by the medical profession itself, as a “natural” process upon which the supervision or intervention of doctors was neither effective nor desirable. But, as Oakley details, this cultural view of pregnancy as natural did not stop “experts,” especially medical and religious experts, from offering their strong opinions about how women should conduct themselves during pregnancy to allow the pregnancy to be optimally natural. In addition to suggestions about how to deal with the most common physical difficulties likely to be experienced during pregnancy, these books offered advice to pregnant women about diet, about behavior, and even about the best emotional states to maintain during pregnancy (Gardner 1994)—a list of topics not dissimilar to the pregnancy advice books of today

Gardner (1994, 1995) contends that the notion of “fetal endangerment,” including the definitions of pregnancy as a time of special risks and of the fetus as uniquely vulnerable, are not late twentieth century ideas, but ones which can be seen in pregnancy advice texts well back into the nineteenth, and perhaps even into the eighteenth, century. Authors offering advice about the fetus’s vulnerable state have historically tied these concerns to opinions about maternal behavior. Many different female behaviors during pregnancy have been targets of criticism and concern. Gardner notes that, at various

times, excessive travels outside the home, lustful thoughts, seeing an unexpected person, and indulging in food cravings have all been proscribed. In some cases, pregnancy may simply provide a convenient and plausible condition under which to introduce criticism and control of female thoughts and actions that might, without the idea of the vulnerable fetus, be difficult to justify. Advice texts to pregnant women have historically reflected a mix of medical knowledge and social concerns about defining proper female and motherly behaviors (Gardner 1994).

Feminist critics such as Hubbard (1995) and Ruhl (1999) contend that almost all pregnancy advice books strengthen this medicalization of pregnancy, both by applying medical terminology and thinking to their explanations of pregnancy processes and, in many cases, by explicitly telling the mother that her opinions should be clearly secondary to her doctor's. Several critics, especially Sbsia (1996) note several examples in which pregnancy advice books directly discount pregnant women's sensory experiences of their own pregnancies as untrustworthy sources of information for the mother, suggesting that the doctor's opinions should always be trusted as the more definitive source. Taken together, these critics argue that the medical approach to pregnancy, and pregnancy advice books as a reflection of this approach, justify recommendations of the need to control mothers in a two-step process of social construction. First, pregnancy gets defined as a time of special risks requiring medical attention and intervention. Next, the fetus is highlighted as the object, target, or victim of these risks, as opposed to the mother, or the mother-fetus unit. [The passive voice construction of these last two sentences, which simultaneously deny authorship of the opinions and seek to establish them as observations of nature, rather than as opinions, is also typical of the rhetorical tactics of

many pregnancy advice books. These tactics come in for special criticism by Sbisa (1996)]. In the area of pregnancy, then, fetal endangerment, as it has come to be employed in the late twentieth century, has effects far beyond the assurance of professional medical status. It creates two conditions which put the pregnant women at a social disadvantage. Medicalization constructs a fetus with a status and identity that may have interests distinct from and even opposed to those of the mother. Then, it provides a structure for judging a wide variety of the mother's experiences during pregnancy primarily in terms of their potential impact on the developing fetus.

In light of Gardner's (1994) historical analysis, however, it is important to remember that what is unique about the contemporary medicalization of pregnancy is the firm establishment of a unique and distinct fetal identity—pregnancy has long been used as an occasion for "advising" woman, even if the justifications for offering the directions have changed through time.

Critics of medicalization generally see the other social actors contributing to the notion of fetal endangerment (see Hubbard's indictment noted above of government, the legal profession, and "the media," in addition to the medical profession) as benefitting, in terms of power, prestige, money, and/or control, at the expense of mothers. Critics of medicalization concede that maternal and fetal health has greatly improved across the twentieth century coincident with pregnancy's medicalization, though they are apt to dispute the degree to which medicalization should be given causal credit for these improvements (Davidson and Rakusen 1982). Critics of pregnancy advice texts often contend that the medical perspective represented in these books limits female agency and actively makes women feel less competent by delegitimating their own perceptions and

understandings of their pregnancy experience (Sbisa 1996, Marshall and Woollett 2000). As we will see in our detailed analysis to follow, the authors of *What to Expect* see that as a problem with some advice books, though they claim that their own book has the opposite effect.

Riessman (1983) has noted that many of the critiques of medicalization apply to the entire enterprise of science, though most medicalization critics tend not to push the argument to this conclusion. Like medical science, the activities of science itself, especially its choices of subject matter and hypotheses considered, are socially and historically determined activities. Far from being a value-free pursuit of truth, values control science's foci. Secondly, science and medicine both tend to reduce complex processes to more simple cause and effect relationships. This exclusionary simplification process is also not value-free, but reflects active judgments about what is more and less important. Third, both medicine and science often claim greater assurance about the accuracy of their current knowledge than is warranted by a strict adherence either to actual research findings or to the scientific method itself. Riessman's argument illustrates one of the core characteristics of both reflexive modernity and reflexive parenthood, the ambivalent dependence on scientific expertise for information about life's difficulties is a core characteristic of both reflexive modernity and what we might call "reflexive parenthood," how reflexive modernity shows itself in contemporary parenting. This ambivalent dependence comes primarily from the combination of two factors, the belief that science (and science-referencing practitioners, like medical doctors) provides the best available source for information and the belief that scientific knowledge is itself likely to be, at best, incomplete and, in many cases, significantly

flawed or incorrect. Many parents only dimly acknowledge this ambivalence because of the anxieties such lack of assuredness produces. Faith in scientific knowledge is granted in part because faith in other potential sources of information, such as religion and tradition, has eroded even more completely than faith in science. This ambivalence about scientific knowledge characteristic of reflexive modernity and reflexive parenthood reflects an advanced attitude toward science not unlike that ingrained in the scientific method itself. As Popper (1968) and many others have noted, the scientific method assumes that all "knowledge" is contingent and subject to replacement by new and different knowledge—all scientific knowledge is understood to represent, at best, "the best we can know at the moment."

Riessman (1983) argues that medicalization gives physicians the power to define illnesses and treatments, and this power is principally the result of political/economic struggles rather than value neutral, "objective," or "scientific" processes. The medical decisions physicians make are not simply the result of science, or at least not the result of some science existing outside the political value system of its time, but reflect science combined with the goal of maintaining the powerful position of the medical profession within society. Riessman notes that one observable result of this political dimension is that medical practice subjects politically less powerful groups, a classification in which includes women, to disproportionate medical labeling and medical control. All medical interventions suspect as political interventions.

Copelton (2004) has criticized many of these medicalization critics for failing to account for the immense popularity of pregnancy advice texts with woman. She contends that certain aspects of many feminist criticisms present a view of women as having

extremely limited agency, incapable of judging the costs and benefits they receive from these texts, and primarily acting as unwitting pawns of larger medicalization processes. Many years before, Riessman made a similar criticism, stating explicitly that such passive portrayals "perpetuate the very kinds of assumptions about women that feminists have been trying to challenge" (Riessman 1983, 3).

Riessman, however, suggests a further analysis of the female participation in and contribution to medicalization beyond the biological and emotional gains Copelton cites. Riessman contends that female support of medicalization is class-specific support and is based on the class-specific interests and needs of certain women. In Riessman's analysis, the interests and needs of "women from the dominant class" (5) coincide contingently with the needs and interests of the medical profession to produce female support for medicalization of pregnancy in the form of supportive actions from females of this "dominant class." This female support of medicalization is, Riessman believes, unstable rather than fixed, because the interests and needs of the two groups might diverge at some point in the future.

As will be seen in a detailed reading of *What to Expect*, it (along with every other pregnancy guide) makes specific assumptions about the attitudes and behaviors of its readers that illustrate its class specific targets. However, the range of membership who feel that their interests and beliefs are represented by pregnancy advice books, and many aspects of the medicalized approach to pre-natal care, might be very broad indeed, at least in the United States. Several researchers since the mid-1980s have found no significant differences in beliefs about pre-natal care across ethnic and social class groups in the

United States (Lazarus 1994, Browner and Press 1996) even though they had expected to find such differences before beginning their studies.

The Rise of "Scientific Motherhood"

The medicalization of pregnancy has occurred in conjunction with a broader reaching change to parenting in the United States, the development of what Rima Apple (2006) has called "scientific motherhood." Scientific motherhood, whose beginnings Apple traces back to the mid-1800s, is characterized by a mistrust of instinct and tradition as the best guides to bearing and raising children and a growing reliance on the opinions of science, especially in the form of experts linking their opinions to scientific authority, to explain and direct the processes of motherhood. Good mothering, from the perspective of scientific motherhood, is a set of skills to be learned rather than a "natural, inborn ability" of women (Apple 2006, 2). As the generally accepted best route to producing healthy children, the scientific motherhood perspective largely supplanted the "natural instinct" perspective in the press and among the middle and upper classes in the United States during the last half of the nineteenth century. By the first quarter of the twentieth century, it was clearly the dominant perspective of governing agencies such as child welfare groups and public health authorities (Apple 2006).

Apple (2006) focuses primarily on the turn to medical authority for direction about child care rather than child bearing, but many of the same arguments apply to both. Apple takes pains in her account of the rise of scientific motherhood to differentiate it from medicalization per se, but it is clear that the two trends aided each other significantly. For example, scientific motherhood and the medicalization of motherhood both supported mothers' active mistrust of the advice of previous generations of mothers.

Apple argues that this mistrust resulted from the rapid social and technical changes occurring in American home life, which led each generation of mothers to feel that the opinions of mothers from earlier periods were not relevant to their own experiences. The breakdown of this traditional source of information about motherhood left an information gap, and mothers actively sought out new authorities to provide the understanding and guidance they needed (Apple 2006). This searching coincided with a period in the late nineteenth century in which the medical profession was organizing itself: professional organizations were forming and establishing clear educational guidelines for membership, and these same professional organizations were fighting to establish themselves, both legally and in the minds of consumers, as the final authorities in matters of American health. The needs of the medical profession to establish its approach and practices as authoritative fit well with desires for information and direction mothers were experiencing—physicians jumped in to fill the information gap. Many of their efforts led to notable improvements in the lives of mothers and babies. Infant mortality rates began falling in the United States at the end of the nineteenth century (Brosco 1999). The medical specialty of pediatrics was able to offer concrete and practical advice about infant feeding, a pressing need where results could be seen quickly. The success of this advice to mothers and public health officials contributed greatly to perceptions of legitimacy for pediatrics (Brosco 1999). Maternal mortality rates also began to decline beginning in the latter half of the nineteenth century. Improvements in infant and maternal survival with the increasing involvement of science and medicine in childbirth and childrearing were not limited to the United States. By 1900, Sweden's maternal

mortality rate had declined more quickly and stood lower than that of the United States (Hogberg 1986).

Critics of medicalization have noted, however, that improvements in maternal and infant mortality alone cannot account for the growing prominence of physicians in the lives of United States mothers. Improvements in maternal and infant mortality were not steady, and some changes in childbirth practices associated with medicalization in particular seem to have contributed to the uneven course of this improvement. As American birthing changed from a home based (95% of all births in 1900) to a hospital based (50% of all births in 1935) practice, maternal mortality rates remained fairly consistent throughout the first quarter of the twentieth century, while infant mortality due specifically to injuries sustained during birth actually increased (Thomasson and Treber 2008).

While critics of the medicalization of pregnancy tend to emphasize the role of the medical profession in actively subverting women's previous approaches to pregnancy care, Apple emphasizes the active agency of mothers in the rise of scientific motherhood. While many instances can be found in which physicians do actively denigrate traditional handed-down or folk practices of motherhood, Apple argues that mothers were, in many cases, doing this same discounting even before physicians became involved. It is inaccurate to characterize this new trend in thinking about motherhood practices in America during the last half of the nineteenth century either as simply a rejection of past tradition and advice or as slavish obedience to a dominating medical authority. The turn of thinking that Apple (2006) describes is one in which mothers of this period began to take a new and enhanced level of responsibility for integrating information from a variety

of sources, including advice from relatives and friends, results of personal experience, the opinions of physicians, and published advice from pregnancy texts. The approach of mothers during this period was *scientific* in that it was empirical and results-driven. Apple (2006) contends that mothers actively discarded sources that provided erroneous or ineffective advice in favor of conclusions based on their own experiences. These rejected sources often included both the previous generations of mothers and physicians offering the many ineffective medicines of the time. Although the advice provided by physicians was by no means without fault, much of it appears to have been better than advice available from other sources. Mothers recognized this. Therefore, while physician guild-building activities certainly did contribute to the medicalization of motherhood, women's own judgments about information sources contributed as well.

The authoritarian, physician-dominated medicalization in the United States identified by 1990's critics took hold in period just after World War I. For physicians, by Apple's account, this authoritarian approach did not really represent a change of tone from previous eras—doctors had assumed, and continued to assume, the correctness of their advice and had consistently taken the perspective that their advice should be followed exactly throughout the late nineteenth and early twentieth centuries. What seems to have changed is the increased complicity of mothers in recognizing physicians as the primary or sole source of accurate motherhood advice.

Since it was not the rhetoric of doctors that changed, what new factors contributed to the increasing deference of mothers? Apple (2006) identifies several sources as contributing to this gradual physician dominance. Mass media at the time gave considerable publicity to medical breakthroughs that improved child or maternal health.

These media accounts tended to “glorify” physicians (Apple 2006, 37). The generally poor state of child health in the United States became a much more active political issue in the first quarter of the twentieth century, resulting in political attempts to identify causes and correctives—public health officials eagerly sought explanations, and physicians were eager to supply them (Apple 2006). Apple and others have identified increasing urbanization and immigration in the United States as significant contributors to this increasing politicization of the condition of children: conditions did deteriorate with increased crowding and poverty, poor urban conditions were more visible to more people, and the disadvantaged people identified lack motivation and political clout to resist public health intrusions. National self-defense arguments seem to have been successful at making child and maternal health a political issue across cultures. Government concerns about the poor condition of its young citizens as potential soldiers seems to have been a major motivation toward government involvement in child public health both in the United States (Apple 2006) and, even earlier, in the United Kingdom (Oakley 1984).

In the first quarter of the twentieth century, an important shift in social attitude took place in which the *social* nature of problems of child and maternal health became the broad-based but *individualized* problems of poor mothering (Apple 2006). It is tempting to attribute this individualizing of the problems of motherhood to the economic and political advantages that accrued to physicians and politicians who adopted it. Apple does not make this attribution, perhaps in part because this individualized definition of the problems of and solutions to child and maternal health was not just a product of doctors and politicians—middle class mothers were also enthusiastic proponents as well,

and not because it said they were already doing things right. Apple notes that this individualized definition of the problem fit well with educational solutions, and middle class mothers produced a high demand for classes and texts providing prenatal and childcare information.

Apple (2006) contends that “scientific motherhood was not a single ideology or practice” (87), but to understand this correctly, it is important to place the emphasis squarely on the “single,” for it is clear that scientific motherhood was definitely a world organizing set of beliefs and that it promoted certain behaviors in mothers and discouraged other behaviors. Throughout her account, Apple gives examples of how various mothers interpreted the scientific approach differently. Many of these individual differences centered around how exclusively and exhaustively a some mothers might follow the dictates of a particular chosen expert, while other mothers sought out many different sources of information and mixed these with the results of their own observations and “experiments” (Apple 2006, 83, here quoting from Ruth Thompson’s 1929 child care book, *Training My Babies*).

Apple notes that during the period between the World Wars, medical authority (with some influences from psychology, especially in the form of behaviorism) clearly established itself as dominant within American child and maternity care. In the mid-1940s, however, medical (and, to a lesser degree, psychological) authorities themselves began a very public debate over how best to raise children. Several prominent psychologists and physicians published childcare books advocating less rigid approaches to parenting and the importance of maternal self-confidence and judgment to positive parenting outcomes. None of these books sought to displace the importance of expert

opinion for obtaining optimal prenatal care or childrearing—in fact, all of these new experts, include the most famous, Benjamin Spock, continued to advocate the absolute necessity of intimate involvement of physicians in all aspect of prenatal and early childhood care. But these newer, less authoritarian experts each subtly increased the importance of the mother's own observations and opinions within the parenting enterprise—in many ways bringing mothers back to something approaching the prominence they had enjoyed in the early phases of scientific motherhood before World War I. Apple explains mothers' continuing reliance on texts for motherhood advice with many of the same reasons she gave for the initial rise of scientific motherhood in the late nineteenth century, especially the high social mobility after World War II that made it difficult for mothers to establish peer or family networks that might serve as alternative sources for information. Apple also mentions that the post-World War II advisors who advocated more flexible parenting had all themselves at least been exposed to Freudian theories in their professional training. These authors rarely or never mentioned Freud in their own advice texts, so it is unclear whether the exposure to Freudian thinking is supposed to account for a generally more humanistic approach to children or whether Freudianism simply provided a general alternative to behaviorism and so promoted less rigid and dogmatic approaches.

Apple (2006) sees Benjamin Spock as a central figure in this transformation of scientific motherhood. From World War I through World War II, scientific motherhood was intensively authoritarian and physician-dominated. In its current configuration, however, motherhood is still largely within the purview of medical expertise, but mothers play significantly more active roles in gathering information, balancing options, and

making decisions. Spock's major text, *The Common Sense Book of Baby and Child Care* (1946), distinguished itself from competing childcare books with its direct address to readers and its friendly, somewhat casual, authoritative but not authoritarian style. Almost forty year later, these same characteristics helped to differentiate Eisenberg, Murkoff, and Hathaway's 1984 pregnancy advice book, *What to Expect When You're Expecting,* from its competition. As the names of the two texts suggest, *Baby and Child Care* and *What to Expect* focus on different life stages, with only a slight overlap. Both, however, have been extremely successful in the book marketplace, with the various editions of each resulting in sales of over fifty million copies of *Baby and Child Care* (Apple 2006) and over fourteen million copies of *What to Expect* (Murkoff and Mazel 2008).

Apple describes the current state of motherhood advice as still centered on science and medicine as the principle sources of authoritative information, but as now including mothers in central roles for information gathering and decision making. She believes that organized medicine has become convinced that it is in its own best interest to develop educated mothers who exercise significant control over health care choices and who, as a result, share some of the responsibility for outcomes. Science and, especially, medicine have defined the perspectives on pregnancy and childcare to the extent that the increased education of mothers is likely to make mothers more, rather than less, involved in the medical perspective. Good mothering, in its contemporary meaning, means an active, discriminating mother, but the choices among which she is discriminating are options produced by science and more within than outside the medical perspective. Apple feels that this outcome, in a manner similar to how she described the state of affairs at the

beginning of the twentieth century, is due in large part to the successes of medical sciences in improving maternal and child health. Many medical advances, Apple notes, have served to significantly reduce acute illnesses in childhood and have led to increased attention to more chronic conditions. Such longer acting disorders, Apple believes, give the patient more time to consider a variety of treatment options, inviting alternative explanations and actions with which organized medicine has to compete. Apple believes that doctors recognize this and realize that they have little choice but to acknowledge the patient's decision-making power. It seems also reasonable to assume that, as doctors identify chronic or "lifestyle" related health factors, influencing these factors might require a significantly higher level of day-to-day cooperation from the patient over a much longer period than would treatment of more acute illnesses. Inspiring such patient cooperation might require a different, less authoritarian, type of doctor-patient relationship—and a good deal of self-discipline and self-surveillance on the part of patients. This brings us to the self-surveillance friendly pregnancy advice book, *What to Expect When You're Expecting*.

What to Expect When You're Expecting (Eisenberg, Murkoff and Hathaway 1984)

During the summer of 1984, the year *What to Expect When You're Expecting* was published, Edwin McDowell, then in the early stages of what would become a twenty-six year reporting career at the *New York Times*, published a brief article, "Books Are Proliferating on the Care of Children." In it, he documented the highly competitive market in motherhood and parenting books. With more than one thousand titles in print in that broad category, these books give indirect evidence that demand was high for information and advice. But this plethora meant that new books faced a significant

struggle to get noticed. To find a place in such a crowded genre, any new motherhood book needed "a new angle," as McDowell quoted one editor.

Pregnancy advice books were a small but significant part of the parenting and childcare category. Many books within the "pregnancy" subcategory focused specifically on childbirth (McDowell 1984), so books like *What to Expect*, that provided general information about the whole course of pregnancy and fetal development in addition to birthing information, occupied a still smaller slice of the motherhood books market.

Still, as several of the critics discussed above regarding medicalization argue, pregnancy advice books represent an important theatre in the battle for the hearts and minds of American mothers. It is less clear whether these books represent actual weapons in this battle, texts capable of molding a particular mother's way of looking at herself, her pregnancy, and her developing fetus, or whether it might be more accurate to see these books as battlefield reports, advising us on the perspectives mothers who purchase them already hold on pregnancy. We are without clear before-and-after studies of the effects of "exposure" to the different pregnancy advice books. As *advice* texts, many mothers are likely to be approaching these books to learn something, so, in that regard, the books are likely to *influence* at least some of their readers' thinking and behavior. But these books also have to present something that is attractive and/or engaging to their readers or purchasers in order to establish a marketplace position or reader engagement.

Most surveillance scholarship places considerable emphasis on the empowering effects of the surveillant position. However, the watching by itself (as with data gathering more generally) does not always make the watcher more powerful, comfortable,

or knowledgeable. While regularity of watching is an important hallmark of surveillance, just as important to the empowering effects of surveillance is the fit of the gathered data into an action plan. The surveillant must be able to make some sense of the data being gathered and that information must fit into some plan that also makes sense to the watcher. The surveillance then empowers the surveillant to the extent that the plan of action produces benefits for the surveillant. Without these two additional conditions, data sense-making and a fit of data to action plan, the effects of information produced by routine watching can range from useless to anxiety-provoking. Most data-encryption security measures, for example, function not by making the flow of data invisible, but by rendering the data flow meaningless to those without the proper de-encryption keys. Without this sense-making step, observing a flow of data is usually useless. Even more unsettling, perhaps, are the effects of watching events unfold whose meanings we understand clearly, but whose outcomes are hurtful and whose course we have no power to change. Even when data can be captured and understood, it must fit into a desirable plan of action if the watcher is to be empowered by the watching.

In many important ways, the pregnant woman is in this position of a conscripted watcher, for she will be subject to many months of proprioceptive sensations over which she may often feel she has little control and for which her life experiences may offer little in the way of explanation. But in most instances the mother-to-be does not have the option of not watching, as the "subject" of her surveillance at the very least moves with her and in many cases is her.

The pregnant woman, then, is highly motivated to try to effect the conditions that will put her in the empowered surveillant position—to be able to make sense of the "data"

she is “observing” (that is, her own bodily experiences) and to fit this data into a plan of action that produces some sort of benefit.

Pregnancy advice books, and the body of medical-scientific knowledge and practices that underlie most of them, speak precisely to this motivation. They offer the pregnant woman a sense-making understanding of her bodily experience and help the woman to fit this understanding into a plan of action with a clear goal—most often the production of the healthiest possible child.

Back in Chapter One, surveillance was defined as purposeful, routine, systematic, and focused data gathering. The purposes such data gathering might serve listed, in a rather abstract and general way, a number of functions which can now be seen, in the specific case of the pregnant woman, as directly relevant to the woman’s goal of maximizing the likelihood of a positive outcome for her fetus and herself: control, protection, influence, and management. *What to Expect When You’re Expecting* encourages and directs the pregnant woman to organize her bodily experiences into purposeful, routine, systematic, and focused data gathering, while the theories and practices of the medicalized perspective give this data its role in the service of the woman’s control, protection, and influence goals. Several of the critics we have discussed would contend that medical practitioners gain more control and influence than mothers do.

What to Expect directs, encourages, and normalizes self-surveillance in pregnancy by its organization, its tone or form of address, and its specific themes and content.

Organization

One of the significant innovations of *What to Expect* that differentiated it from most of the pregnancy advice books that preceded it is its organization into chapters centered on month-by-month developments throughout the course of pregnancy. This organization encourages the reader to consult the text on a routine and regular basis. Each month's chapter in *What to Expect* brings a new set of descriptions, concerns, and explanations, encouraging the pregnant woman to use this data to understand her own experiences and to compare her experiences to these descriptions. Both of these activities encourage regular and detailed attention to the pregnant woman's own thoughts, feelings, and bodily sensations. This month-based approach may seem now like a logical, perhaps even an unavoidable, way to organize a book on pregnancy, but if you have that reaction, it is due in part to *What to Expect*'s success. While most of the pregnancy advice books now do follow in chronological detail the changes the pregnant woman experiences at different stages of pregnancy, before *What to Expect* most pregnancy advice books were arranged by themes or subjects of concern.

What to Expect's more surveillant perspective can be seen clearly if we contrast it with another popular pregnancy advice book still available at the time of *What to Expect*'s introduction, one that essentially disappeared from the advice book market over the course of the 1990s, vanquished by the popularity of its more surveillant rival. *Eastman's Expectant Motherhood* (Russell 1983) was originally published in 1940 as *Expectant Motherhood.* It was revised regularly every seven to ten years afterward, several times by the original author, Nicholson J. Eastman, M.D., and on the last three occasions by medical specialists of younger generations (Keith P. Russell, M.D. in 1977

and 1983, and Dr. Russell and the University of Iowa's Jennifer Niebyl, M.D. in 1989). Although detailed sales figures within the pregnancy advice genre are not available, reliable personal reports (Niebyl, personal communication, 2009) and contemporary reviews indicate that *Eastman's* was a very popular pregnancy advice book. A review of the new third edition from 1957 observed, "Probably no other book on pregnancy has been read so extensively by people interested in babies as this one" (Treat 1957). Another reviewer called *Eastman's* "the most complete book of its kind" (Werch 1957). With its frequent updates and authoritative authorship, the decline of *Expectant Motherhood* cannot be attributed to any failures to supply its readers with the most accurate obstetrical knowledge. In fact, a close reader of both texts cannot help but be impressed by how similar the overall content is in both texts, even if their organization and presentation is significantly different.

The chapter titles in *Eastman's* clearly illustrate its topic-based focus:

1. Signs and Symptoms of Pregnancy
2. Growth and Development of the Fetus
3. Visits to the Physician
4. Normal Psychological Changes in Pregnancy
5. Nutrition and Health in Pregnancy
6. Pregnancy and Weight Gain
7. Common Discomforts and Their Treatment
8. Danger Signals
9. Preparations for the Baby
10. Alternatives and Methods of Childbirth

11. The Birth of the Baby
12. The First Weeks After Childbirth
13. The Newborn Baby

Note the similarities and differences with the chapter titles from *What to Expect*, which bookends its month-by-month presentation with similar topical discussions:

1. Are You Pregnant?
2. Now That You Are Pregnant
3. Throughout Your Pregnancy
4. The Best Odds Diet
5. The First Month
6. The Second Month
7. The Third Month
8. The Fourth Month
9. The Fifth Month
10. The Sixth Month
11. The Seventh Month
12. The Eighth Month
13. The Ninth Month
14. Labor and Delivery
15. Postpartum: The First Week
16. Postpartum: The First Six Weeks
17. Fathers Are Expectant, Too
18. Preparing For the Next Baby

As a male reader whose only experiences of pregnancy are second hand, the first impression is that the chapter titles in *Eastman's* provide a much clearer guide to what is contained in the chapter than do the titles from *What to Expect*. This impression is key to understanding the different effects the two texts have on the reader. *Eastman's* is organized and presents itself much more like a traditional reference work. If the reader has a specific and clearly articulated area of concern, such as "pre-term labor" or "fainting," the *Eastman's* chapter headings guide you to these subjects much more clearly. But such an organization is a step removed from, and an abstraction of, the lived first person experience of pregnancy. *What to Expect*'s monthly organization accompanies the woman through the progression of the pregnancy, becoming a companion throughout the process, offering a para-social relationship in contrast to *Eastman's* reference function. The pregnant woman's high level of attention to her own bodily sensations is both encouraged and normalized by the text's organization.

Within each of *What to Expect*'s monthly chapters, information is organized across headings of "What You Can Expect at this Month's Checkup," "What You May Be Feeling," "What You May Look Like," "What You May Be Concerned About," and "What It's Important to Know." (Note here also the frequent use of the conditional—we will discuss in detail the functions of tone and form of address in *What to Expect* in the next section.) These sections convey specific medical information very similar in content to that of *Eastman's*. Both *What to Expect* and *Eastman's* include a comprehensive index at the end of the book, so specific topics can actually be located easily in both texts. *What to Expect* presents its information as concerns linked to the pregnant woman's reality of the moment, the status of her body at the time of the reading. For the majority

of readers, who appear to be highly satisfied with the book, even those who "read ahead" to portions of the book dealing with what pregnancy will be like in the future, the book becomes a bedside companion consulted and re-consulted regularly throughout the pregnancy. This companion status gives the text a powerful role in directing and organizing the woman's perceptions not just in an abstract or general way, but as they are lived in the moment.

Each monthly chapter provides information specific to the most common pregnancy experiences of that month, though most sections have include a mild, informal disclaimer noting that there can be significant individual variations. In chapter six, "The Second Month," for example, the section "What You Can Expect at this Month's Checkup," prefaces its list of tests and exam procedures with

> If this is your second exam, you can expect your practitioner to check the following, though there may be variations depending upon your particular needs and your practitioner's style of practice… (107)

Each month's list of notable physical and psychological experiences in the section entitled, "What You May Be Feeling," is preceded by some variation of the statement also found in chapter two.

> You may feel all of these symptoms at one time or another, or only one or two. Some may have continued from last month, others may be new (107).

Statements such as these allow for significant reader variations from the monthly experiences described in the book without a break in the empathetic bond between text and reader—the reader can be experiencing a wide range of sensations and still continue to feel that the text is synchronous with her subjectivity.

The longest section in each of the monthly chapters is entitled, "What You May Be Concerned About," and appear as a series of topic headings followed by a question-

and-answer format. Questions present as quotations in the first person, giving the reader the experience of reading a transcript of her own discussion with the author. Within each month, the questions appear to have a random arrangement—questions with more serious medical implications for mother or fetus mix with questions related to personal appearance, annoying but temporary physical sensations, and the social aspects of pregnancy. This presentation (along with *What to Expect*'s rhetorical tone and form of address) produces the effect of a genuine, relaxed conversation between an observant reader (the pregnant woman) and the knowledgeable author, a conversation in which whatever comes to mind can be discussed. The subject headings from the "What You May Be Concerned About" section of chapter nine, "The Fifth Month," are typical of this mix of topics:

Fatigue

Fainting and Dizziness

Sleeping Position

Backache

Late Miscarriage

Abdominal Pain

Fast-Growing Hair and Nails—and Red Palms

Changes in Skin Pigmentation

Dental Problems

Travel

Wearing a Seat Belt

Sports

Eating Out

Motherhood

Once again, I am not concerned here with the information content of these sections, which, in most cases, is not significantly different from information contained in many rival texts such as *Eastman's*. What I wish to highlight is how *What to Expect*'s particular organization, tone, and form of address combine to produce a particular type of reading experience. The text manages to be at the same time detailed, intimate, approachably informal, yet still authoritative and far-ranging. This encourages both an attachment to the text and the woman's own regular self-scrutiny as part of this relationship to the text. *Eastman's* also includes a somewhat less detailed section on "Traveling" in its chapter five, "Health and Nutrition in Pregnancy." Since the advice in both *Eastman's* and *What to Expect* can be located easily by searching for "travel" in the book's index, does it really matter where the information is placed? Is something particular gained by *What to Expect*'s identifying travel as a fifth month concern for the pregnant woman?

This organization (in addition to the text's tone and form of address) places travel concerns within the ongoing, lived context of the pregnant reader's experience. The advice becomes an offer of a timely discussion, linked to specifics of the reader's current bodily condition, rather than a series of points communicated in reference book fashion. Fetal movement is most commonly first experienced in the fourth or fifth months of pregnancy, so *What to Expect* contextualizes travel concerns as part of a series of constructions the pregnant women is forming of the fetus as a distinct entity/identity. This organization also encourages the pregnant woman to think about travel not just in

relation to pregnancy but within the development of her growing identity as a mother and family member. In addition to timely and relevant concerns about her own comfort and fetal safety, *What to Expect* notes that "travel during the midtrimester is not only safe, but the perfect chance to get away with [your] husband for a last fling (at least for a while) as a twosome…. [I]t'll certainly never be as easy to vacation with your baby again" (156). *What to Expect* links, and encourages its readers to link, proprioceptive data with ongoing socio-emotional concerns.

The contrast in tone and form of address between the discussions of travel during pregnancy in *Eastman's* and in *What to Expect* is perhaps even more revealing of the distinctive relationship each text establishes with its reader.

Tone and Form of Address

The largest section of each of *What to Expect*'s monthly chapters is entitled, "What You May Be Concerned About." The concerns are all "spoken" as quotes in the first person voice of an individual pregnant reader. This pregnant subject of the text voices a wide variety of worries. The text's respondent is notably conversational and supportive in tone. The pregnant worrier herself is never criticized for having the worry.

Note the difference in perspective assumed by the text's speaker in this advice about seat belt use, first from *Eastman's*, then from *What to Expect.* The advice offered by each text is very similar. *Eastman's* advice is offered with an air of objectivity, not unlike how a parent might speak to a small child. *What to Expect* links its advice to evidence in a way that makes the section appear to be both an effort to convince and advice—a conversation rather than a directive.

> When traveling by car, good safety precautions call for the use of a seat belt. Preferably this should be of the shoulder-harness type, especially later in

pregnancy. If only the lap belt is available, be certain that it is placed as low as possible, over the pelvic bone in front and on the sides when feasible (*Eastman's,* 95).

"Is it safe to fasten my seat belt in the car or on an airplane?"

What's the major cause of death among pregnant women? Childbirth? Toxemia? Puerperal fever? Actually, none of the above. The most common way for a pregnant women to lose her life is in an auto accident. And the best way to avoid such a fatality—as well as serious injury to you and your unborn child—is to always buckle up… For maximum safety and minimum discomfort, fasten your belt below your belly, across your pelvis. If there is a shoulder harness, use it. And don't worry about the pressure of the belt in a short stop will hurt the baby—he or she is well cushioned (*What to Expect*, 158).

As a broader sample, here are the questions from the "What You May Be Concerned About" section of chapter eight, "The Fourth Month."

"My doctor said my blood pressure is up. Should I be concerned?"

"At my last office visit the doctor said that there was sugar in my urine. She said not to worry, but I'm convinced I have diabetes."

"A friend of mine became anemic during pregnancy. How can I tell if I am, and can I prevent it?"

"My nose has been congested a lot and sometimes it bleeds for not apparent reason. I'm worried because I know bleeding can be a sign of illness."

"My allergies seem to have worsened since my pregnancy began. My nose is runny and my eyes tear all the time."

"I've noticed a slight vaginal discharge that is thin and whitish. I'm afraid I have an infection."

"I haven't felt the baby moving yet; could something be wrong? Or could I just not be recognizing the kicking?"

"I felt little movements every day last week, but for the last few days I haven't felt a thing. Could something have gone wrong?"

"I get depressed when I look in the mirror or step on a scale—I'm so fat."

"Now that my abdomen is swelling, the fact that I'm really pregnant has finally sunk in. Even though we planned this pregnancy, I suddenly feel scared, trapped by the baby—even antagonistic toward it."

"Now that everyone can see I'm pregnant, everyone—from my mother-in-law to strangers on the elevator—has advice for me. It drives me crazy."

A direct address, second person response, usually between one-half and one page in length, follows each question. The frankly stated, explicit content has an immediacy, relevance, and intimacy. The respondent answers in a relaxed and reassuring way. Responses mix scientific/medical information and behavioral and psychological advice, with the exact balance tailored to the nature of the specific question. Focused medical concerns, such as the question about blood pressure noted above, are followed by responses with a great deal of medical information and advice on symptoms, often advice on which symptoms should prompt the woman to consult her doctor quickly. As medicalization critics have noted of its genre generally, *What to Expect* both overtly and covertly supports the medicalized understanding and management of pregnancy. The text places symptoms in a scientific-medical context, and assumes, normalizes, and encourages reliance on medical professionals.

As this sample shows, *What to Expect* deals with the pregnant woman's experience quite explicitly, engaging with the intimate physical details of the pregnancy in an ongoing way. The text tries establish a tone of address to the reader in which it is

accepted as authoritative without appearing to be authoritarian. If achieved, this position would allow its reader to obtain comfort from the text's supportive pronouncements and have confidence in the text's advice without also feeling "one down" or disempowered—a tricky rhetorical balance.

One technique that *What to Expect* uses to try to avoid the authoritarian position is a frequent use of the conditional. Chapter subheadings are often employ the word "may" to allow for significant reader variation from the described experience ("What You May Be Feeling," "What You May Be Concerned About," etc.). The text frequently reiterates that wide variations in pregnancy experiences are still to be considered within the normal range and should themselves not be cause for concern. This also means that significant discrepancies from the text's descriptions can be rhetorically included within the text's construction of the course of pregnancy. So a particular reader's own experience can be significantly different without giving her cause to discount the accuracy of the text.

These active efforts to avoid the appearance of establishing an authoritarian authorial position are necessary in part because the text does give quite a bit of direct, explicit advice about how the woman should behave in a number of areas. The second most frequent criticism of *What to Expect*, after the complaint that the text as whole increases anxieties about pregnancy, is that the text is "bossy." The text's authors voice sensitivity to this issue—remember, in the book's introduction, Heidi Murkoff mentions that one of their reasons for writing the book was the "alarming" and dictatorial ways that previous pregnancy advice books had discussed pregnancy symptoms and fears. The authors' rhetorical tactic to avoid the dictatorial position is often to link advice to examples from statistics or research findings (without source citations) and to link the

offered directives to the shared goal between author and reader of the maximally healthy offspring. Another approach is to include instances in which the reader may fail to follow the text's advice within the range of behavior prescribed as medically necessary for optimal outcome under certain conditions. For example, *What to Expect* provides a lengthy section on exercises in pregnancy (in chapter nine, "The Fifth Month"). This portion ends with a small item headed, "If You Don't Exercise." Note how the text seeks to maintain its affiliation with the reader who may have rejected the detailed advice it has just presented.

> Exercising during pregnancy can certainly do you a lot of good. It can relieve backaches, prevent constipation and varicose veins, … But sitting it out (whether by choice or by a doctor's prescription), … won't do you or your baby any harm. In fact, if you're abstaining from exercise on doctor's orders, you're helping, not hurting, your baby and yourself (169).

At many places such as this one, the para-social companion/advisor preferences relationship maintenance (between the mother-to-be and the author) over advice compliance.

Content and Values

What to Expect weaves emotional and existential concerns throughout its depictions of the course of pregnancy (for example, "sexual desire" (chapter seven, "The Third Month"), "appearance" and "reality of pregnancy" (chapter eight), "motherhood" (chapter nine), "dreams and fantasies" (chapter eleven). *Eastman's*, as a representative of the approach of many previous pregnancy advice books, includes a single five and one-half-page chapter on "Normal Psychological Changes in Pregnancy." Fatigue and uncertainty are mentioned in a general way in the *Eastman's* text, but the possibility that a woman might experience misgivings about the motherhood role more generally is never

acknowledged. In organization, tone, and content, *Eastman's* provided clipped prescriptions rather than extended discussions.

Across the responses to the socio-psychological problems posed throughout *What to Expect,* a clear set of values—preferred attitudes, beliefs, and behaviors—emerge. Four specific values are especially overt: (1) The pregnant woman's energetic self-assertion of her own judgment, (2) the maintenance of a continued focus on the primary goal of production of a healthy fetus in the face of distractions or temptations, (3) a reliance on science-based practices and a rejection of "pregnancy mythology" (139) that strays from scientific findings, and (4) when possible, a maintenance of affiliation and socially appropriate behavior, insofar as this can be accomplished within the bounds of maintaining standards (1)-(3). Values (2)-(4) could easily come into conflict with value (1). Values (2)-(4) will in many cases direct or prescribe what the woman's "own judgment" of value (1) should be.

While every response does not illustrate all four values, the following extended excerpt (from the response to the question in chapter eight about how to handle unwanted advice) does show all four, as well as how the author tries to interweave and balance the four values:

> Between such gratuitous advice and the inevitable predictions about the sex of the baby, what's an expectant mother to do? First of all, keep in mind that most of what you hear is probably nonsense. Old wives' tales that *do* have foundation in fact have been scientifically substantiated and have become part of medical practice. Those that do not, though still tightly woven into the tapestry of pregnancy mythology, can be confidently dismissed. Those recommendations that leave you with a nagging doubt—"What if they are right?"—and are therefore impossible to dismiss are best checked with your doctor, nurse-midwife, or childbirth educator. [value 3, scientific practice, and value 1, self-assertion]
>
> Whether it's possibly plausible or obviously ridiculous, however, don't let unwanted advice get your dander up. Neither you nor your baby will profit from the added tension. [value 2, maintain primary focus] Instead, keeping your sense

> of humor handy, you can take one of two approaches. Politely [value 4, maintenance of affiliation and appropriate behavior] inform the advice-giver that you have a trusted physician who counsels you on your pregnancy and that you can't accept suggestions from anyone else. [values 3 and 1] Or, just as politely, smile, say thank you, [value 4] and go on your way, letting their comments go in one ear and out the other—without making any stops in between. [values 2 and 1]
>
> But no matter how you choose to handle unwanted advice, you'd also do well to get used to it. [values 2 and 4] If there's anyone who attracts a crowd of advice-givers faster than a pregnant woman, it's a woman with a new baby (139).

While *What to Expect*'s overall structure, especially its presentation of an extreme self-focus and detailed attention physiological concerns, both instructs and normalized the pregnant woman's self-surveillance, the text's content also explicitly argues that self-surveillance is an expectable, normative, and even useful part of pregnancy. The book's Foreword, by Richard Aubry, M.D., even while it implicitly foregrounds the importance of organized medicine in the production of healthy babies, also emphasizes the mother's active role.

> To those of us in academic medicine it is becoming increasingly clear that superior doctors and superior equipment aren't enough. Further reductions in pregnancy and childbirth risks will require actively participating expectant couples as well… The need for a book that provides accurate, up-to-date, and medically sound information… has long been apparent. Now, I believe, that need has been met in a highly practical, readable, and eminently practical month-by-month format. … They [the authors] have wisely concentrated on giving expectant parents the information that will allow them to intelligently play their central role in the entire process… (13-14).

From the book's first chapter ("Am I Pregnant?"), the text defines active and detailed observation as vital aspects of the pregnant woman's functioning.

> When something you think worth mentioning crops up between visits, put it on a list that you take with you to your next appointment. (It helps to keep a few lists in convenient places—the refrigerator door, your purse, your desk at work, your bedside table—so that you'll always be within jotting distance of one.) That's the only way you can be sure that you won't forget to ask all your questions and report all your symptoms. (28)

From the section in chapter two ("Now That You Are Pregnant") entitled, "Reducing Risk in Any Pregnancy,"

> … But just as important as having a good doctor is being a good patient. Be an active participant in your medical care—ask questions, report symptoms—but don't try to be your own doctor… (52)

Self-surveillance is the adaptive and responsible response to the worries and anxieties that arise during pregnancy. This excerpt from chapter five, "The First Month," illustrates how the text links self-attention, and the correct use of data gathered from this activity, to positive pregnancy outcome.

> If new problems come up while you're pregnant, don't ignore them. Even if you've noticed symptoms which seem relatively innocuous, it's more important than ever to consult with your physician promptly. Your baby needs a *wholly* healthy mother (106, emphasis in original).

Each monthly chapter also includes a line drawing of a naked female torso with the area around the reproductive organs made transparent. Titled, "What You May Look Like," this nominally serves the function of illustrating fetal development at each monthly stage. This interest in fetal development begins, however, with the pregnant woman's attention to and interest in her own outward appearance (i.e., "what you may look like"). The illustrations blend perspectives toward the pregnant body, as if the woman's viewing herself simultaneously from the surface and as a collection of selected internal organs is a natural part of the pregnancy experience. The pregnant woman's link to the developing fetus is through the route of what she sees of her own bodily changes—self-observation is seamlessly linked to fetal observation. (As noted above, another text section, usually located just adjacent to these illustrations, details "what you may be feeling.")

What to Expect's self-surveillance training function uses two distinct steps. First, statements explicitly construct the woman's detailed and routine focus on herself and her bodily sensations as both normal and desirable. The text offers explanations of and suggestions for potential bodily observations (symptoms). Second, the text instructs the woman about what to do with her self-observations, providing model action plans for the data generated by self-surveillance. This latter step is important for this study's investigation of the conditions under which surveillance increases rather than relieves anxieties. *What to Expect* offers knowledge about the meanings and implications of bodily observations and plans which fit these observations and meanings into broader plans of action in the service of the overall goal of optimizing fetal well-being. It also explains to its pregnant reader that self-watching unconnected to knowledge and action plans can be a significant source of anxiety. *What to Expect* manages to both advocate for and direct the pregnant woman's self-observations, while also advocating for and directing both how this collected data should be interpreted and the actions the pregnant women should take based on these interpretations. By combining this attention to self with interpretive strategies and action plans, *What to Expect* serves as a training manual in self-surveillance for mothers-to-be. It provides a vital first association linking self-surveillance and reflexivity to control during an especially anxiety provoking stage of family life.

Readers Respond to *What to Expect*: Reviews on Amazon.com

Making judgments about readers from the content of texts, whether we consider these to be "text effects," reflections of some pre-existing reader trait, or the result of an interaction between text and reader, is even more complex in the case of pregnancy

advice texts because the overt readership target, pregnant women, is sometimes not the book purchaser. As can been seen in the "customer reviews" of *What to Expect* and similar books posted on commercial sites such as Amazon.com, and as noted by Copelton (2004), many pregnancy advice books are received by women as baby shower presents or, perhaps more intriguingly in light of their functions as postulated by medicalization critics, as giveaways from obstetricians.

The customer reviews on Amazon.com represent an especially rich source of readers' responses to *What to Expect* because they present a wide variety of responses that suggests that reader reactions to the book are not uniform. These responses must be interpreted cautiously, especially if we are hoping to draw conclusions about the book's role and impact during its first few years of publication (i.e., the mid- and late-1980s). They represent the public expressions of a self-selected, non-random group of readers responding to the third and fourth editions of *What to Expect* from a contemporary context, some twenty-five years removed from *What to Expect*'s initial publication. (The oldest Amazon reviews are from 1996.) Undoubtedly many aspects of how pregnancy is experienced have changed in those twenty-five years, and *What to Expect* has inspired a significant number of competitors in the pregnancy advice book genre, so the context in which *What to Expect* is judged by its readers in relation to competing books is considerably different now than in 1984. So while I do not wish to argue that contemporary reader reviews on Amazon.com are strictly representative of how women responded to *What to Expect* when it was first published, these reviews do provide an available source of the diversity of responses possible to this pregnancy advice text. I will discuss again, at somewhat greater length, some of the limitations of

using website-posted reviews as a gauge of user responses in chapter five, where I employ a similar methodology to gleen information about use and reactions to baby monitors. Web responses present significant problems of interpretation, some inherent in any convenience sampling method.

What to Expect's publisher, Workman, did not anticipate it success. Its initial print run was only 6800 copies, but its sales accelerated rapidly and, by 1990, it had sold more than 1.3 million copies and had begun to appear regularly on the *New York Times* bestsellers' list (McDowell 1990). It has maintained a dominant position in this market and is currently (December, 2009) the only non-fiction title on any aspect of motherhood on any *New York Times* bestsellers' list[2].

The third (1996) edition of *What to Expect* was the last by the three original authors—the lead author, Arlene Eisenberg, died in 2001—and is the oldest edition with customer reviews on Amazon.com. It collected just over 1,000 reviews beginning in 1996 before it was replaced by the fourth edition in 2008. Amazon.com customer reviews rate each book on a system of 1-5 stars (with "5" being best), followed by rater comments, some of which are quite detailed. Customers who purchase a text from Amazon.com receive a solicitation by email to write a review, but you do not have to buy the book from Amazon to place a review on the site. Each review can itself be voted on by visitors to the site—visitors may click on either "yes" or "no" to the question, "Was this review helpful to you?" that appears at the end of each review. This "review of the review" feature is virtually the only check on these reviews. Amazon employs a few of its own labels to some reviewers as additional authority establishers. Amazon has

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[2] *New York Times*, December 11, 2009,
http://www.nytimes.com/pages/books/bestseller/index.html

recently begun to identify reviews from its own customers as "Amazon verified review" (although it did not begin this practice during the time of the third edition of *What to Expect*), while reviews from frequent contributors to the site as a whole are label "a top 1000 [or "500," "100," etc.] reviewer." It is unclear if these labels produce more or different attention to these reviewers' comments. Amazon reports that customer reviews can be removed if the content is deemed "inappropriate," as detailed in the site's user agreement, but the reviews and the reviewers do not appear to be otherwise vetted.

Because of the self-selected, non-random nature of the Amazon.com reviews, it is safest not to consider them a statistical sample of the reactions of *What to Expect* readers—the conventional wisdom that only individuals with strongly positive or negative reactions will be motivated to express their opinions in public seems to have significant validity here. Reviewers sometimes respond to points in other reviews with which they strongly agree or disagree, so it is clear that many reviewers have some sense of audience or community and view these reviews as advice to others in similar circumstances. While the particular characteristics of *What to Expect* that reviewers single out for praise or condemnation are unique to that text and give us helpful insights into the text's reader effects, this bi-modal distribution of significant positive and negative reader reactions is not unusual for books in the pregnancy advice category on Amazon.com. (The same is not true across all product categories. For example, posted consumer opinions are much more uniform, whether positive or negative, on baby monitor models.) Pregnancy appears to be a time during which many women are highly motivated both to share advice and to express disagreement when they feel the advice of others is mistaken. The sentiments posted May 29, 2003, by "A Customer" in her review

of the 1995 pregnancy advice book, *The Girlfriend's Guide to Pregnancy*, by Vicki Iovine, are repeated in different ways by many reviewers in this genre: "I have never written an Amazon review before, but I was so annoyed by this book that I had to write one…".

The negative reviews of *What to Expect* tend to center on several major points: its endorsement of an excessively medicalized approach to pregnancy, its form of address to the reader, and its anxiety-producing effects.

Excessive Medicalization

Echoing similar points put forth by academic critics, many of the less favorable reviews also criticized *What to Expect* for excessive deference to and endorsement of a standard medical approach to pregnancy and delivery care. As noted above, medicalization is a particularly sensitive issue for contemporary parents for several reasons. It calls into question the parents' roles as ultimate authority, since it implies the parent is deferring to medical professionals not only to make decisions about a particular pregnancy but also in terms of how pregnancy itself is constructed more generally in the minds of parents. Medicalization critics contend that medical professionals define which processes, problems, and solutions are given attention, so that ways of looking at pregnancy, or care options outside the bounds of standard medical thinking, are actively excluded or not even seen. However, a basic characteristic of late twentieth century, more reflexive parenting is an awareness, even if it is only a vague awareness, that in most cases one cannot know all relevant data and that decisions have to be made with this awareness that these "unknowables" might become visible at a later date. Medicalization critics argue that parents are in some important ways convinced out of this awareness of

the inherent limitations of any particular perspective and into accepting the medical profession's construction of pregnancy as true (full stop) rather than as only "the best we can do at the moment," or "one profession's opinion." An alternative explanation to that offered by medicalization critics of this same circumstance is possible. Beck, Giddens, and other theorists of reflexive modernity all acknowledge that individuals experience significant anxieties as a result to this reflexive questioning of their own knowledge and understanding. Medicalized explanations seem to offer some certainty and security in the face of this reflexive questioning. This could easily account for parents' active attraction to and participation in medicalized understanding and management of pregnancy. So it is not simply a hegemonic imposition of a limited range of understanding by a powerful medical profession that results in the dominance of the medicalized perspective in American pregnancy, but an active collusion between medical professionals and patients that services the distinct needs of each group: medical professionals get power, prestige, and significant monetary compensation, patients get security and, in many if not all cases, improved likelihood of the delivery of a healthy infant (i.e., a reduction of certain risks). This is essentially Riessman's (1983) argument, without the references specific to mothers of the "dominant class."

Complaints that *What to Expect* endorses or supports medicalization are essentially the opposite sort of complaint to another type of comment from negative reviewers that the text has outdated information or that it gives advice without proper "scientific" authority. These latter sorts of complaints are, in essence, observing that *What to Expect* is not medicalized *enough*, that is, that it is failing to live up to the standards of practice and/or evidence as these systems operate within the medical science

approach to pregnancy. Complaints of *What to Expect*'s excessive medicalization say that the text supports this medical science approach too completely or too unquestioningly, removing important levels of doubt and limitation awareness that are characteristic part of reflexive parenthood.

Notice how "GadgetChick" and "trpir" both move quickly from complaints about *What to Expect*'s coverage of a specific medical procedure to the charge that this problem is symptomatic of the text's advocacy of a medicalized, passive, dependent role:

> I was amazed at the cavalier attitude towards c-sections. In many cases c-sections are done for the convenience of the doctor and/or hospital, NOT because it's best for the mother or baby. The book doesn't encourage women to take an active role in their prenatal care or make a comprehensive birth plan, or be vocal in any way about their treatment during pregnancy. The whole tone, once again, is "honey, you just git back in the kitchen and finish supper and don't worry your pritty little head about complicated stuff like this" ("GadgetChick," September 18, 2004).

> Sadly, there is little in it to empower a woman, to give her the confidence she should have in her own body to carry and birthe [sic] a baby. Clients who have been heavily influenced by this book almost always end up with epidurals and various surgical interventions - it is what they expect will happen. They tend to listen submissively and obey whatever anyone in scrubs tells them. They are far less successful with breastfeeding. When I read the book the first time, I didn't think it was so bad. But after noting the pattern of women falling right into a cascade of intervention, I re-read it. Then I saw the implicit assumptions that having a baby is almost impossible to do without medical help. It makes you wonder how the human race managed to survive so long ("trpir," August 23, 2005).

Other reviewers move straight to the medicalization charge against *What to Expect*, without bothering to provide illustrations, confident that fellow readers will immediately understand what this means about the text's defects:

> To me, the book is not much more than a sermon and as many others have said, it takes the most natural experience the world and makes it into a serious medical condition ("A Customer," May 16, 2003).

> If you have a textbook pregnancy, and believe that doctors are gods, then this is the only book for you ("A Customer," July 17, 1996).

Authorial Address

Contemporary middle class American parents often bristle when the line between their preferred tone of advice crosses over into something they perceive as dictation, which might presume to displace them from their roles as ultimate decision makers. Negative reviewers interpreted the book's many behavioral prescriptions and recommendations as dictatorial rather than consultative.

> I also disliked the "Do it our way or no way" attitude. Overall, I'd say this book created almost as much anxiety in me as it relieved ("A Customer," April 8, 1997).

> You will never be able to live up to this book. It made me feel like a complete failure, at only 6 weeks along! … I could not live up to this book's constant hectoring to think about "baby"… ("Winnifred," September 14, 2004).

Many reviewers criticize the authors for their hetero-normative (and essentially hetero-marital normative) approach to the social setting in which pregnancy occurs. This perspective led to a break in empathy with many readers.

> "What to Expect" may be fine for some, but I found it pretty exclusionary: if you are not married or heterosexual, you will look in vain for any reference to your life. And mothers-to-be, be warned--the book has a judgmental tone that can really hit you hard when hormones are at high tide. I couldn't breastfeed, and the chapter on breastfeeding made me feel like a child-murderer ("A Customer," December 9, 1997).

> The other thing I objected to in the book was the constant referencing of "husband," "father," etc. I am a heterosexual married woman but I have women friends who are lesbian mothers, friends who are single mothers by choice, etc. Where is their voice in this book? Not every woman has or wants a man to be their partner in pregnancy. And the tips for keeping your husband happy sound like paragraphs pulled verbatim out of some 1950s homemaking manual ("GadgetChick," September 18, 2004).

Some readers found the authors' intimate, informal tone, which creates a sense of connectedness with the authors for many readers, to be either condescending or lacking in authority.

> Having no scientific data and no relevant expertise on many of the matters discussed in the book certainly doesn't stop its authors from telling you that nearly everything in your life is unsafe for one reason or another. Virtually all of the modern hysteria associated with pregnancy can be traced back to this nightmarish excuse of a book ("Linda Musher," May 8, 2006).

> You might like this book if you are not a thoughtful person. For me, the more I read it, the more I hated it. It is very condescending and fear mongering. Much of the advice they give seems to be trying to justify the choices they made in their pregnancies… ("Nop nop," June 7, 2006).

A few of the negative reviews attacked all three of these points, criticizing the text for being simultaneously dictatorial, narrowly hegemonic, and unauthoritative.

> My advice to mothers to be and well wishing gift givers is to pass on this book. I found it to be insulting to my intelligence, lacking in truly or current scientific backing, and inattentive to the world that most women live in (one that requires a woman to work, especially at a job that she may find fulfilling.) Don't give the gift of guilt, don't give this book ("J. Black," February 21, 2006.

> This is absolutely, no holds barred, the worst pregnancy book available. Avoid it all costs. Not only is much of the information inaccurate the writing and organization are terrible, the author is condescending and pedantic. It's words and advice are geared toward making expectant moms feel frightened, stupid, and unable to make their own choices ("A Customer," January 13, 2000).

Anxiety-Inducing Effects

Heidi Murkoff, one of the co-authors of *What to Expect*, described in her introduction how her own anxieties about pregnancy where heightened by a lack of information, misinformation, or overly technical information about symptoms and potential problems during pregnancy. She stated a hope that their text would address

these deficiencies in the pregnancy advice book genre. From *What to Expect*'s introduction, entitled, "How This Book Was Born":

> I was pregnant, which about one day out of three made me the happiest woman in the world. And for the remaining two, the most worried…. Where could I turn to find reassurance that all would be well? Not to the ever-growing stack of pregnancy books piled high on my bedside table…. When my symptoms, problems, or fears *were* discussed, it was usually in an alarming way which only compounded my concerns…. But though a little worry is normal for pregnant women and their mates, a lot of worry is an unnecessary waste of what should be a blissfully happy time…. Thus, out of our concerns, *What to Expect When You're Expecting* was born. … [Murkoff, 15-16, in Eisenberg, Murkoff & Hathaway (1984)].

But the proper balance between too little and too much information appears to be a very personal one, as negative reviewers cite the book's comprehensiveness as an inspiration for excessive self-surveillance, and excessive anxiety as the inevitable result of such increased self-surveillance.

> The second chapter is titled "Now that you are Pregnant" and most of that chapter deals with "what you may be concerned about" which could also be titled "everything that could possibly go horribly wrong with your pregnancy" and it scared me half to death. I think it increased the amount of worrying I was doing exponentially (which couldn't have been a good thing!) ("Kelly-icce," October 7, 2000).

> As I read chapter by chapter I became more and more horrified that first time mothers actually believe the utter drivel contained in this book. Worse, they hold it as godspell. I don't think the authors intended harm but the recent upsurge in over-anxious, neurotic mothers must be directly attributable to this book ("Reasonable Person," October 23, 2005).

One of the few self-identified male reviewers of *What to Expect* warns of the difficulties increased self-surveillance may produce for those in the pregnant woman's social system.

> Guys ... consider this a warning; this will be the worst book that your significant other can read and will make your life utterly miserable for the next nine months. It may have been intended as a self-help guide but instead seems to act more as a

> bible for every worst-case scenario imaginable. After spending a few hours perusing this book's contents, your wife, girlfriend, whomever will become so overworked and paranoid that every little ache, pain, and irritation will become a sign of the baby being born with a forked tongue and three heads… I'm not going to stand here and pretend I know of a better source for information either, because (outside of ... oh I don't know ... a doctor) I don't. All I know is that if THIS is the definitive volume on the pregnancy experience, then God help us all… Again, for a first-time mom-to-be, who, frankly, is probably a bit nervous anyway about all the changes her body is going through, all this volume is going to accomplish is completely freaking her out ("Ron Sullivan," September 29, 2004).

What are we to make of a set of reviews that seems simultaneously to criticize the text for giving *too much* information (and inducing anxiety by arousing the possibility of highly unlikely scenarios) and for not giving *enough* information, or for not giving the information in a form that allows mothers-to-be to make their own informed choices? As I have noted, the authors themselves made similar criticisms of the books on pregnancy available before they wrote *What to Expect*, and gave the correction of these deficiencies as some of their main motives for writing the book.

The Amazon.com critics, many of whom are writing some twenty years after the book's initial publication, show evidence of the demands of reflexive parents. They want accurate information that allows them to make informed decisions about pregnancy. Risk assessment is a fundamental aspect of such decision-making, so information about prevalence and likelihood of lower frequency pregnancy problems is essential, and many mothers-to-be get angry when prevalence information is difficult to discern. They believe that medical science has much to contribute toward making pregnancy successful, but many of them bristle at the assumption that they must give up control and direction of their pregnancies in order to obtain the benefits offered by organized medicine. The criticisms presented here should also be understood in the context of the more numerous

positive reviews of *What to Expect*, which give virtually diametrically opposed interpretations of many of the book's same features. Positive reviewers note the text's helpfulness in helping mothers to deal with medical professionals on confident footing, by providing mothers with information that allows them to ask specific questions that make best use of their doctors' expertise. Many readers find the authors' tone of address warm and engaging and come to experience the text's voice as a comforting companion through the anxieties of pregnancy. Finally, many positive reviews note the book's helpfulness in explaining many of the pregnant woman's experiences and self-observations. Both positive and negative reviewers of the text on Amazon.com appear to find its surveillance inducing effects quite powerful.

Conclusions

In Nathaniel Hawthorne's 1850 novel *The Scarlet Letter,* Hester Pryne's display and embellishment of her scarlet letter allows the public to "read" Hester as an ongoing, lived text. Individuals in the community attribute a wide variety of meanings to this text, in the process revealing more about themselves than about the individual on which they opine. Pregnancy provides one of the few situations within contemporary, middle class American culture in which prohibitions about overtly gawking at and commenting upon an adult women's physical appearance on an ongoing basis appear to be relaxed, even if the subject of this attention would rather this not be so. Pregnant women have commented in many different forums how casual acquaintances, or even strangers, seem to take pregnancy status as an invitation to remark on or even to paw at their bodies in ways that would invite social condemnation, slaps, or lawsuits under less pregnant circumstances.

The pregnant woman is most certainly watched but, as we have taken pains to point out, such opportunistic gawking and pawing do not add up to surveillance. Her physician's ongoing attention is surveillance, and *What to Expect When You're Expecting* argues that the woman should adopt similar surveillance tactics. By making use of her unique access to her own thoughts, feelings, and bodily sensations and combining this with the information and instructions in self-surveillance, *What to Expect* promises that the guided, disciplined inward gaze will lead to the best possible pregnancy outcome.

The demands of late twentieth century scientific motherhood make the pregnant woman responsible for assessing the veracity of her information sources, integrating sometimes conflicting opinions, and balancing the advantages and disadvantages of the available care options. At the same time, highly mobile middle class life has contributed to disconnecting mothers-to-be from many of the personal social networks, such as friends and family, which may have supplied significant information and emotional support around pregnancy in the past. Into this void, *What to Expect* also offers a particular kind of para-social interaction. As a book, it is a physical presence that can be turned to as needed, while as a reading experience, it becomes a comforting advisor who counsels that self-surveillance holds the key to meeting the existential demands of bringing a new child safely into the world.

Many reader's responses to *What to Expect* illustrate how the proper balance between too much and too little information seems to be a highly personal one. The same content and presentation comforts some people, while making others anxious. A communicative tone that some find personable, intimate, and reassuring, others may find either condescending or lacking in authority. Many readers experience the self-

surveillance promoted by the text as self-empowering, and the authors argue that this is its intended effect. Other readers seem to feel that they are enacting the perspective of another—a medicalized, objectifying gaze that leaves mother to the side, an observer of a situation in which she is field, process, and participant. Anxiety can be a primary motivator to adopt self-surveillance strategies, but anxiety can also be one of surveillance's effects. From the example of *What to Expect*, we can identify two key elements to an anxiety-reduction effect. First, the self-surveillance provides information that the watcher *understands*. Second, this information fits into a plan of action consistent with the watcher's goals.

CHAPTER FOUR
FETAL ULTRASOUND AND THE SURVEILLED AMERICAN PREGNANCY

> … the power of professionals to shape people's lives has increasingly escalated to become one central mark of life in the twentieth century. In these circumstances the wombs of women—whether already pregnant or not—are containers to be captured by the ideologies and practices of those who, to put it most simply, do not believe that women are able to take care of themselves.
>
> Oakley, *The Captured Womb*

The scanning of the human fetus in utero via ultrasonography is now a common and routine part of prenatal care in the United States, but it was only just becoming so in the 1980s. The spread of routine ultrasounds in United States trailed several European countries with more centrally planned and financed medical care systems, but by 1985 a majority of pregnancies in the U.S. received ultrasound scans. Not unlike many medical tests and procedures (Alexander and Kotelchuck 2001), ultrasounds became frequent and popular before medical research established much firm support for their medical benefit. Even now, the consensus of medical experts is that routine ultrasounds of unproblematic pregnancies offer no measureable improvements in pregnancy outcomes. Major professional organizations whose members deal with ultrasounds regularly, such as the American Congress of Obstetricians and Gynecologists (ACOG) and the American Institute of Ultrasound in Medicine (AUIM), have consistently advised against the routine use of ultrasound in pregnancy in official policy statements dating back to the early 1980s. The National Institutes of Health first opined on the lack of evidence for routine ultrasound benefits in 1984 (National Institutes of Health 1984). Yet, despite this lack of formal support, the use of ultrasound spread and has become solidly entrenched in

United States prenatal care. Fetal ultrasounds are "… a social experience and an expectation in our society", "… attractive in a manner that is atypical of other medical procedures" (Filly and Crane 2002, 713).

The demand from pregnant women for fetal sonography has led to the many developments that do not sound much like the average medical procedure: sonographic "studios" in shopping malls that can send mothers home with color photos or videos of their offspring-to-be[1], ultrasound services that provide live scans at the traditional baby shower[2], USB-powered ultrasounds that operate with a home computer[3], and "spas" that offer massage and "baby concierge" services along with ultrasound scans[4].

While an ultrasound services industry has developed targeting many of the pregnant woman's need and desires, ultrasound images have also found places in settings well outside the family. Fetal images have found their ways into advertising for a variety of products (Taylor 1992). Groups opposed to abortion have used the images in their printed materials, on billboards, and in posters displayed during protests at abortion clinics. Politicians opposed to abortion have sought to mandate ultrasound scans before abortions—in some cases requiring that the pregnant woman herself view the ultrasound images before continuing with the abortion.

Women seem to seek out medical and "keepsake" ultrasounds. They willingly incur significant expense to seek additional ultrasounds and actively oppose efforts to

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[1] Described in Greene and Platt (2005).
[2] As detailed by the provider at http://www.prenatalimpressions.net/baby-shower.php (accessed January 20, 2010).
[3] Described in Vochin (2006).
[4] Prenatal massage service described at http://www.momstobeultrasound.com/faqs.html (accessed January 20, 2010. Baby concierge services described at http://www.prenatalimpressions.net/diagnostic-ultrasound.php (accessed January 20, 2010).

reduce the use of ultrasound in routine prenatal care (Georges 1996). But as the practices of some abortion opponents illustrate, in some circumstances others seek to force the woman to undergo the ultrasound and to view fetal ultrasound images, presumably with the idea that viewing these images, or merely the possibility that she will have to view these images, will change the woman's abortion plans. In the first case, women push *for* ultrasound, while, in the second, others push this same surveillance technology *on* women. What does it tell us about fetal ultrasounds, and about surveillance more generally, if the same surveillance process can inspire such seemingly different uses and such seemingly different responses from their targets?

Fetal Ultrasound As Surveillance

Fetal ultrasounds do not jump to mind as the most obvious example of a surveillance practice. Since chapter one, we have been arguing for the utility and accuracy of Ball et al.'s (2006) definition, so let us look at how this might apply to ultrasounds. These authors say that surveillance consists of (1) data gathering (by watching, spying, listening, eavesdropping, electronic recording, or practically any other means) that is (2) purposeful [the "point" usually being "control, entitlement, management, influence or protection" (Ball et al. 2006, 4)], (3) systematic, (4) focused, and (5) routine. That fetal ultrasound meets the first three of these criteria is relatively easy to see. Fetal ultrasounds certainly produce data (point one) and this data is used for a number of the different purposes described as characteristic of surveillance. As we will see in this chapter, one of the interesting things about looking at fetal ultrasound as a surveillance process is that the analysis reveals a number of different "watcher" with a host of intersecting and diverging agenda for how the surveillance data may be used. But while

fetal ultrasound may be on the far end of the spectrum in this regard, it is not unique among surveillance processes in allowing for different, even conflicting, uses of the "same" surveillance. I think it is similarly uncontroversial to assert that most ultrasounds are conducted according to a plan (point 3, even though some uses, such as "keepsake" ultrasounds, might remind the reader more of family snapshots than systematic stratagems), and focus on specific actors (point 4, even if some might disagree as to whether the ultrasound's *principal* focus is really the fetus or the pregnant woman). This leaves as questionable only the extent to which fetal ultrasounds conform to aspect five of our definition. Does it make sense to consider fetal ultrasounds as occurring as part of our "routine" or "daily business"?

Since I have already argued that "all watching is not surveillance," it would be best if our "surveillance" definition was able to exclude some instances of data gathering, lest our term become overly inclusive. At first glance, medical test procedures like fetal ultrasound would seem a prime candidate for an instance in which data gathering does not occur as part of one's "daily business": the procedure is directed at only the female portion of the population, and then only at the pregnant portion of the female population. Discounting the few exceptional cases of extraordinary need (certain high-risk conditions of pregnancy) or extraordinary psychopathology and financial resourcefulness (Tom Cruise bought his own ultrasound so that he could keep tabs more frequently on Suri's fetal development), even members of the targeted population, pregnant women, do not undergo fetal ultrasound exams every day. When they do undergo the exam, they typically (again discounting the exceptional cases, like in-home baby shower ultrasound services) must go to a particular location away from work or home, then consciously

submit to a fairly elaborate procedure, one involving experiences, such as having very cold gel applied to the skin of the belly, that one would most likely avoid if one could during one's "routine" daily activities.   Together, these consideration pose substantial objections to considering medical tests in general, and fetal ultrasounds in particular, as instances of surveillance.

Several important considerations, some about the nature of surveillance and some about fetal ultrasounds in particular, help us to see how fetal ultrasounds meet the "routineness" criterion. The "routineness" to which criterion five refers can be thought of as referring *both* to the surveillance processes themselves and to the activities that these processes observe. In neither of these cases, however, is it reasonable to require, for a data gathering activity to be considered surveillance, that either the surveillance processes or the observed activities occur every day. Such a requirement would exclude too many activities that clearly are surveillance. Like many human activities, surveillance processes can vary greatly in intensity, and the frequency with which data is gathered by the surveillant is one factor determining that intensity. The frequency of data gathering alone cannot determine whether something is or is not surveillance. Even a single episode of data gathering can, for example, be surveillance if that gathered data fits into an action plan that helps to make sense of the data—typically this occurs when a large pool of data exists to which the single episode data can be compared. For example, it is clearly surveillance when a supervisor, concerned about a worker's job performance, directly observes and scrutinizes how the worker does his or her job. The supervisor possesses, in addition to the data gathered in that instance about the worker, a pool of data, whether this is in the form of an internalize norm for what it means to be a successful worker at that

position, or in the form of specific articulated performance criteria, to which the worker's performance may be compared that will assist the supervisor in assessing the acceptability of the worker's performance.

The "intensity" of a surveillance process, then, is a function of the procedure's duration, frequency, and intrusiveness or intimacy. By introducing the concept of surveillance intensity here, I wish to illustrate surveillance's fluid character, how many of its characteristics contribute to its intensity, rather than to define a formal variable. For example, in the case of the pregnant woman, who may receive only one or two sonograms during her entire pregnancy, these one or two experiences can most certainly be "intense." Even though they are of relatively brief duration and small frequency, the nature of their target, the fetus as it is behaving in real time inside her body, means that they are technically implemented intimacy.

The "routineness" of criterion five is a relative term not defined necessarily by the frequency of the observed behavior or of the surveillance data gathering. It is the *intersection* of the target's "life as lived" with the surveillance procedures (both data gathering and action plan) that combine to make the watching's focus "routine." Despite the elaborate procedures required by the data gathering technology of fetal ultrasound, the target is (at least nominally, more on this in what follows) the ongoing functioning of the fetus (and of the mother-fetus unit). The fetus, certainly, is precisely going about his/her daily life when pictured by the sonogram, whatever extraordinary technologies and procedures the mother and doctor must employ to obtain these images.

Multiple data points are required to produce surveillance. While these multiple data points usually consist of multiple impressions of the target over time, and this

approach might lead in most cases to more accurate judgments from the surveillance data, multiple measures of the same target are not always required. At times the comparison data points may be, for example, a norm established by similar surveillance impressions taken of other targets. In the case of a fetal ultrasound, even a single ultrasound can make for "surveillance" if the information from the scan is being compared to established norms and this comparison fits into an action plan of the surveillant.

Physician Effects and Fetal Ultrasound

The physicians who were the early adopters of ultrasound in obstetrics vividly recalled their excitement around this new and improved visual access to the fetus—as early as the mid-1960s, one doctor described the ability to observe fetal heartbeats early in development via Doppler ultrasound as "revolutionary" (Goldberg 2000, 624). Published medical praise of ultrasound focuses on the improvements in care that could result from this increased access, though several authors also mention, albeit obliquely, psychological effects on the physician of this new technique. Goldberg (2000), for example, observes, "it has provided eyes for the physicians that enable them to look at the fetus as a patient" (628). Ultrasound imaging of the fetus was a powerful inducement for doctors to see the fetus as an individual distinct from the mother—the fetus came to be seen by physicians as having his or her own in-utero experiences and "personality," and even as "very much in command of the pregnancy" (Liley 1972, 100).

Medical professionals have debated the balance between risks and benefits to the fetus from ultrasound for most of the procedure's existence. Even as they acknowledge and occasionally investigate psychological effects of visual access to the fetus in terms of bonding or anxiety, in practice most physicians are primarily concerned with whether or

not early visual access provided by ultrasound leads to improvements in their abilities to accurately assess the fetus (Niebyl 2009, personal communication). There has been a prolonged debate within the profession, especially within the United States, around whether or not ultrasound examinations should be a routine part of prenatal care. On the "costs" side of the ledger, medical analyses usually consider the significant literal monetary costs of the procedure and the potential physical risks to the fetus from as yet undiscovered harms from exposure to ultrasound radiation. Ultrasound has been subjected to empirical studies aimed at identifying possible negative effects at least since the early 1970s [e.g., Falus et al. (1972) cited in Gold (1984)]. While a few studies have raised concerns that frequent ultrasounds might reduce the child's growth later in development, for the most part studies have consistently found no evidence of physical harm to the fetus from ultrasonography (Bioeffects Committee of the American Institute of Ultrasound in Medicine 2008).

Another risk from the routine use of ultrasound is the possibility that routine surveillance will lead to unnecessary medical interventions, as benign variations in fetal conditions are misidentified as causes for concern (Callen 2008). Since any medical intervention carries its own risks, these unnecessary interventions represent an iatrogenic risk of the ultrasound procedure. This risk is recognized broadly within the medical profession and is not limited to either the ultrasound procedure or to practice of obstetrics (Goodlin 1979). This is the a medical version of the anxiety producing effects of surveillance processes—more information, especially in an environment in which the risk-meanings of this information are difficult to assess, produces in doctors an imperative to "do something," even when doing nothing has an equivalent or better

chance of producing a desirable outcome. The additional unnecessary or unhelpful medical tests and procedures, which might follow an unnecessary ultrasound, are the physicians' outlets for this surveillance-induced anxiety. At least two responses directed toward reducing this unhelpful anxiety are possible—restrict the provision of unhelpful but anxiety-producing information or further investigate fetal processes so that the risk-meanings of all ultrasound-derived information become clear. This "further investigation" option is both time-consuming and expensive, and there is no guarantee that accurate risk-meanings can really be determined for all possible variations in fetal development that might be detectable by ultrasound. Because no significant benefit has yet been demonstrated, increased costs can easily be demonstrated, and unknown negative physiological effects cannot be definitively ruled out, critics reason that ultrasounds should not be used routinely during low-risk pregnancies. This conclusion is the closest thing to "official policy" in the free market economy of United States medicine, as it is the standard-of-care recommendation of the American College of Obstetricians and Gynecologists, the National Institutes of Health, and the federal government's Food and Drug Administration (Larkin 2006). This reasoning and recommendation has remained essentially unchanged since 1983, when it was first put forth by the National Institutes of Health at its "Consensus Development Conference on Ultrasound Imaging in Pregnancy." It has been enshrined in the reimbursement restrictions of the Blue Cross/Blue Shield insurance companies since 1984, which restrict payment to ultrasounds conducted for reasons of medical necessity (Gold 1984). However, "medical necessity" has come to be defined by the profession as including such basic information needs as confirming and dating the pregnancy (American Institute of

Ultrasound in Medicine 2009)—resulting in the current situation in the United States in which ultrasound is de facto routine even in the face of insurance and professional organization policies against this.

Practicing physicians have only gradually come to acknowledge mothers' desires for and emotional experiences of fetal ultrasound. Early published reports from physicians on fetal ultrasounds clearly reflected the idea that the physician was the watcher and the fetus his (and it was almost always a "he" then) target[5]. The most common treatment of the mother's role in the affair was either to ignore it completely or to note the mother's status as the impediment to the physician's clear access to the fetus.

Physicians' writings on ultrasound make it clear that most physicians clearly see themselves as the "watcher" in the ultrasound process. Even research into whether viewing of the fetal ultrasound might foster "attachment" tends to place the mother in a rather passive role of someone exposed to a picture rather than in the more active roles of interpreter and user of fetal images. Ultrasound training manuals for doctors are instructive in this regard. One of the leading texts in the field is Peter Callen's *Ultrasonography in Obstetrics and Gynecology*. First published in 1983, it received major revisions in 1988, 1994, 2000, and 2008, consistent with the rapid technical advances in both the technology itself and in its medical uses. For most of its history, Callen's text makes no mention at all of anything remotely suggestive of possible maternal psychological or emotional responses to the ultrasound, let alone to the possibility that mothers might be making their own use of the ultrasound information.

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[5] In 1980, less than 12% of United State physicians were women (American Medical Association) and virtually all of the early researchers and developers of medical ultrasound were men. See http://www.ob-ultrasound.net/history1.html for a detailed history.

The first mention of the benefits to physicians attending to how they present ultrasound results to mothers does not occur until the text's fourth edition from 2000, in connection to a discussion about minimizing risks of medical malpractice lawsuits. The fifth (2008) edition is much more explicit in directing physicians to discuss the limitations of ultrasound with both the pregnant woman and the referring physician. This 2008 edition is the first to include a section of "Discussing the Examination With the Patient." It opens this section with "This topic is also controversial" (Callen 2008, 21).

The Effects of Fetal Ultrasounds on the Parents-to-Be

As doctors and parents began to establish the ultrasound as routine in the late 1970s and early 1980s, empirical researchers began to conduct larger scale studies of the effects of the procedure from a number of different perspectives. The medical profession as a whole had initially been wary of accepting fetal ultrasound, perhaps fearing a repetition of what happened with the similar use of x-rays, where a significant dangerous medical effect was discovered to occur in a small but significant number of cases only after the procedure came into common use (Oakley 1984). Even today, authors and researchers tend to comment cautiously on ultrasound's safety, using phrases such as "no negative effects have been found" rather than "safe." Researchers also continue to investigate possible routes by which fetal ultrasounds might possibly have some negative effect, such as heat (Abramowitz 2008) or molecular movement (Stratmeyer 2008). As a consensus formed as to ultrasound's physical safety with pregnant women, researchers began to publish formal studies of the psychological effects of this procedure on mothers. More precisely, researchers began to investigate the effects of the information and images the ultrasound produced, since it was this data, rather than the procedure itself, that

researchers presumed to produce the observed psychological responses. Eventually, a few researchers even made this assumption explicit and tested it. By the mid- to late-1980s, American medical practice had firmly established fetal ultrasound as a norm in prenatal care in the United States. Investigators gradually began to broaden their foci and to ask how this now common procedure changed not only the pregnant woman's experience of pregnancy, but also the perception of a variety of social actors toward the pregnant woman and the fetus.

Isolating effects specific to prenatal ultrasound has proven to be difficult. Even the "routineness" of the procedure communicates information and opinions to patients, at least by connotation, so the days in which a woman might have a genuinely "fresh" opinion about her ultrasound experience, uncompromised by pre-existing experiences or opinions, have probably long passed. A study completed by Hyde (1986) in the early phases of ultrasound's introduction found that women were much more likely to positively disposed toward the procedure, that is, to see it as potentially valuable and as desirable, if they attended a hospital where ultrasound scanning was done routinely rather than one where it was done only selectively based on specific clinical indications. (It is also interesting to note, however, that in the Hyde study, women who had experienced ultrasound previously also had this pro-ultrasound "prejudice"—once women had ultrasounds, they preferred having them in subsequent pregnancies, whether or not this was the standard expectation in their hospital.) The procedure's ubiquity has made identifying a group of pregnant woman who have not undergone ultrasound for comparative purposes increasingly problematic, as in many cases avoiding an ultrasound, as opposed to having one, has become the route that requires a more active decision on

the woman's part. So women who do not have an ultrasound have made themselves a self-selected sample who might differ in unpredictable ways from the general population of pregnant women. [Medical test refusal, when it is studied at all, is usually seen as a function of assessments of the physical/medical riskiness of the procedure itself, not the potential riskiness of the information produced by the procedure. See Kolker and Burke (1993) as an example.] Ultrasound also typically occurs as a part of the ongoing processes of pregnancy and prenatal care, processes that, as we argued in chapter three, have their own surveillance and self-surveillance characteristics in addition to those which may be contributed by fetal ultrasound. Pregnancy also has its own significant effects on the emotional lives of both the mother and her partner (Rubin 1970, Leifer 1977, Osofsky and Osofsky 1984, Salisbury et al. 2003), so any effect attributed specifically to ultrasound under these conditions would have to rise above a great deal of ongoing surveillance and ongoing emotional change.

Two major reviews of the ultrasound effects literature, Baillie, Hewison and Mason (1999) on psychological effects and Garcia et al. (2002) on women's views of the procedure, are referenced frequently by most subsequent studies in this area, and so have some to represent the standard interpretation of the medical literature. Lumley (1990) provided an early summary of the field's research findings and concerns. To some extent, the later and broader reviews of Baillie et al. and Garcia et al. commented on the earlier findings of Lumley, which had come to represent the "conventional wisdom" about fetal ultrasound. For this reason, we will present the results of the two major reviews in detail and discuss how the field responded to concerns raised by Lumley.

Baillie, Hewison and Mason (1999), in their major review of the literature on "psychological effects" of fetal ultrasound, identified thirty-five studies, published between 1980-1997, representing a variety of research methodologies and specific research questions. Baillie et al. (1999) noted the consensus (which continues to the present) that routine ultrasound use in pregnancy produces no significant population-level improvements in the medical outcomes of pregnancy (defined as measureable improvements in the health or mortality of either the mother or the infant). Baillie et al. (1999) observed that psychological benefits (especially to pregnant women) were often given as a reason for the continued frequent use of the procedure even in light of this lack of support for its medical benefit, so the authors sought to establish what, if any, research support their was for this psychological benefit. The tone and rhetoric employed by these authors (e.g., their reference to reports of the psychological benefits of viewing fetal ultrasound images as "claims") is consistent with the interpretation that these authors were not predisposed to view reports of non-medical benefits kindly. These authors observed that the search for ultrasound effects has explored several areas of potential effects, including maternal anxiety and stress, maternal-fetal attachment or "bonding," and health-related behaviors during pregnancy.

Early proponents of ultrasound believed that it helped to reduce the anxieties of the pregnant woman, especially anxieties coming from worries about the health of the fetus. Early studies seemed to suggest that fetal ultrasounds did have an anxiety reducing effect. However, later studies with better designs revealed that, for most women, this anxiety reduction was an artifact of the test itself: maternal anxiety was found to be raised in pregnant women who faced the prospect of ultrasound, similarly to how anxiety is

raised in most people about to be subjected to medical procedures or tests. Then, again similarly to how most people respond to most medical tests, maternal anxiety did indeed decline after the ultrasound was completed and its findings revealed no problems (Baillie et al. 1999). The decline in anxiety, though, merely saw the anxiety return to the person's baseline before being faced with the immediate prospect of the ultrasound—most studies in which this was measured showed no significant change in the typical mother's ongoing level of anxiety throughout the pregnancy. The authors concluded that, overall, the ultrasound itself had no conclusive longer-term effect on maternal anxiety and that any relief of anxiety the ultrasound appeared to provide in some studies was due primarily to relief of anxiety commonly experienced before most medical diagnostic procedures (Baillie et al. 1999).

Research findings on maternal stress more generally were not so clearly the result of iatrogenic factors, though Baillie et al (1999) still felt that inadequacies of research design did not allow a clear conclusion of positive ultrasound effects. From our perspective considering the ultrasound as a surveillance procedure, again the problem is distinguishing immediate and relatively transient responses to any medical procedure from any sort of ongoing effect of the ultrasound specifically as a surveillance procedure. For example, does the pregnant woman gain some sort of information that can be incorporated into an ongoing plan of action, even an implied or not clearly articulated one? As ultrasound effects research has gotten more sophisticated, and as the ultrasound has become more common for and expected by pregnant women and their partners, investigators have begun trying to identify more complex effects on the observers, as well as what particular aspects of the ultrasound experience might be producing its effects (if

any). Kovacevic (1993), for example, included measurements of the accompanying partners' stress and anxiety. She also included a control condition in which women were given the ultrasound exam but received no feedback during the procedure. Control subjects could not view the ultrasound images and were told at the conclusion of the procedure that the findings were "normal" (which, for all subjects in this study, they were). In Kovacevic's study, the parents of the fetus received the most basic of surveillance information, the health-related conclusion that all was well with the developing fetus. They had no independent experience of the surveillance data from which they might draw their own conclusions, either at the time of the procedure or later upon reflection on the experience. Both groups of parents, those watching the ultrasound and receiving ongoing feedback, as well as those not allowed to see the ultrasound images, showed the expected decrease in anxiety after the ultrasound was completed. This is as would be predicted from what we have been saying about the known effects of most medical diagnostic procedures on anxiety. For our understanding of the surveillance properties of the ultrasound procedure, it is also important to note that there was no significant difference in this effect between the experimental and control groups. That is, anxiety and stress of parents were reduced similarly regardless of whether the parents received a high level of data from the ultrasound, in the form of the real-time visual images and ongoing doctor's interpretation, or only minimal data from the ultrasound, in the form of the overall medical conclusion (e.g., something to the effect of "everything looks okay").

The design and report of the Kovacevic (1993) study, as with most published ultrasound effects studies, does not allow us to determine what, if any, plans the parents

might have in place for using the information to be gained from the ultrasound. From a surveillance analysis perspective, that is, we do not really know if they had an "action plan" into which the ultrasound findings might have fit. In fact, many early ultrasound effects studies, in the name of assembling the most homogeneous body of test subject possible, specifically excluded mothers with high risk pregnancies, the very subjects who would presumably be most likely to need to have a plan involving how to proceed in light of ultrasound-obtained data.

Baillie et al. (1999) characterize the reports of positive effects of viewing the ultrasound on mother-infant attachment as "compelling" but "drawn from self-selected samples" and therefore perhaps not generalizable to the entire population of pregnant women (153). While there is still some debate around the advisability of applying the concept of bonding or attachment, originally developed in research on animal behavior, to the relationship between human parents and their offspring, most researchers looking into bonding as a possible ultrasound effect assume bonding's existence and importance. Interview studies of the type Baillie et al. criticize for lack of generalizability usually define the attachment concept in terms of the woman's statements of feelings of connectedness or emotional warmth toward the fetus. Controlled studies of the type Baillie et al. clearly prefer operationalize the maternal side of bonding as the woman's self-report, usually on a Likert scale, of feelings toward her fetus, though there is not much standardization of measurement across studies. One instrument for measuring maternal attachment is the Maternal-Fetal Attachment Scale (MFA) (Cranley, 1981), a 24-item questionnaire using a 5-point Likert scale. The instrument reports greater maternal attachment with self-reports of greater frequency on items such as "I talk to my

unborn baby" and "I picture myself feeding the baby." Other studies measure bonding with a single question (e.g., Villeneuve et al. 1988). In addition to controversy about the existence of the variable itself and difficulties with its operationalization, identifying potential effects of ultrasound on bonding is also made difficult my what is considered by researchers in the area to be normal changes in bonding through the course of pregnancy. Most pregnant women demonstrate a gradual increase in attachment as the due date approaches, with or without ultrasound scanning. Still, despite all these difficulties with operationalizing the concept, some studies have been able to show changes in attached consistent with theoretical predictions, such as Heidrich and Cranley's (1989) finding of lower attachment in older pregnant women prior to amniocentesis, attachment that increased soon after the test indicated that the fetus was developing normally. While some pregnancy testing procedures might have a mild effect on attachment in some circumstances, ultrasounds have not shown this effect. Heidrich and Cranley (1989) found no difference in measured maternal attachment four weeks after the women had had either a prenatal visit without ultrasound or a prenatal visit with ultrasound. There results are typical, as Baillie et al. (1999) concluded that no controlled studies have showed ultrasound to have a significant effect on maternal attachment, while several studies have failed to demonstrate such an effect.

As reported by Baillie et al. (1999), studies of the effects of ultrasound viewing on the mother's health-related behaviors have focused on the question of whether or not the mother's cigarette smoking was reduced by her viewing of the ultrasound. One study (Waldenstrom et al. 1988) seemed to suggest this, although it did not test it directly, and these results have not been replicated in several subsequent studies. Once again, however,

the difficulty may be measuring an effect attributable to ultrasound against the highly dynamic background of pregnancy itself. As Baillie et al. noted, one study (Eurenius et al. 1996) found a very high reduction in cigarette usage in women upon learning of their pregnancy, prior to any viewing of ultrasound. Over 50% of the women who smoked reduced or quit before their first ultrasound scan. (Eurenius et al. 1996). This suggests that only the most determined smokers are still smoking by the time they receive their first ultrasound. Still, the results of Eurenius and her colleagues seem to indicate that the experience of the ultrasound procedure added nothing, in terms of encouraging this particular health behavior, to the effect of learning the pregnancy.

Garcia et al.'s (2002) major review of the published research literature focused on women's own views of their fetal ultrasound experiences in pregnancy. Their review located seventy-eight studies from eighteen different countries published between 1980-2001, representing many different research approaches. The authors' discussion of the "particular challenges" of interpreting their review results raised several concerns that have relevance to the current project, or any work that tries to make general conclusions about fetal ultrasounds. (1) Fetal ultrasound is typically experienced as one among many diagnostic tests administered during pregnancy. While it has some unique characteristics, such as allowing visualization of the fetus, it also shares many characteristics, such as information provision and boundary crossing, with other tests the pregnant woman is likely to receive. Identifying reactions unique to ultrasounds is, therefore, a challenge. (2) Any particular woman's experience of ultrasound may depend on many factors distinct to the general characteristics of ultrasound itself, such as the purpose of the ultrasound exam, the findings from the exam, and the woman's relationship to and

interactions with the specific medical providers. The contributions of these social factors to the woman's experience could be important in understanding a particular reaction to the ultrasound. But this has to be a research question, not an assumption. (3) The techniques of ultrasound administration have evolved over time in the United States and differ significantly from country to country so, as with point (2), when pointing to specific characteristics of the ultrasound exam as causative, care must be taken to at least acknowledge this potential lack of universality in how ultrasound has been experienced. With these rather daunting qualifications in mind, we proceed to Garcia et al.'s (2002) findings.

Garcia et al. (2002) organized their findings into five main areas: (1) women's knowledge of the purpose and technical capabilities of ultrasound, (2) aspects of ultrasound that women liked or valued, (3) women's opinions about the way their particular scan was performed, (4) the impact of ultrasound results, and (5) the wider impact of ultrasound on society.

Many studies found a significant difference in understanding about the purpose of the ultrasound exam between the pregnant woman and her doctor. This misunderstanding tended to be of two types: either the mother was unaware that the exam was looking for a specific abnormality (such as Down's Syndrome) or, alternatively, mothers believed wrongly that an ultrasound's failure to detect abnormalities was an assurance that the baby was normal in all respects (Garcia et al., 2002). That is, when women develop opinions about ultrasound that medical providers feel are unwarranted, these opinions tend to give the ultrasound (and doctors using the technology) *more* predictive power than the doctors feel is justified. Pregnant women are also commonly

unaware that their doctors are using the ultrasound to search for specific abnormalities (i.e., ones with particular physical characteristics which the ultrasound can make visible). While these may seem like contradictory findings, I believe they both point to a misperception of the technological power of ultrasound and to an assumption that the ultrasound will be able to provide evidence of almost any fetal abnormality or problem—perhaps mixed with an understandable hope/wish that the all-seeing technology confirm that no problems exist. The review authors noted that many of the studies identified significant gaps in the provision of information about ultrasound to pregnant women—a problem that they noted across many different countries.

One of the most consistent findings of fetal ultrasound studies is that women react very positively to the ultrasound exam. As we noted earlier, it is most common for women to feel anxious immediately before the exam, but this anxiety dissipates quickly when the ultrasound does not produce troubling findings. In the early stages of ultrasound's introduction into a particular culture, mothers often fear that ultrasound will harm them or their fetus, but these fears tend to abate as ultrasound becomes more routine within the culture (Garcia et al. 2002). When the specific techniques of the ultrasound exam have been studied, women prefer "high feedback," in which they see the ultrasound screen and are given running explanations of the images, over "low feedback" conditions in which they receive only general results. Despite the lack of measured effects on maternal "attachment" noted earlier in the Baillie et al. (1999) review, one of the most common observations of qualitative investigations of women's responses to the ultrasound is the woman's increased sense of the fetus as an individual child, an identity distinct from the woman's own. Women often experience the ultrasound as meeting the

baby and also as a visual confirmation of the reality of their pregnancy. These two functions, along with reassurance of the fetus's well-being (though this latter is, as we have mentioned, frequently interpreted more broadly by mothers than by medical personnel), seem to be the characteristics of the ultrasound exam pregnant women most highly prize across a variety of time periods and cultures (Garcia et al. 2002).

From our perspective of trying to understand the pregnant woman's role in ultrasound as a surveillance process, it is important to note another of Garcia et al.'s findings. While the clarity of the ultrasonic screen image has improved significantly with new ultrasound technologies introduced since the period covered in the Garcia et al. (2002) review, most research studies found that the non-medical viewer (almost always the pregnant women) did not interpret accurately what appeared on the ultrasound screen without detailed explanations from the person administering the exam. Reactions to the level of feedback were significantly related to the women's expectations. Silence from the examiner made women more anxious when they came into an ultrasound exam expecting explanations, as women interpreted silence as a sign of impending bad news. However, where low or even no feedback was the clearly established cultural norm, women were not made more anxious by this lack of information. It appears that the pregnant woman's use of the ultrasound images as an active surveillant is quite flexible and strongly influenced by cultural context and expectations, not a direct function of viewing the ultrasound screen image. Women seem to adapt to the options for ultrasound a culture provides, from considering it rather passively, like any other specialized medical test they might be asked to undergo in pregnancy, to actively seeking it outside the medical relationship entirely, or even self-administering it (Voelker 2005, Raucher, 2009).

Once the broader culture provides the option of a relatively active surveillant role, however, women expect to be provided with the assistance necessary for them to assume this role and are made anxious, angry, or disappointed with this expectation is not fulfilled.

As we discussed before, and similarly to how most people react to most medical testing, in the short-term, a pregnant woman's anxiety is typically raised by the prospect of an ultrasound, then relieved after a finding of no problems. As this finding is by now firmly established, Garcia et al. (2002) focused most of their attention on studies looking at women's responses to equivocal or bad news from the ultrasound exam. Women's anxieties seem usually to continue or to increase when the ultrasound produces non-definitive information. In some instances, this increased level of anxiety persists throughout the pregnancy, even when later ultrasounds give reassuring results. Garcia et al. observed that women strongly expected the reassurance of positive findings and that medical personnel rarely prepared women to receive either ambiguous or problematic results. Garcia et al. also noted a common finding that medical professionals did a poor job informing pregnant women about the probabilistic nature of many ultrasound results—that is, that certain ultrasound observations indicate a chance or likelihood of a problem developing, rather than its certainty. As a viewing technology, it appears that most women read the ultrasound as a witnessing device. Following this logic, as a witnessing opportunity, an abnormality is either seen or not seen. As an ongoing process, however, fetal development can show "anomalies" that, while statistically abnormal at that stage, may or may not turn into functional problems later. Medical personnel, according to Garcia et al., rarely take the time to discuss these distinctions with pregnant

women, who are then left to interpret any non-routine finding as an indication of danger. The review authors noted that most research reports in this area included calls for better education of pregnant women about both what ultrasound can and cannot detect, as well as what it might detect, in order to prepare women better for possible ambiguous or bad news.

The Garcia et al. (2002) review is unique in its efforts to combine attention to the results of empirical research on women's reactions to fetal ultrasound with analysis of published works raising questions about ultrasound's broader social impacts. Although their attention is brief, the review authors note debates about ultrasound's effects raised by psychoanalytic theorists, about how ultrasound and ultrasound images have been used in arguments over abortion rights, and about "other feminist concerns" (233), such as the displacement of women's unique experiential knowledge of their pregnancy by the technologically-derived information of ultrasound. Empirical studies of ultrasound effects and socio-political analyses of ultrasound's impact beyond the individual level, rarely reference each other. Garcia et al.'s inclusion of these considerations had the potential to bring these rather parallel lines of thinking together or, at the very least, to bring these issues to the attention of its journal's (*Birth*) audience, one used to more empirically-focused medical research.

Garcia et al. (2002) reported on several psychoanalytic articles that raised the theoretical concern that the mother's viewing of the ultrasound image would interfere with her naturally (according to psychoanalytic theory) developing image of her baby in her imagination. These theorists cautioned that interference in this psychological/imaginary process by presenting the mother-to-be with an engaging

technological image would ultimately interfere with the mother's developing maternal feelings toward her child. While, as with most psychoanalytic theorizing, such concerns are not subject to definitive disproof, three authors identified by Garcia et al. felt that their research results offered evidence that these concerns were not supported. The reviewers also noted that no well-designed studies have investigated the potential impact of ultrasound on the long-term psychological relationship between parents and children.

Garcia et al. (2002) very briefly summarize the concern that ultrasound is being used to further the arguments of those with anti-abortion agendas, including the connection between ultrasound images and the construction of the fetus as an individual with human rights which may be distinct from those of the mother. While the review's attention may seem scant in relation to the seriousness of the subject matter (Garcia et al. mention only three specific articles on this subject), any mention at all of this subject in a journal devoted primarily to empirical research was at the time highly unusual (and, to only a slightly lesser degree, remains unusual today). Prior to 2000, the subject was occasionally raised in the context of research into potential bonding effects. However, the Lumley (1990) review mentioned earlier, which focused on bonding effects in the pre-1990 literature and which raised for the field a number of what came to be considered "feminist" concerns, did not include any mention of a potential connection between bonding and abortion or attitudes toward abortion. An early qualitative study, actually a report on only two cases, Fletcher and Evans (1983) introduced this issue with a reportedly spontaneous comment from one of the patients, then went on to speculate that "fewer abortions and more desired pregnancies" might become an "unrecognized consequence" of the growing use of ultrasound (392). Garcia et al. (2002) presented

Baillie et al.'s (1999) coverage of the issue of maternal bonding effects as an explanation of their own decision to exclude this issue from detailed consideration. As my detailed account of Baillie et al. (1999) above indicates, however, Baillie et al. concluded that available empirical research revealed little or no effect on maternal bonding from ultrasound viewing and made no mention at all of the connection between the question of maternal bonding and the debate over the use of ultrasound in the abortion rights debate. Garcia et al. (2002) briefly mentioned Petchesky's (1987) discussion of possible links between viewing of the fetal image via ultrasound and stronger "emphasis on the rights of the fetus as an individual" (Garcia et al. 2002, 232-233), but not Petchesky's lengthy discussion of the connections between stronger views toward fetal personhood and stronger views opposing abortion. Without further information, it is difficult to draw conclusions about the relative lack of attention to the role of ultrasound in the abortion debate in either Baillie et al. (1999) or Garcia et al. (2002). Someone seems to have decided that such more overtly political or "feminist" concerns were not to be discussed in detail in the venue of empirical/medical journals. It is unclear whether the review authors, the journal editors, or some combination made this decision, just as it unclear whether the basis for this decision lay in a wish to avoid controversy, a perception of the interests of the journals' audiences, or other possible factors.

Garcia et al.'s (2002) report of "other feminist concerns"—the possibility that doctor feedback during ultrasound may be used by the medical establishment to promote certain behaviors as "appropriate" and the potential for conflicts between fetal rights and maternal rights—echo some of the worries about potential negative effects of ultrasound raised by Lumley (1990) more than a decade before. The authors of each of the major

reviews discussed here, Baillie et al. (1999) and Garcia et al. (2002), along with Lumley (1990), all appear to have approached ultrasound technology and its likely effects on pregnant women with what Garcia et al. called “a somewhat negative expectation” (233), a belief that ultrasound held a dark side, a potential for negative effects that would escape general attention. Lumley, writing at a time before the published findings of generally positive maternal assessment of ultrasound became overwhelming, questioned the routinization of the procedure for its potential for “diagnostic toxicity” (216). Lumley (1990) treats the growing use of fetal ultrasound as motivated by the medical profession’s desires for more explicit information about the fetus—gestational age, malformations—and worries about the effects on pregnant women of this medical drive for data, especially the inevitable errors in prediction that will result in maternal anxieties. By the time of Baillie et al. (1999) and Garcia et al. (2002), however, the motive forces behind ultrasound’s growth are portrayed as reversed, with pregnant women demanding the ultrasound’s images despite research findings of little medical benefit from ultrasound’s widespread use. Garcia et al. (2002) list as another “feminist concern” the “dissonances” between feminists’ concerns about the social and psychological effects of ultrasound and the apparent popularity of ultrasound among pregnant women.

If we accept my argument that a primary purpose of any surveillance process is to provide information with which the surveillant might plan or direct future actions, knowledge about what mothers expect to learn from the ultrasound, plus additional knowledge about what they do actually feel that they learn, is important in understanding these mothers’ experience of their surveillant roles. Does ultrasound provide the sort of information mothers expect? A few studies published since the major reviews described

above inquire explicitly into the mother's conscious experience of the ultrasound exam, rather than assuming that the symptom or attitudinal changes being measured are the result of an ultrasound that occurred between measurements. One of these studies, Lalor and Devane (2007), inquired in detail into the information provision function of the ultrasound. Lalor and Devane asked a large group of mothers-to-be in Ireland who were about to undergo ultrasound what sorts of information or conclusions they expected to obtain from the procedure. Then, after the ultrasound, the researchers asked these same women what sorts of information they had obtained. Among the many factors Lalor and Devane were investigating were the sources from which women gained their information about ultrasound and the extent to which women read written information that medical clinics provided for them about ultrasound. Lalor and Devane's findings significantly complicate conclusions about mothers' experiences of ultrasound surveillance and underscore how the mother's experience of ultrasound is open to influence by a wide variety of contextual factors.

Lalor and Devance found that many of the expectations and beliefs held by mothers were consistent with what the medical profession feels to be "realistic" expectations of a routine ultrasound scan (e.g., confirmation of fetus viability, of due date estimation, and of fetal count). However, Lalor and Devane also concluded that many of the maternal expectations about what they would learn from ultrasound were significantly beyond "the limitations of the technology" (Lalor and Devane 2007, 21).

Lalor and Devane inquired about many types of information that mothers might expect from ultrasounds, from quite specific data (such as the gender of the fetus, regarded as a realistic expectation by Lalor and Devane and held by about 90% of

mothers, or the presence of Down's Syndrome, regarded as an unrealistic expectation and held by about 30% of mothers) to more general conclusions. These more general conclusions, while based on the ultrasound information, required the mothers to integrate and move beyond direct interpretations of the ultrasound data (e.g., "confirm that the baby is healthy," "more attached after the scan.") One of the more intriguing findings of the post-exam surveys was not only that mothers' held what the medical profession might consider to be unrealistic expectations of the ultrasound exam but that, for most of these mothers, these "unrealistic" expectations were met. Furthermore, the presence of these "beyond the limitations of the technology" expectations was not influenced by how (or whether) mothers were given specific information about the ultrasound by medical personnel, or by whether or not the mothers had had previous pregnancies and ultrasounds. Lalor and Devane found, for example, that over 80% of mothers expected the ultrasound to confirm that their baby was healthy and, after the ultrasound, over 90% of mothers felt that the ultrasound had done this. The researchers felt this to be an example of an "unrealistic" expectation and supported this opinion with reference to a large-scale study that concluded that only about 55% of babies delivered with congenital abnormalities had these abnormalities detected by routine ultrasound exams. However, Lalor and Devane did not provide information about whether these mothers holding such "unrealistic" beliefs about the powers of ultrasound had access to information specific to ultrasound's technical limitations. Before actually receiving an ultrasound, over 90% of mothers expected that the ultrasound would make them "less worried about baby's health"—after the ultrasound, close to 98% of mothers judged themselves less worried.

Lalor does not discuss at all one of the most "psychological" of ultrasound effects addressed in her surveys, the mothers' expectations and experiences of "attachment." About 83% of mothers in her sample expected to "be more attached after the scan" while only about 65% of mothers reported this actually to be the case after the scan. Apart from what this suggests about how mothers might have interpreted the actual experience of the ultrasound, this finding supports the conclusion that, as a group, mothers were not simply confirming unrealistic positive expectations via their ultrasound experiences. Presumably the expectation that one would feel more attached to the fetus after the ultrasound scan was a positive one for mothers, but this expectation was not met for a minority of women.

From their medical perspective, Lalor and Devane discussed their findings in terms of the need for more precise information provision to mothers about the capabilities and limitations of ultrasound exams in the second trimester. They expressed concern that these mothers seemed to have significantly unrealistic expectations about the sort of information a routine ultrasound could provide. Among the mistaken beliefs Lalor and Devane identified, the authors gave the most attention to discussion of the mothers' exaggerated beliefs in the ultrasound's abilities to demonstrate the overall health and the lack of genetic abnormalities of the fetus. About the apparent conclusion that mothers received more comfort about the health of the fetus than doctors felt was warranted by the information provided by the procedure, the researchers concluded, "the psychological consequences of this finding warrant further evaluation" (Lalor and Devane 2007, 21).

The medical literature has tended to concentrate on the effects of ultrasounds on some end-state, such as fetal health or mother's "attachment," rather than on the ways in

which parents might use or process their ultrasound viewing experience. The perspective of the medical research literature on fetal ultrasounds acknowledges that women find the procedure generally desirable, though it is unable to identify any specific positive effects that might explain this desirability. For low risk pregnancies without identified dangers the routine use of ultrasounds has not been shown to improve the health and safety of pregnancy for either the fetus or the mother. It does not support the belief, widely promoted in the period from the mid-1970s through the late 1980s, when ultrasound had its most rapid growth, that ultrasounds promote greater maternal attachment to the fetus than would occur without the use of the device.

Pregnancy can be a time of high excitement and anticipation, as well as a time of high anxiety. It is not necessarily a statement of a woman's lack of independent thought or action that she would seek to utilize all available resources to minimize risks to her developing fetus, even if these risks are statistically slight or her help-seeking behaviors not fully "rational" from a strict cost-benefit perspective. Even the decision to place oneself under the care of a rather controlling and surveilling medical establishment can be an act of self-assertion, if the woman is convinced that the medical services in which she participates share many of her same outcome goals. Among the other functions of ultrasound, it offers a glimpse of the coming child, along with, perhaps, a picture to be shared among friends and family, a focal point for social relatedness and mutual pleasant anticipation. These social relations and mutual pleasant anticipations undoubtedly occurred before the ubiquity of ultrasound, just as there was medical surveillance of and technologically-generated knowledge about the developing fetus before ultrasound. As

with most communication media (and communicative processes more generally), ultrasound surveillance can be ritual as well as transmission (Carey 1988).

The brief "glimpse of the coming child" ultrasound provides might not have an effect strong enough to register a unique contribution among the numerous experiences of a particular woman's routine pregnancy, but that does not mean that the ultrasound is without important effects. The ultrasound is an especially "slippery" surveillance technology. In many cases there is an open battle over who is occupying the surveillant role, who is in control of the surveillance process, and who is making use of its information. A communication technology with "brief" individual psychological effects can nevertheless have significant social impact. This will be seen again when we look at the role of ultrasound within the debate over abortion in the United States.

We're All Surveillants Now: Fetal Ultrasound and "Fetal Rights"

Advocates for the restriction of abortion rights have used the fetal ultrasound procedure and images from it to try to convince their audience that abortion should be limited or outlawed. These advocates assume that the viewing of ultrasound images will have a powerful effect in the direction of causing the viewer to ascribe characteristics of "personhood" to the fetus (Zechmeister, 2001) that they might not have considered before viewing the ultrasound. This recalls Goldberg's (2000) comment that physicians viewing early ultrasound images were moved to regard the fetus as their patient in ways they had not done before ultrasound.

The general strategy of those in favor of restricting or eliminating the right to an abortion seems to include the ascription of as many characteristics of the infant child as possible to the fetus. The fetus is then explicitly argued to have equivalent legal and

moral status to the infant child. An alternative tactic avoids directly arguing for this fetus-infant equivalence, but assumes that this equivalence will build in the viewer through the power of the fetal images. The use of fetal ultrasound images allows this argument of equivalence to be made through the viewer's own empathic equation of the fetal image and infancy. Allowing the pictures to lead the viewer to his or her own conclusions about the equivalence of fetuses and infants sidesteps some of the finer points of argument that would have to be stated explicitly if the argument was made more linguistically. The extra-linguistic aspects of the visual argument may make the identification of points of disagreement with the equivalence contention more difficult.

The use of ultrasound to influence opinions and decisions about abortion has moved beyond the use of fetal images in anti-abortion literature to state mandates that pregnant women be required to undergo and, in some cases, to actively view the images of an ultrasound examination of the fetus before being allowed to abort the pregnancy. Currently at least thirteen states in the U.S. have some requirement for an ultrasound procedure before an abortion is allowed (Off Our Backs 2007), while newer legislation has tried to compelled the pregnant woman not just to undergo the procedure but to take in the ultrasound information. These newer laws have mandated the pregnant woman's viewing of the ultrasound images and/or discussion of details of the "examination" with the physician prior to any abortion. While pregnant women are obviously the main target of these laws, they are not the only target of some of these laws' compulsions. A recent Oklahoma law requires a physician to answer thirty-eight specific questions about each procedure before performing an abortion (Leland 2010).

In contrast to the medical research literature, which has so far had great difficultly identifying any specific effects on mothers from viewing ultrasound images, the debate over abortion rights seems to assume a strong effect from the procedure and its images. Those in favor of abortion rights also seem also to acknowledge the power of fetal ultrasound images to induce this personhood-ascription process, since they strongly criticize the use of these images by anti-abortion activists. Petchesky (1987), for example, makes the point that, from the perspective of advocating a woman's right to have an elective abortion, what is important is not so much whether or not maternal attachment to the fetus is accelerated by the viewing of the ultrasound, but whether or not this viewing is used to "obstruct or harass an abortion decision" (285). But Petchesky goes on to cite the ultrasound's presumed psychological effect on the mother as the primary means by which ultrasound is used to harass or obstruct. She criticizes laws mandating the woman's viewing of the fetal ultrasound as part of the abortion procedure using language that clearly conveys the implied power of the images: "...there is no reason any woman's abortion decision should be *tortured* in this way" [emphasis added] (285).

Feminist questioning of the use of ultrasound images goes beyond criticism of their use in overt or covert anti-abortion efforts. Much of this criticism still hinges on the implication that the fetal ultrasound image carries significant power to manipulate personhood ascriptions, either of the fetus or of the mother. Because subject status is not an objective "given" of the world that we discover, this argument goes, but an active effort of the construer, this construal effort is likely to ideologically driven. This is especially true when, as is usually the case, the construer is in the midst of and largely unaware of the ideologies directing the construal. Because of this tendency for subject

ascription to be ideologically driven, feminist critics suspect that the effects of the uses to which ultrasounds and their images are put will be to support the dominant paradigm, i.e., patriarchy and, therefore, to disempower women. An important assumption within this argument seems to be that the balance of power within the mother-fetus dyad is a "zero-sum game"—any characteristics, especially any "rights," ascribed to the fetus as a separate entity from the mother come at the expense of the mother's power and independence.

Even in the absence of specific rights granted to the fetus, some critics contend that the very process or availability of fetal ultrasound technology alters (for the worse) the identity and power of the woman. A study by Sandelowski (1994) illustrates the negative effects of the changes in characteristics ascribed to the *mother* as a result of fetal ultrasounds. Sandelowski argues that fetal ultrasounds change the relationship of both parents to the fetus, but that this change more clearly benefits the father than the mother. For the father, ultrasounds function as a "prosthetic device," giving him access to the mother's womb from which he would otherwise be completely excluded. Sandelowski notes that this access, and the power it confirms, is extended not only to the father but to everyone given access to the ultrasound images, including the physician and, if the couple so directs, relatives or friends—in Sandelowski's words, all "nonpregnant inquirers" (234). For the mother, however, ultrasounds offer only a different sort of access, not an exclusive one. In fact, Sandelowski argues, the presence of the ultrasound privileges the technological image as more objective, accurate, and scientific than the woman's direct interioceptive sensory information, a privileging that the woman is also encouraged to adopt. Because of this privileging of the technological, the man and the

woman stand in equivalent relation to the fetal ultrasound image: both are spectators of the ultrasound surveillance and the mother's special status in relation to the fetus, because of the fetus's location inside her body, is largely lost.

Mitchell and Georges (1998) point out that the influence of this position change on parental ascriptions of personhood to the fetus is dependent on the cultural context in which the ultrasonography occurs. These authors analyzed the effects of fetal ultrasounds across two distinct cultures (Canada and Greece) and concluded that personhood ascription from ultrasounds can be influenced by important contextual markers such as race, class, or culture.

Several of Mitchell and Georges's observations are noteworthy in light of the power presumed to reside in the viewing of the fetal ultrasound images by both sides of the abortion debate. Mitchell and Georges found ultrasound usage to be similarly routine during prenatal care in both Canada and Greece, so differences observed in parental responses cannot be attributed to variations in the normalcy of ultrasounds within the cultures. Most Greeks belong to the Greek Orthodox Church, which teaches that the soul is acquired at the moment of conception. The Church's official stance also equates abortion with the sin of murder. Despite these public positions, abortion is more common and opposition to abortion more muted in Greece than in Canada. Mitchell and George observed that Greek women, compared to their Canadian counterparts, were similarly relieved by the reports of physical integrity resulting from the ultrasound examinations but generally failed to attribute to the fetus any particular subjective characteristics, or any qualities that might mark it as a separate individual. The authors noted that the ultrasound examination tends to be conducted significantly differently in Greece. The

pregnant woman attends much less to the fetal image and the doctor offers much less commentary during the examination compared to the similar procedure in Canada. Mitchell and Georges do not feel that there is a causal relationship between this difference in ultrasound technique and the differences they observed in women's tendencies to ascribe identity characteristics to the fetuses. Rather, both the ultrasound practices and the (lack of) personhood ascription in Greece result from a more basic way in which Greek society constructs personhood. Individual subjectivity and agency are much less valued. Person definition comes in terms of his or her place within interpersonal relationship groups such as the family (Mitchell and Georges 1998). Greek mothers-to-be, this analysis suggests, do not enter into the ultrasound examination expecting to emerge with any indications that the fetus is an autonomous individual and, unlike women in North America, there is little social pressure or precedent for them to ascribe characteristics suggestive of a distinct identity to the fetus. These different cultural practices lead Greek women to experience the ultrasound differently than their Canadian counterparts.

Greek and North American cultures also differ significantly in the frequency of public fetal imagery (Mitchell and Georges 1998). While images of the fetus are rarely seen in Greek society apart from the actual ultrasound examination, fetal ultrasound images appear extensively in North America as part of the abortion debate (Petchesky 1987), as a variant of family photography (Larkin 2006), or even as advertising images (Taylor 1992). Even if a particular woman in North America has not paid much attention to ultrasound images in the past, the fact of ultrasound images, their very existence and the technological achievement they represent, are apt to seem relatively more routine to

an individual coming from a culture in which such images are part of the public landscape. This "routineness" of the ultrasound images may serve to give them a legitimacy and "normalcy" which serves to increase their impact as an impetus for personhood ascriptions for North American mothers-to-be. That is, the prevalence of the ultrasound image may render more opaque its technological and constructed basis, making it easier for observers in North America to make the leap from fetal image to the actual fetus. This, combined with the cultural support within North America for construing the fetus as an individualized "social actor" (Mitchell and Georges 1998, 119), might lead North American women (and men) to ascribe personhood characteristics to the fetus at a much higher rate than do women in Greece.

The debate over the impact of fetal ultrasound images on the viewer and the uses to which these images can be put is considerably more than "academic." In January, 2007, legislators in the South Carolina introduced a bill that would compel physicians preparing to perform an abortion to first perform a fetal ultrasound. The proposed law would also compel the pregnant woman to view these ultrasound images before she could obtain an abortion (South Carolina Legislature). The proposed law mandates a waiting period of at least one hour between the woman's viewing of the ultrasound and the abortion procedure. While the law "explains" that the purpose of this ultrasound is to "verify the probable gestational age of the embryo or fetus" (South Carolina Legislature), no additional explanation is offered for the law's requirement that the woman view the ultrasound image (the physician makes the determination of "probable gestational age") or for the requirement that the woman receive and sign a form saying that she has read and reviewed the following statement: "You have the right to review printed materials

prepared by the State of South Carolina which describe fetal development, list agencies which offer alternatives to abortion, and describe medical assistance benefits which may be available for prenatal care, childbirth, and neonatal care" (South Carolina Legislature).

Ghosh (2008) reports that in some areas of India, entrepreneurs travel to remote villages in vans equipped with ultrasound to provide quick and inexpensive fetal gender determinations. He argues that female fetuses are selectively targeted for abortion by many parents, that this practice is medically unethical, and that additional restrictions on ultrasound are needed to reduce this practice. The proposed South Carolina bill (which failed to pass on its final vote that year) and a similar law in Oklahoma, which did pass but which was then voided by the court on a technicality and never enforced, would have *required* that women seeking abortion view an ultrasound image. In the cases of both the South Carolina (National Conference of State Legislatures 2007) and the Oklahoma (McKinley 2009) laws, proponents of the mandatory viewing laws opined in public that additional information about the fetus provided by ultrasound would encourage women to reconsider and change their abortion decisions. That is, ultrasound might decrease abortions. Dr. Ghosh is certain that ultrasound information is being used in a way that increases the likelihood of abortions. Abortion remains a legal option in South Carolina and Oklahoma, as it does in India. What explains such opposite worries about the same surveillance procedure? Based on the work of Mitchell and Georges (1998), we might hypothesize that ultrasound actually induces different psychological effects in its viewers in the different social settings of India and the United States. This way, both of these views of opposite ultrasound effects could be correct.

Considered as a surveillance practice, fetal ultrasound provides information that will serve a plan of action. It is the pregnant woman's potential plans of action that abortion opponents and proponents are seeking to influence. In the Indian examples discussed by Ghosh (2008), women appear to be actively seeking focused surveillance information and to have specific "action plans" in place to make use of that information in ways that concern Dr. Ghosh. The women envisioned in the South Carolina and Oklahoma legislations seem to be undergoing the same "medical procedure" as the women in India, but, from a surveillance perspective, these American pregnant woman are undergoing something quite different. First, women in the United States example become targets of state surveillance at the same time that they appear to be watchers within the ultrasound process. The compelled exposure to ultrasound information in the case of the United States women is the result of the state's exercise of its surveillance power, in this case by compelling physicians to act as state proxies to insure that women received the ultrasound information. Second, this compulsory watching seeks to force a particular plan of action from the woman, by engendering feelings for the fetus that will halt plans for an abortion. While both state laws required that the ultrasound screen be directed toward the pregnant woman, the Oklahoma legislation specifically allowed the woman to avert her gaze (McKinley 2009), while the South Carolina legislation carried no such allowance. The South Carolina law, then, not only forced women into the target role, it forced physicians into the surveillant role, making them the arbiter of the woman's compliance with the forced envisioning. In these cases, proponents of these bills are assuming that, for many women, information exposure will lead directly to the women's

implementation of the "action plan" desired by the proponents, i.e., the decision to forego the abortion and continue the pregnancy.

As we have discussed above, the medical research literature shows a lack of discernable maternal "bonding" effects from ultrasound. This finding seems to suggest that these mandatory ultrasound viewing laws will fail to support abortion opponents' hopes for the powers of ultrasound to compel women's behaviors. However, the immediate abortion decision that the states seeks to control with these laws may have little to do with maternal "bonding," at least in terms of how it is commonly understood, as a developing process of emotional attachment between mother and child. Perhaps an instantaneous construction of fetal "personhood" is all that is required for pregnant woman to override their abortion plans in the direction desired by abortion opponents. Perhaps such immediate or short-term effects do come from exposure to the ultrasound information, even if more complex "bonding" does not. Recent public statements by anti-abortion advocates talk about mandatory ultrasound in terms of desiring to "insure that women have full knowledge of the procedure they are about to undergo" (Krajacic 2010) rather than explicitly in terms of bonding or attachment. Krajacic (2010) moves even further from any reference to connection between woman and fetus linked to ultrasound viewing, ultimately calling for mandatory viewing of a ultrasound recording of an abortion before a woman is allowed to have her own abortion.

Wiebe and Adams (2009) provide one of the few empirical studies of women's reactions to ultrasounds of the fetus specifically in the context of abortion. The pregnant women in the Wiebe and Adams study were seeking abortions at one of the two clinics. Ultrasound before abortions was a routine procedure at both clinics before this study

began, though prior to this study the women were only "inconsistently" (97) asked whether or not they wished to view the ultrasound. As part of Wiebe and Adams's procedure, doctors at both clinics offered each woman access to her ultrasound.

Contrary to what might be expected from the arguments presented by both proponents and opponents of abortion rights, given the choice, a significant majority (72.6%) of the women in this study requested to view the ultrasound images. Of the women who did view their ultrasound, over 85% found it to be a positive experience, with over 80% saying that it did not make the abortion more difficult emotionally. No women viewing the ultrasound changed their decision to have the abortion (Wiebe and Adams 2009).

Six weeks after the abortion procedures, Wiebe and Adams contacted a small portion of their original sample to conduct detailed interviews of the women's extended responses to the abortions and to the ultrasounds. The researchers reported that half (10) of this subsample declined the interview request, but they reported no characteristics that might distinguish this group from those who agreed. All ten women interviewed reported a desire for more verbal descriptions and explanations of the ultrasound images before the abortion. These women, who also reported themselves to be coping well, all also felt that ultrasound should be offered as an option to everyone before an abortion, and all felt that viewing the ultrasound had been "beneficial" to them (Weibe and Adams 2009, 101).

Weibe and Adams noted several cautions that might influence the generalizability of their findings. Principal among these cautions was the context provided by the clinics and medical staff of the study, which made each of the clinics "a supportive environment that made it possible for [women] to talk about their feelings. In a less supportive

surrounding, the experience may be different" (Weibe and Adams 2009, 101). A significant aspect of this supportive feeling is likely to be that ultrasound viewing was an option for women in this study, rather than a mandate. While less 30% of women in the Weibe and Adams study declined to view their ultrasound before the abortion, having this as an option must certainly effect women's perceptions of the procedure. The authors also noted the 50% refusal rate for participation in the follow-up interview, and they have no information about longer-term reflections from this group. Despite these concerns about generalizability, these results do suggest that viewing the ultrasound, even as a direct preliminary to an abortion procedure, does not necessarily change the woman's decision. It seems that in many cases it might actually be of benefit to her. The authors noted that both clinics involved in their study have since changed their routine procedures to give all women the option of viewing the ultrasound before an abortion.

Conclusions

Fetal ultrasound went from an unusual to a routine procedure in United States obstetrical care in less than a decade from the mid-1970s to the mid-1980s. Official policies of health insurance companies and medical professional organizations discouraged routine use of fetal ultrasound, but the procedure's utility for doctors and desirability for parents combined to make fetal ultrasound part of the norm of contemporary prenatal care.

Fetal ultrasound is an example of a surveillance medium in with multiple, sometimes overlapping, purposes and roles. The pregnant woman's position is especially fuzzy, as she may be considered watcher, target, and location of the surveillance. She is usually dependent on medical or technical experts for interpretation of surveillance data,

but she also derives her own meanings from the surveillance. In the early days of fetal ultrasounds, some physicians felt that the grainy images of fetal ultrasound caused them to see the fetus in a new way, as an individual more distinct from the pregnant woman. This idea that ultrasonic images help to produce fetal personhood in the minds of viewers has continued to have an important place in American culture. Those in favor of reducing or eliminating legal abortions have passed laws in some states mandating fetal ultrasounds before abortions.

Well-designed research studies have found it difficult to identify specific effects from viewing fetal ultrasound. The ideas that viewing fetal ultrasounds might reduce maternal anxiety during pregnancy, that it might promote maternal bonding with the coming child, and that it might lead the pregnant woman to live in a healthier way during the pregnancy, have all been studied, but none of these effects seems to show up routinely in a measureable way. Medical research and physician reports both suggest that pregnant women strongly desire to have fetal ultrasounds during pregnancy, but the result has not been very helpful in pinpointing the reasons for this desire. Pregnant women seem to appreciate what physicians can tell them about the fetus from the ultrasound, but they also make their own judgments about both the physician conclusions and ultrasonic images. Empirical research on fetal ultrasound has tended to neglect its ritual functions and to pronounce ultrasound ineffective when ultrasound fails to demonstrate a clear transmission-type effect.

The fuzziness of the roles, functions, and effects of fetal ultrasound underscore how surveillance processes can only be accurately understood when the information-generating capacity of the surveillance technology is placed within the wider context of

the watcher's plan of action—what the watcher tries to do with the surveillance information. The "same" surveillance process can become many different processes when the goals and desires of watchers diverge (or even when the same watcher's goals and desires change across time).

Fetal ultrasound provides a techno-visual access where touch and bodily sensations used to constitute the primary sources of information. Ultrasound provides a different perspective on the pregnancy, one that is simultaneously more intimate and more objectifying than what any of the watchers had before it became routine. This new generator of information makes for new possibilities and new responsibilities for all of those involved. As with many surveillance technologies, these new potentials seem to offer powers to the watchers, so fetal ultrasound raises the stakes around who may control fetal information. The link between information and purpose in surveillance is intimate. In surveillance, information is never really just information. Fetal ultrasounds show how information is liberty, identity, and power.

CHAPTER FIVE
RAISING ANXIETIES: THE BABY MONITOR AS ANXIETY TECHNOLOGY

> Technology tells us much about the social construction of the tasks and roles it is designed to implement.
>
> Rachel Maines, *The Technology of Orgasm*

There is active research and lively debate in the literature on the sociology of the family on many aspects of the topic of "anxious parents." Some observers believe that parents in America in the last quarter of the 20th century grew significantly more anxious about their children and about their own childrearing efforts. An entire generation of parents became simultaneously more involved in the minute details of their children's lives and more dissatisfied with the role of parent (Stearns 2003). Researchers linked anxious parenting not just to discomforts and dissatisfactions within the parents themselves, but also to problematic parenting practices (Stearns 2003, Zelkowitz, Bardin and Papageorgiou 2007). Perhaps it is not surprising, given that this increased parenting anxiety may be rooted in a self-critique of their own parenting efforts, but anxious parenting has also been linked to a host of childhood problems and pathologies such as childhood depression (Muris et al. 2004), anxiety (Whaley, Pinto and Sigman 1999, Gruner, Muris and Merkelbach 1999), poor behavior control (Williams et al. 2009), and "intolerance of uncertainty" (Zlomke and Young 2009).[1]

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[1] This rise in parenting anxieties occurred within the context objective measures testifying to the relative safety of children in the United States. Both child (under five years old) and infant (under one year old) mortality rates decreased significantly in the 1970s and, at a slightly lesser rate, throughout the 1980s. Mortality rates for children in the United States were roughly one-sixth to one-tenth the world average mortality rates for children during the same period (http:data.worldbank.org/indicator/SH.DYN.MORT?page=5&cid=GPD_15).

Anxiety and worry are apprehensive feelings about anticipated future or imagined danger. Fear, a similar emotional unease, is associated with more objective and external threats, but the distinction between fear and anxiety is qualitative and subjective rather than absolute and objective.[2] Coincident with this rise of a particular sort of "anxious parent" has been the use by these parents of "anxiety technologies," human-created devices to which people turn for help in dealing with everyday anxieties and worries. In light of human ingenuity and inventiveness, under the right circumstances almost anything *might* serve as an anxiety technology. But American parents in the last quarter of the 20th century seem to have been especially attracted to surveillance technologies and practices for help in calming their worries. This chapter explores the attractions of a popular parenting gadget with explicit surveillance intent: the baby monitor.

An anxiety technology attracts its users because it seems to reduce risk. Something "becomes" (is made by people into) an anxiety technology because of a combination of the object's technical capabilities and the experiences, hopes, and dreams people associate with those capabilities. Since anxiety itself is importantly a matter of perception and belief, the perceptions and beliefs about a technology's capabilities are at least as important in defining something as an anxiety technology as any "objective" capacities the technology might possess. Whether or not the technology fulfills promises

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[2] Jemerin, J.M. 2003. Fears: Worries to anxieties. In ed. W.T. Boyce and J.P. Shonkoff, Developmental-Behavioral Pediatrics. In ed. Colin D. Rudolph, Abraham M. Rudolph, Margaret K. Hostetter, George Lister, and Norman J. Siegel, *Rudolph's Pediatrics—21st Edition*. New York: McGraw-Hill Medical Publishing. Retrieved on 19 February 2010 from http://online.statref.com.proxy.lib.uiowa.edu/document.aspx?fxid=13&docid=339. Jemerin provided these definitions of "anxiety," "worry," and "fear," but this author, rather than Jemerin, should be held responsible for the statement that distinctions between the three are qualitative and subjective ones.

of anxiety reduction is a separate and distinct issue from the existence of the promise itself. The "promise of anxiety reduction" that makes something into an anxiety technology can be made by any of a host of characters: users, potential users, manufacturers, advertisers, or salespeople of the device. Other opinions, such as "common sense," which appear to be less tethered to any particular individual or special interest, can also contribute to the construction of something as an anxiety technology.

The baby monitor is a prototypical example of a communication-based anxiety technology. The basic baby monitor uses a microphone and relatively weak radio transmitter located near the child to convey the child's sounds continuously to a caregiver with a receiver. While this most basic set-up remains available, and is the least expensive, monitor technology is evolving rapidly. Within the past decade, "talk back" features have become common, turning the monitors into two-way communication devices. Video baby monitors have also become more popular and several models are now available priced at less than $150. Some newer models feature motion-sensing functions that signal the infant's tiniest movements and alarm when they detect no motion for 20 seconds. Marketed almost exclusively to new or expecting parents (or those seeking gifts for new or expecting parents), baby monitors seem to be an inexpensive and easy way to extend the protective parental gaze. They are a popular gift to give the expecting parents at a baby shower, and they are big business in the United States. In 2004, there were 4.1 million baby monitors sold in the United States[3], equal to the number of live births in the U.S. that year (Martin et al., 2006).

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[3] Baby monitor manufactures guard their sales data quite closely. The president of the manufacturer's association somewhat grudgingly provided this figure in a handwritten note across a letter to the author from Baker in 2006. Ms. Baker, the main secretary for

Baby monitors embody concerns and conflicts at the nexus of parenting, risk, and surveillance. They address some of the nervousness of parents confronting the daunting responsibility of shepherding dependent, vulnerable children through the early stages of development. They also illustrate how a technological expansion of human capacities can result in a reorganized way in which the world is experienced. The safety concerns that result in a demand for baby monitors depend on many socio-cultural-economic factors, all the factors that contribute to parents being physically separated from the infant for lengthy periods, while still close enough to make use of the simple transmission capabilities of the device. (Cell phones have overcome this latter limitation—there is a baby monitor iPhone app.) For some parents, their child's time "out of sight," and the anxieties of both parties about this separation, seemed to be the inevitable consequences of the conflicting demands of parenthood and adulthood (as well as parenthood and architecture)—"inevitable," that is, until baby monitors came along. The baby monitor seems to promise new parenting power that makes the parental half of this anxiety (or the life compromises necessary to avoid it) unnecessary. Wearable receivers promise the caregiver intimate access to the baby's faintest cries, as the caregiver carries on with life up to one-quarter of a mile away. Research psychologists have acknowledged acclimation to separation, including both the realization that separation is temporary and tolerating the frustration and anxieties that separation might produce, to be an important developmental task for the child. There is less research focus on how parents cope with

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the manufacturer's association, was explaining for the second time in this letter that specific sales data was not released outside of the association—and that the author could not join the manufacturer's association unless he was actually a manufacturer or distributor of the device.

their side of the separation. The effects of parental use of baby monitors on any aspect of this process have been unexplored until now.

Surveillance and Expanding Responsibility: From "Surveillance Medicine" to "Surveillance Parenting"

How are we to understand the growing attraction of surveillance technologies and practices to American parents in the late twentieth century? A similar phenomenon that began many years earlier in the medical field offers some clues. Armstrong (1995) has described the development of "surveillance medicine" in the United States across the twentieth century. As medicine has linked expanding spheres of human activity to illness, it has sought to increase the range of its knowledge and influence to cover these expanded spheres. One important development in this expansion, according to Armstrong, is medicine's "problematisation of the normal" (Armstrong 1995, 395). "Problematisation of the normal" involves looking at common or everyday situations in terms of their pathological potential, either as active contributors to developing problems or as early signs of what will later become more serious concerns. Armstrong gives as the prototypical example of problematisation of the normal medicine's increasing attention to child development throughout the twentieth century. Child development by definition involves ongoing growth and change, "therefore a constant threat that proper stages might not be negotiated that in its turn justified close medical observation" (Armstrong 1995, 396). Medicine's focus expanded beyond attention to ill children to include regular inspection of all children, and beyond treatment of specific physical symptoms to involvement in child nutrition and child mental health. As we have discussed in previous chapters, many critics of increasing "medicalization" see this

encroachment of medicine into more and more aspects of daily life in terms of a "power grab" by organized medicine to increase their political and economic power. We could also, and somewhat more charitably, see this as part of medicine's attempt to identify and address causes of illness and distress that originate beyond the individual level. Of course, both of these explanations could simultaneously be true.

Armstrong (1995) links the rise of surveillance medicine with a growing recognition of "the ubiquity of illness" (397), an expansion of the concept to illness beyond symptoms and distress to encompass deviations from statistical norms, or even deviations from what physicians might decide are best practices. While organized medicine certainly supported this concept expansion, Armstrong believes that government and the public actively embraced this idea. Armstrong observes that once these expansions of the proper subjects of medicine were accepted to include normal development and population monitoring, "the patient was inseparable from the person because all persons were becoming patients" (Armstrong 1995, 397). Surveillance medicine, Armstrong notes, collects survey data and establishes population statistics. It introduces ideas such as "subjective health measures" and "sub-clinical manifestations." All of these ideas and actions contribute to a view of illness as a continuum (onto which everyone can be placed), rather than a binary categorization of people into healthy and ill (which would exclude some portion of the population from medicine's attention).

This expansion of the idea of illness beyond symptoms and beyond that which is to be treated in a hospital or doctor's office, whatever one sees as its original motives, supported continuing expansion of medicine's field of responsibility. In Armstrong's account, the population monitoring of surveillance medicine was both a contributor to

and a response to this expanding scope of responsibility. Changing ideas about risk and causation provoked surveillance efforts, such as data collection, that might allow organized medicine to get a better handle on these risks and causes. The results of this surveillance supported further expansion of what might constitute causes or risks, which in turn promoted additional and expanded surveillance efforts. One of the important outcomes of these ongoing processes, according to Armstrong, is surveillance medicine's creation of "a different sort of identity" (Armstrong 1995, 403). This new identity locates the person not so much in a three-dimensional body (one that is either well or ill, functioning or not functioning), but as a four-dimensional "risky self," an intersection of the corporeal body with "the never-ending computation of multiple and interrelated risks" (403).

My main purpose in presenting Armstrong's argument in such detail is to note the intimate placement of medicine's surveillance efforts within its expansion of responsibility. Medicine's surveillance efforts and responsibility expansion are intertwined and mutually reinforcing. Armstrong's account supports the conclusion that expansions of surveillance and responsibility went hand-in-hand. It also supports the importance of the parallel expansion of ideas of risk, both within the field of medicine and within the population more generally. This increasing attention to multiple sources of risk provided important motivational and ideational (by which I mean here both "ideological" and "explanatory") support for medicine's surveillance efforts, while the surveillance efforts also contributed to expanding notions of what might contribute to risk.

A very similar expansion of responsibility, risk, and surveillance at the more intimate scale of parenting has occurred within the nuclear family. *What to Expect When*

You're Expecting, fetal ultrasound, and this chapter's focus, baby monitors, all grew in popularity in part because they offered surveillance strategies and capabilities to a population of parents immersed in expanding notions about what might prove risky to their offspring. Accompanying this growth in recognition and definition of risk was a similar expansion in parents' senses of responsibility. Though parents' motives were likely very different than those of organized medicine, this broadening of responsibility also involved its own "problematisation of the normal." Parents felt that they could and should control an increasingly large range of risks to children—"good" parenting importantly expanded to included identifying, containing, and controlling these new risks. Operating in an atmosphere of expanded risk and demands for risk control, offers of surveillance capacities are quite attractive to parents. Surveillance practices seem to offer, and often do offer, information gathering that can be useful in making safety-related parenting decisions. As Armstrong (1995) observed in the case of "surveillence medicine," expanding surveillance capabilities do not simply serve established responsibilities, they help to expand these responsibilities. "Surveillance parenting" is also an interacting, mutually reinforcing growth of responsibility construction and surveillance practices. Parenting concerns, even ones as simple as how to keep an eye on the baby while also getting your housework done, concerns that previous generations of parents, by necessity, learned to accommodate to by compromises in expectations or behaviors, became defined as problems in need of technological solutions.

Baby monitors were one such modern solution, a surveillance technology that seems to offer the parent the ability to be in two places at once, to simultaneously mind the baby and enjoy the garden, with no compromise to either activity.

Tracking the Baby Monitor

A brief news item in the June 1919 Popular Mechanics is the first published mention of a technology resembling the contemporary baby monitor. Accompanying the story, "Dictaphone Calls Mother When Baby Cries," are two small photographs. The picture on the right shows a smiling mother at the head of her baby's crib. Baby is resting safely and soundly under the watchful gaze of both mother and Dictaphone microphone, both at the ready near the head of the baby's crib. In the left-hand picture, Mother relaxes and reads in a comfy chair, a large megaphone perching somewhat menacingly over her shoulder. The text explains that the crib is "in the nursery upstairs" while the megaphone is "placed in the parlor below" and that "the arrangement works to everyone's satisfaction."

The 1919 baby monitor, "the gift of an ingenious husband to his wife," modified technology used by bosses to communicate with the secretaries who took their dictation. "Everyone's satisfaction" that the monitor promoted, as it turned out, was that "mother may go about her housework, while baby will sleep soundly, undisturbed by the noise of the living rooms." In addition to aiding the mother's housework productivity, the monitor will actually increase the mother's responsiveness to her child: "his demands will be heard instantly through the house."

The Zenith Radio Corporation was the first to transform the "ingenious" promise of the baby monitor into a commercial product when it introduced the "Radio Nurse" in 1938 ("A New Radio Nurse" 1938). Accompanying the introduction was a $500,000

advertising campaign (roughly $7.5 million 2010 dollars[4]) across radio, newspapers, and magazines ("To Promote New Sound Device" 1938). By the following year, the Zenith's Radio Nurse had attracted at least one competitor, the Elkay Manufacturing Company's "Elkay Two-Way Communicator." Advertisements for both devices emphasized the devices' power to contribute to the "peace of mind" of parents: a common Zenith ad showed the mother reading peacefully and the father preparing a cigarette while the baby sleeps contentedly in another room. The 1939 ad for the Elkay baby monitor shows a mother lying awake, anxious in bed as she imagines her crying infant. The Elkay ad assures the mother that, once technologized, she will be able to "sleep, play bridge, or enjoy your garden with comforting assurance." The slogan appearing on the label of the Zenith monitor proclaims it, "The Guardian Who Never Sleeps."

While the Zenith monitor has retained some fame as a design object, virtually nothing has been written about its technical or social origins. A brief, unsigned description of the Zenith monitor on the Victoria and Albert Museum website states without citation that the monitor was first commissioned by Zenith's president in order to monitor his daughter on his yacht (Victoria and Albert Museum). The Japanese-American designer Isamu Noguchi, who applied for a design patent in 1937, designed the speaker end of the monitoring system, the unit sitting out with the adults.

These devices seem to have vanished from the market quickly. They are extremely rare and only a few copies exist. The only explanation I have been able to find is offered by Mike Shultz on the radio enthusiasts' website uv201.com. Mr. Schultz, also without citation, reports that the device was withdrawn from the market and most existing

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[4] Historic equivalent calculated at www.measuringworth.com on July 9, 2010 using consumer prices as the estimating factor.

copies destroyed due to presence of Noguchi's signature on the back label of the speaker unit, which attracted anti-Japanese sentiment following the Pearl Harbor attack. This explanation presumably would not apply to the Zenith's competitor, the Elkay, but it is similarly rare.

The more likely immediate cause for the baby monitor's disappearance at the beginning of World War II was the United States government's June, 1940, action banning civilian use of portable radio transmitters operating in a range that included the baby monitors of the time (Herman, "The War Years"). The early 1940s also saw several federal government calls for donation of radio parts, like vacuum tubes, to support the war effort. This probably contributed to the poor survival rate of pre-war versions of these devices. Neither of these explanations accounts for the long delay in the baby monitor's return as a consumer product, as the U.S. government lifted most federal restrictions on civilian radiocasting of this sort by 1946 (Herman, "The War Years"). Vigorous radio and television sales after World War II may have limited manufacturers' capacities and motivations for producing baby monitors in the immediate post war years. However, the growth of larger, suburban housing and the baby boom would have contributed architectural and population factors pointing to an increased demand for baby monitors. The absence of baby monitors during this period does not seem clearly related to technological, architectural, or population-based explanations. It seems reasonable to conclude that, at the very least, an absence of demand for technologized surveillance of babies in the home significantly contributed to this absence of baby monitors in the marketplace of baby goods during the 1950s, 60s, and 70s.

The baby monitor appears to have re-entered the commercial marketplace in 1983, when the baby and child products maker Fisher-Price introduced the "Fisher-Price Nursery Monitor." Smaller and less stylish than its 1938 Zenith counterpart, the Fisher-Price monitor used the same basic idea of the Zenith unit, a low power, continuously-transmitted radio signal to a nearby radio receiver, and updated it with 1983 transistor radio technology in place of the Zenith's tube-based design. Fisher-Price began to introduce improvements to its initial design very quickly—a two-channel monitor appeared in 1984, which allowed the user to select between two transmission frequencies in hopes of reducing the interference of other, competing radio signals. (This tendency of baby monitors to pick up, or produce, unintended transmissions remains a problem to this day.) Currently, over twenty different companies distribute several dozen different baby monitor models, with varying combinations of audio, video, and motion-sensing capabilities.

Baby Monitors Ideologies: The Well-Watched Child

While the Rachel Maines quote that opened this chapter referred to a technology with a slightly different purpose, careful attention to the baby monitor can reveal much about how its users experience this intersection of surveillance and parenthood. This portion of the inquiry looks in detail at the functions users value in baby monitors, as deduced from their expressed opinions about what they like and dislike about particular baby monitor models on two popular commercial internet sites, Amazon.com and Epinion.com. These websites allow users to post reviews of products offered for sale. By identifying what characteristics users find important in baby monitors, we can gain valuable information not only about the role of the baby monitor in the day-to-day

functioning of the family, but also about the views of monitors users toward parenthood itself.

Several cautions are in order concerning the information in this section. Most straightforwardly, of course, the reader might disagree with my interpretations of the data from these consumer reviews and counterclaim that different needs and beliefs (or even no needs and beliefs) are expressed by these reviews. I hope that the arguments and examples I put forward will be convincing in this regard. Another clear area of concern, which I do address in what follows, but which, nevertheless remains a worry that I share, is the possibility that people who post their opinions on internet sites are not representative of the millions of users to whom we have no access. A third caution, related to the second but in some ways perhaps even more difficult to counter, is that internet reviewers are contemporary to the present era, and so may differ in many ways from parents of the 1980s period when baby monitors seem to have gained popularity. "Ancient" internet product reviews are less than ten years old. Some of the users these reviews represent may have grown up as targets of their own parent's baby monitors. In any case, the middle class parenting landscape now much more firmly and routinely includes the baby monitor than it did in 1980. How these more contemporary parents use and experience baby monitors may be significantly different from those of parents in the 1980s for whom baby monitors represented a new technology. So I must acknowledge that in what follows, to the extent I am successful, I am characterizing the "uses and gratifications" contemporary users experience with baby monitors.

On the Internet commercial websites, customer review authors comment on how the different technical capabilities of different baby monitor models serve, or fail to serve,

their needs. They often explicitly compare their model to others on the market, discussing why their particular model is a good or bad choice in relation to the capabilities of other models. Collectively, these reviews become not just reviews of the devices themselves but also reports on the technical capabilities parents value in these surveillance devices. We also hear stories about how each parent incorporates surveillance into his or her family's life.

What a particular parent must do in order to judge himself or herself to be fulfilling the duties required of parenthood, or even how important this judgment is to the parent in the first place, can be seen to vary greatly across individuals and social groups. In the United States context, parents who behave irresponsibly toward their children risk guilt and social sanction, the severity of which typically varies with the severity of the irresponsibility. "Irresponsible" behavior gets defined through a variety of social mechanisms and actors. Very crude baselines for responsible parenting behavior are encoded into legal requirements, the violations of which bring penalties imposed by agents of the state. Even these minimal legal baselines can vary considerably—three states, for example, appear to establish minimum ages, ranging from 8 in Maryland to 14 in Illinois, at which children can legally be left at home alone by parents. Ten other states offer a "suggested" minimum age, ranging from 8-12. The remaining states appear to offer no information on this subject.[5] No state or federal statues mandate or even suggest baby monitor use by parents.

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[5] All data provided by Database Systems Corporation, retrieved February 24, 2010 at http://www.latchkey-kids.com/latchkey-kids-age-limits.htm. This website also informs the reader that Database Systems Corp. provides its own automated calling service that phones "latchkey children to ensure that they are okay."

Without at all disregarding the power of state regulation to modify routine of parenting behavior (think mandatory child safety seat laws), in most instances parents in the United States get their "training" in responsible parenthood primarily from sources other than the codified regulations of the state. While many researchers have commented similarly upon the declining importance of inter-generational advice as a determiner of parenting behaviors in 20th century America, they have identified different candidates for the role of parenting influencer. The individual's personal experiences, often encoded as "common sense," still probably have major effects on parenting, as do educational, mass media, and peer experiences. Advertising, for example, often encourages parents to focus on threats to their children's safety. Technological determinists might contend that the marketplace presence of baby monitors creates increased risk awareness and a demand for the monitors' use. Social constructionists could point to the successful linking of baby monitor use to responsible parenthood by advertising, tradition, expert opinion, or other methods as important in establishing the baby monitor as a required technology of responsible parenthood. These perspectives often downplay parental agency, the idea that parents are making their own reasonably accurate assessments of their environments and are responding in reasonably effective ways to bring about their own goals. The case of the baby monitor seems to support fully neither a determinist nor a constructionist perspective. There are no public reports, for example, legal sanctions of any parent for failure to use a baby monitor in a case in which harm came to a child. As we will see below, some parents experience significant fear of their own self-condemnation—and as we have discussed in earlier chapters, much of Foucault's work points to the conclusion that self-discipline is often discipline's more effective form.

While there are many published studies about parents' emotions, cognitions, and behaviors in response to specific medical crises involving their children (Carter, Mulder, Frampton and Darlow 2007), there is less published research investigating more "routine" worries that parents have about their children's everyday safety and well-being. Even if such worries are not the primary focus of a large body of research, recall from Chapter Two that Nystrom and Ohrling (2004), looking a variety of studies on other aspects of new parenthood, identified worry as a significant recurring theme in the experiences of new parents. New parents worry about the safety and welfare of their new child, these worries are persistent, and parents notice the stress associated with these worries (Nystrom and Ohrling 2004).

The published research literature has little specific to say about the success or failure of over-the-counter baby monitors in actually helping the parents to cope with early parenting worries. The rapid evolution of baby monitor technology since 1983 suggests that private, proprietary research is probably active, at least insofar as the major monitor manufacturers play close attention to their consumers' responses to their devices. Judging from the universal lack of response with which manufacturers have greeted my inquiries, and the very limited and grudging response from the manufacturers' association, these findings are closely guarded.

Each customer review selected from Amazon.com or Epinions.com is conceptualized here as a self-report of the owner of his or her experiences with the baby monitor. Accepting for the purposes of this study that the customer review texts presented on the chosen websites are honest descriptions of the beliefs and experiences of a group of baby monitor users, this still leaves us with a major methodological issue: how

can this very large and diverse group of opinions be most accurately characterized? The sheer volume of the customer reviews of baby monitors available on Amazon.com and Epinions.com suggests that some sampling procedure will be necessary to produce a manageable number of texts, especially if, as is the case here, our goal is a detail examination of the specifics parents report. Amazon.com, for example, contains over 2000 distinct review texts spread over fifty-five different baby monitor models; thirteen of these models have over one hundred reviews each.

At this stage of the investigation of baby monitor usage, what is being sought is the broadest possible understanding of the wide array of uses and gratifications that monitors provide, with a special focus on the beliefs and behaviors evidenced in baby monitor use. The purpose of this portion of the study is to characterize how baby monitors are used, the roles baby monitors play in people's lives, and they ways baby monitors are thought about and talked about, rather than to ascertain population percentages. Proportions will be questions for a different set of research procedures.

Not all customer review texts within the two websites are equally rich in their communicative content. Many of the reviews are very brief and center only on the nominal task of any consumer review, the communication of the writer's opinion as to whether or not another potential consumer should purchase this particular manifestation of the product. These very brief reviews are typically less than five lines long and cite one very specific characteristic of the product for praise or, more frequently, for scorn. (For example, "THIS SUX, TOO MUCH STATIC, AVOID AT ALL COSTS!!!") While these very brief reviews undoubtedly have pointed and useful communicative content for some audience purposes, my initial review of these texts suggested that the baby monitor

characteristics they highlight seem consistently to be included within the longer, more detailed narratives presented in the other more nuanced and detail-rich longer customer reviews. Because of this, I decided to explore in detail only the longer customer reviews, those greater than 250 words. A few shorter reviews (about ten to twenty) for several of the monitor models with many reviews were selected at random as potential "negative case analysis" candidates. The analysis of the content of these randomly selected shorter reviews confirmed that the shorter reviews excluded by this selection procedure did not contain any substantial information neglected in the longer reviews subjected to more detailed analysis here.

Both Amazon.com and Epinion.com claim not to censor reviews for any reason other than violations of the user agreement, such as obscene content. This claim is supported by the wide range of opinions presented—it is certainly not the case that the sites only feature favorable reviews. Still, in order to guard against the introduction of biases that might lie in unknown differences between the two sites, I collected about half of the sample from each site.

Focusing my attention on these longer reviews, I sought to identify a total of about thirty total reviews using a modified random selection procedure. The thirty reviews identified by this procedure resulted in sixty-one pages of text. I searched both sites using within-site search engine using the term "baby monitors." This produced approximately 27 pages of product listings (just the product listings, not the actual reviews) on Amazon.com and 21 pages on Epinions.com. I selected pages at random, without replacement, to identify baby monitors. I then retrieved the all reviews meeting the 250-word minimum of the monitors listed on the selected pages. A few monitors

inspired an unusually high number of lengthy reviews—in order that no single device would dominate the selected texts, I elected to allow a maximum of five reviews from any single device. This restricted the number of reviews for two particular monitor models, one each from Amazon and Epinions. A few models (three) on the selected product pages had no reviews meeting minimum length criteria, so no reviews of these three models were included in this analysis. All of these "no appropriate reviews" instances were from Amazon.com.

The complete review texts that formed the data for this study are available from the author. However, both consumer web sites seem to leave reviews available for as long as they continue to sell the product and, in some instances, for months or years after the product was last available for sale, so almost all of the reviews quoted here can still be easily searched for and located on the sites.

Almost all of the authors of the thirty product reviews identified themselves in their texts as parents and as users of the baby monitors being reviewed. The only exceptions to this were two occasions in which the authors reported that they were users of an older model of the device, one review in which the reviewer identified him- or herself as a grandparent, and one review in which there was no specific relationship to a child mentioned. As the purpose of this investigation was to characterize the behaviors and beliefs of users, rather than the specific functions of particular monitor models, I included these texts in this analysis. Seventeen of the review texts were retrieved from the Amazon.com website, while thirteen came from the Epinions.com site. Author identifying information varied across the reviews. The Epinion authors, for example, listed a city or state of residence, but most also used a "screen name" that sometimes

obscured not only the writer's identity but also his or her gender as well. Many of the Amazon authors, on the other hand, "signed" their review with their "real name" (identified as such on the review). Location information self-reported by the reviewers indicated that all authors were located in the United States. From the information presented, including given names and self-identification of either the writer's or the spouse's gender, this author sample appears to be a mix of mothers and fathers, with mothers in the majority.

The thirty texts of this investigation were spread across reviews of seventeen different baby monitors. The randomization procedure pulled in commentary on several different types of monitors currently available in the United States marketplace: audio only (9 review sets), audio and video (2 sets), and audio and movement-sensing (3 sets). The three monitors selected by the random procedure but excluded because of the brevity of the reviews were all of the audio-only type.

I transferred the thirty chosen review texts into a single Word document file. I read this file many different times in order to identify places in each text where the writer mentioned incidents, behaviors, or beliefs relevant baby monitor use. I made note of consistencies across texts so that general trends within the data might become clear. However, no specific tallies or frequency counts of responses were constructed, as no claim is being made within this study that any of the opinions or behaviors identified represent a particular proportion of corresponding opinions or behaviors within the general population of baby monitor users.

In addition to this more global and qualitative assessment of textual content, I also conducted specific word searches within the entire collection of texts. These word

searches served to confirm and to supplement my observations from the detailed readings. For example, I was able to identify specific additional cases by using word searches for "SIDS" and "worry," two terms that came up frequently in the reviews.

Motives for Monitor Choice

Reviewers identified fears of specific childhood disorders, especially Sudden Infant Death Syndrome, as a major concern and as a major reason for buying a baby monitor.

> As a neonatal intensive care (NICU) nurse, I am acutely aware of the risks of a baby having apnea (stopping breathing). As a mom, I have nightmares about SIDS, suffocation, and the like. ("Mommy of Two")

> My wife used to wake up every 15 minutes or so and check to make sure the baby was still breathing. She was so very worried about SIDS, and at first she insisted the baby sleep in the same room as us so that she could keep an eye on her. ("Marc Jeffrey Miller")

> We bought this product thinking it would give us a little extra piece of mind at night so we wouldn't worry about SIDS as much. ("C. Parker")

Unsurprisingly, most of the reviewers that mentioned concerns about SIDS in particular had purchased the monitors with motion-sensing capabilities. Manufacturers market this motion-sensing function as useful in monitoring the infant's breathing regularity.

Along with this concern about a variety of biologically based dangers of infancy, many reviewers cited specific behavioral characteristics of their children that increased risk, or that otherwise made for special parenting challenges.

> From the day we brought our daughter home she decided she would ONLY sleep on her tummy. With this monitor I didn't worry so much letting her. ("Jennifer Suarez")

> But now, as my youngest son has grown, he is still in need of watchful eyes. He is on the autism spectrum, and is prone to being unaware of some dangers, and doing risky things like hanging upside down from his bed, or leaning on screens. When he is not in our sight, we still have to have all eyes on him. ("kbolton72")

Many reviewers discussed how the monitor eased (or failed to ease) their own anxieties about separation from their child. This reviewer, for example, demonstrates how the baby monitor can become intimately involved in the literal separation of mother and child, allowing the parent to do what they consider to be in the child's best interest.

> I slept with Rebecca her first 3 months of life in my bed, transitioning her to her crib was a heartbreaking process for me, but I knew that once she started rolling side to side (3 months) and then back to front and front to back (3.5 months) that the safest place for her was in her own crib. I don't think I would have been able to put her in her crib if it were not for this product - I am too much of a nervous Nellie! ("Sistapril")

Other reviewer comments underlined the "weak link" in the design of the standard baby monitor—the fact that the parents still have to make meaning from the transmitted signals by noticing signs of child distress. While some reviewers, like "Sistapril" above comment on their own weaknesses or failings, many reviewers transfer blame for slow response to the device itself. Note how "D. Vishnesky" below describes ultimately changing sleeping arrangements—and rejecting use of the baby monitor entirely—in order to address parenting worries.

> My experience with this product is limited to the nighttime use. That said, I ended up discontinuing use of this product after a few days. One night our daughter woke up and cried for an unknown number of minutes before we were able to notice. Another night I actually shut the unit off and slept on the couch outside her room. ("D. Vishnesky")

More than any single specific worry, monitor users reported purchasing the device to address vaguely felt, generalized anxiety that something ill would befall their child.

> I knew I'd too be one of those frazzled new mothers spending more than half the night checking to see that the baby was still breathing, convinced that once I left the room, disaster would strike. I knew it, and I accepted it. ("rakrohn")

Most reviewers seemed aware of the overall baby monitor market in that they often made reference to how the model they were reviewing was similar to or different from the basic, audio only monitor. Most of the newer functions, the additions to audio transmission, were praised. For example, reviewers of monitors with motion-sensing capabilities highlighted the benefits of this function.

> I never had a false alarm, and it gave me complete peace of mind when I slept at night. ("Mommy of Two")

Some monitor models supplement the audio signal with other ways of signaling sound. Reviewers usually judged these supplemental communication channels, functioning similarly to the "vibrate" function of a cell phone, as helpful in specific special circumstances. These supplemental channels usually involved vibration, flashing lights, or both. Reviewer's comments make it clear that these channels have some success in reducing the "weak link" of the basic monitor design noted above, the difficulty of the human operators (that is, the parents) to maintain awareness of and attention to the monitor's constant audio signal.

> This monitor put me at such ease that I was able to mow the lawn, vacuum and snow blow the driveway all while having my little one right with me via this fantastic monitor. ("frsdc")

Users praised monitors with light indicators for sound level—sometimes, as in the case of "sloving" below, for the direct assistance this function provided with some of the more emotionally difficult tasks of childrearing. Again, it appears that a major function of the technology for the parents is to ease uncomfortable emotions associated with separation and to allow the parents to follow through on "proper" parenting behavior that they find emotionally challenging.

> The other time I had the opportunity to use the lights, was when the baby would cry and cry, and we would try to let her cry it out and put herself to sleep. Sometimes this was easier if we didn't have to actually hear her. So, we would turn the volume on the monitor all the was down, but we would still be able to see the lights. It was still hard to let her cry, but not having to hear it, stopped me from running in and picking her up, when I knew I really needed to let herself try to get herself to sleep. ("sloving")

Users routinely praised the additional visual information provided by video baby monitors—when the video functioned properly.

> With our son, he is always making noise if he is awake, so we tend not to pay much attention to this portion, but rely mainly on the video monitoring instead. ("kbolton72")

Video failure, however, elicited especially severe criticism, as if more technologically complex devices were making stronger promises of protection, promises that failed monitors did not keep. These video monitors cost more than other types, so this could also account for some of the increased ire at their failures.

> Several other reviewers commented on durability issues, and we had our monitor go bad as well. At the time, I assumed it was an isolated issue, but in light of other users' comments, perhaps it isn't. ("akpalau")

For all the baby monitor functions, greater clarity (of audio or video) and greater length of transmission were always prized and preferred. Technical criticisms of the monitors in the reviews usually centered on failings in one of these two areas.

Ideologies of Baby Monitoring

Following Foss's (2004) description of ideology as "a system of beliefs that reflects a group's 'fundamental social, economic, political or cultural interests'" (239), I looked through the customer reviews in detail to determine the writers' self-descriptions of behaviors, beliefs, and opinions in four main areas: (1) membership identities, (2) activities, (3) goals, values, and norms, and (4) resources. These four areas of analysis

correspond to the questions Foss (2004) posed as essential to understanding the ideological meaning of a cultural artifact.

Membership identities. Baby monitor reviewers were first and foremost *parents*. Virtually every review emphasized that they were reporting first-hand experiences of how the monitors functioned (or failed to function) in their own home with their own children. A few reviewers mentioned other groups for which a monitor might be helpful (for example, day care providers or people concerned about the wellbeing of elderly parents), but these alternative uses were clearly presented as *potential* benefits, adjuncts to the device's main task of monitoring the reviewer's own child. Only a single reviewer, a grandparent, mentioned a relationship other than parenthood. In light of the monitor's explicit construction as a technology for monitoring a baby, this self-identification as a parent seems to be the minimum requirement for establishing credibility, at least within this medium.

The writers appear to assume they are speaking to a relatively homogeneous audience—an audience made up of those who think and behave like the writer in most important respects.

> Our baby is 6.5 week old as I write this and just started sleeping through the night. We, like all parents, were worried about the risk of SIDS (and still are!) and took as many precautions as possible to minimize the risks - very firm crib mattress, no blankets or toys in the crib, no pillows, always put baby down on her back. And we got the AngelCare monitor. ("mcsstokes")

Activities. Surveillance is the immediate point for the technologies comprising the baby monitors, so it should come as not surprise that keeping apprised of the child's behaviors is a major activity among the reviewers.

> Great product that allows one to see their child without disturbing that child...One can never have enough products that help spy on children and others. (“Brettkatt”)

> I am very pleased with this monitor. It has given me high quality monitoring of my baby. (“Dianete”)

Reviewers often made reference to their lives as busy with many non-parenting activities. While reviewers sometimes expressed themselves cautiously, treading lightly here, lest their expressed desires to maintain extra-parental activities appear to be an implicit devaluing of the joys and importance of parenthood, many describe how their monitors supported, or failed to support, a busy life distinct from the child.

> The transmitter does not have the ability to be portable and be battery operated. This would have been nice to have if we were camping! (“Dianete”)

> ...is a durable, reliable baby monitor that allows careful monitoring of baby activities in his/her room while the parent can safely be is away in another, doing chores or engaged in other activities. (“maceyr”)

> So I get to let off some steam, or do some loud housework, and still be alert to the baby. (“sloving”)

> Every so often we have business meetings in our home, which we would not want a crying monitor to interrupt, so I figured this feature would be of great benefit for us. Another time it would be great would be if you are working with loud tools, such as a lawn mower. (“lilsquibb”)

> The extreme sensitivity of this monitor will allow you to do whatever you need to without ANY worry while your little one catches that much needed nap. We can hear our daughter’s every breath. (“frsdc”)

Goals, values and norms. Expressions of the high value reviewers place on their children are very frequent. Often this value is directly linked to the goal of maintaining the child’s safety.

> My husband suggested we buy this monitor and I was reluctent [sic] at first because of the price. But, how can you put a price on something that could possibly help save your child's life? So we decided to purchase it. Our daughter is now 7 months old and I can tell you it was worth every penny. (“Jennifer Suarez”)

> ... peace of mind that I know my child is breathing. That makes this monitor worth every penny, in my opinion. (“Mommy of Two”)
>
> You cannot put a price on some things. And the price tag of $100 or so for this Movement sensor and our peace of mind was worth every penny. I would have paid twice as much for this unit. (“mcsstokes”)

Reviewers, especially those who were commenting on the more complex and expensive models, often communicated their belief in the precious or “priceless” child (Zelizer, 1985).

> Don't let the price scare you away. Convince yourself early on like I did that you cannot put a price on your child's safety. (“Jennifer Suarez”)

Many of these reviews went beyond this basic credibility establishment to point to a more specifically ideological function of baby monitor usage, the expression the identity of the responsible parent. As evidenced by baby monitor usage, the responsible parent places the baby’s safety and wellbeing above all other concerns, exercises supervisory functions under all conditions and at all times, vigorously supplements any potential weaknesses with self-education and technology. The “responsible parent” identity clearly trumped the identity of baby monitor user, as some reviewers expressed reservations about relying too completely on technology to fulfill the full duties of parental surveillance.

> Sure I still checked on her from time to time throughout the night (I never trust everything to technology) but I didn't do it 1/2 as often as I would've with a plain sound monitor. (“Jennifer Suarez”)
>
> My daughter was born in December and I had to snow blow the driveway so we could get out of the driveway. I wrapped the monitor in my scarf so it was close to my ear, not trusting that it would work. Well, I am here to tell you I learned the hard way and nearly blew my hearing and scared myself to death with the vibration when my daughter woke up! (“frsdc”)

Several of the reviewers made explicit reference to their conventional nuclear family and heteronormativity. A majority of the reviewers referred to themselves as "we," implying the presence of a partner, as well as the consensual validation by the partner of the opinions being presented.

> My wife used to wake up every 15 minutes or so… at first she insisted the baby sleep in the same room as us… ("Marc Jeffrey Miller")

> …if your [sic] trying to enjoy a quiet (and rare) moment alone with your partner… ("Graham")

Of the reviewers mentioning a partner, (that is, most of them, as noted above), only "Graham" quoted here refers to his "partner" without gender attribution anywhere in the review. Most reviewers make a point of mentioning that they have a partner of the opposite sex.

Reviewers portray childhood, especially infancy, as an inherently risky time. While some dangers outside the home warrant occasional mention, these parents are most concerned about the inherent unpredictability of nature, in the form of unpredictable biological events that might occur when they are physically apart from their children. Surveillance, for these reviewers, is the best first level of protection against this unpredictable nature. Surveillance technology contributes to the goal of mastery over the dangers of biology.

Resources. Because baby monitor surveillance technologies extend the range of the parental gaze, monitor reviewers often describe a rather well-to-do lifestyle of large houses and big yards that lead to the baby monitor's necessity.

> We live in a two-story home so I knew it would be nice to be able to hear what was going on in the baby's room. We also like to do things outside during the summer. So when I was registering for baby stuff, I wanted a portable monitor with good sound quality. ("lilsquibb")

However, most reviewers position themselves as middle- rather than upper-class, usually by expressing some ambivalence about the cost of higher priced monitors.

> Given the price (our two-camera unit retailed for about $170) and my overly-practical approach to all things, I never would have gotten it for myself...When we received the monitoring system, it seemed like a frivolous, luxury item, but now that we have it, we're very pleased with it – ("akpalau")

> We love yard sales! Before the birth of my first child we picked up a baby monitor for $3! What a bargain! I figured it wouldn't last long but it was the right price at the time. ("Dianete")

Technology, in the form of the baby monitor, is an importance resource for support of the goals and lifestyles of monitor users.

> We are about to deliver twins any day and plan to upgrade to a new video monitor only because our house is a maze of stairs and video would help lessen our unnecessary trips. ("frsdc")

> This allowed me to get housework done, or walk next door to talk with the neighbor for brief periods - talking with other adults is good thing for a post-pardum [sic] mommy. After I returned to work, I would use the receiver in the bathroom while I showered. ("lilsquibb")

This investigation's purpose was to cast a wide net and to identify as many different "Ideologies of the baby monitor" as possible. One surprise in these findings was the relative homogeneity of the responses, which allowed the construction of the ideological descriptions included here. Where the reviews differed, this difference was usually one of emphasis rather than of opposition. As reflected in these texts, baby monitor users are parents who place high value both on their children and on their other, non-parenting activities. Continuing the trend of the past century as noted by Aries (1962), children are "precious" in and of themselves, not for any particular function or for any particular economic advantage they might bring. Monitor owners are more interested in overcoming the impediments that the responsibilities of parenting may present to their

overall lifestyle than they are in compromising this lifestyle. They view child development as risky and see surveillance technology as an important ally in coping with these risks—the more advanced the technology, the better. They readily accept the equation of responsible parenting with surveillance.

The methodology of this portion of the study was likely to miss by exclusion the opinions of those with more generalized mixed feelings or ambivalence about the technology. Another weakness of the customer review genre is that those experiencing extremes of opinion, whether good or bad, about their baby monitor would likely feel a higher motivation to communicate these feelings to others. Parents who use the baby monitor, yet feel some discomfort about this use, or those who note with concern some mild but negative effects of electronic surveillance in the home, might be less likely to identify the internet customer review as the appropriate medium for expressing these complex feelings. Likewise, parents finding any baby monitor (as opposed to a particular baby monitor or baby monitor feature) to be an annoyance or a waste of time might be unlikely to take the time to say so in a review. More detailed personal interviews with parents of young child would allow for further exploration of these more subtle parenting concerns—so that is what I tried next.

Routine Parenting Worries and Baby Monitor Use

In this portion of the study, I wanted to get a more detailed sense of how parents perceived and used baby monitors in their everyday lives. While the "consumer reviews" had been useful for eliciting specific impressions of the monitors, they did not provide much context information, information about how the monitors actually fit into the overall experience of parenthood. I was hoping here to overcome at least one observer

bias, the tendency to overestimate the effect of one particular element within a complex system. Statistics has developed procedures for minimizing the likelihood of such errors, but qualitative methods always run this risk. Are safety worries really a significant part of the overall experience of new parents, and do baby monitors really play any role in this? To answer those questions, I needed to talk to parents directly.

The arrival of a new child in the home is accompanied by many strong feelings in the new parent(s). While many of these parental feelings are experienced as positive, a few can be uncomfortable (Cowan and Cowan 2000, Nomaguchi and Milkie 2003). Routine parenting anxiety is one notable category of such uncomfortable feelings. For the purposes of this part of the study, I thought about routine parenting anxiety as the discomforting worry accompanying the anticipation of future threats to the well-being of the new child. This anxiety is “routine” in the senses that (1) the anticipations that induce it are relatively realistic and common within a given subculture and (2) the worry experienced by the parent, while it may be uncomfortable, is not extreme or debilitating. Each of these aspects of parenting anxieties can be thought of as existing on a continuum: the anticipations that induce the worry may be very common or very uncommon for similar parents in similar situations, while the level of worry a parent experiences may range from complete calm (a lack of all worry), through average levels of worry, to crushing anxiety that inhibits effective coping. “Routine parenting anxieties” are those in the low-to-middle ranges of these two continuums. I assumed that routine parenting anxieties would typically produce a range of coping responses in the parent similar to those many individuals use to cope successfully with everyday worries and concerns. These would include actions like personal reflection and self-talk, the seeking out of

interpersonal interactions for ventilation, social support, or consensual validation, and behaviors aimed directly at reducing the perceived threats (in the case of parents, threats to the child).

A panoply of products offer themselves as aids to help parents deal with perceived threats to the child. The intent of much product advertising directed at parents is clearly to raise their concerns about the safety of their child, and then to induce product purchases as a way to cope with these anxieties. The parents' actual experiences of normal-range safety-related anxieties and their everyday coping behaviors to deal with these anxieties are poorly understood outside of the private, proprietary data held by the various companies.

Participants were eight adults, four heterosexual married couples, each with at least one child under the age of six. (Male average age = 42 years; female average age 39 years; length of marriages ranged from 1.5 to 15 years.) Three of the couples each had one child, ranging in age from five months to four years, while one couple had three children, ranging in ages from two to seven years. Participants were a convenience sample of volunteers and all were acquainted with the author. All participants were Caucasian. All subjects were college educated. Seven of the eight subjects worked full-time outside the home. Those interviewed, then, were an especially articulate, high functioning, and affluent group of parents, rather than a sample representative of the general parent population. This sampling bias certainly affects the interpretation of these findings, and I discuss this in detail in what follows.

The interview protocol used in this study consisted of a mix of open- and close-ended questions designed to allow both the interviewer and the subjects considerable

freedom to explore the subjects' experiences of parenthood. The interview protocol is available from the author. The University of Iowa's human subjects committee reviewed and approved the procedures of this portion of the study

All subjects were interviewed as couples, each in their own homes. Most subjects arranged for their children to be napping, in bed, or otherwise engaged during the interviews. Children of some of the subjects made occasional appearances during two of the interviews, but these appearances were, except in the case of the single infant-aged child, brief. These appearances did not, in either case, appear to change the content of the interviews or the responses of subjects.

All interviews were completed in a single session of between one and two hours. One participating couple contacted the author after the first round of interviews were completed and requested an additional interview to cover new experiences they had recalled. Where data from this additional interview is presented, it is labeled as such.

All subjects were given the option of being interviewed as individuals or as couples and all opted for couples interviews. It did not appear to the author that the partner's presence ever inhibited the responses of any subject or that any subject altered his or her responses in a more socially acceptable direction as the result of the partner's presence. On several occasions, partners helped each other recall relevant events dimly remembered or only initially recalled by one subject, so the net effect of interviewing each couple together seemed to be to increase the recall of subjects.

All eight subjects easily identified new worries that arose from their new roles as parents of young children. None of these subjects was surprised or distressed by this effect—all felt it to be a normal and expectable part of becoming a new parent. A few

subjects specifically commented on their overall level of anxiety now as compared to their overall level of anxiety before becoming a parent. None of these subjects felt that their overall level of experienced anxiety had actually increased—they believed that the subject or focus of their anxieties had changed toward worries related to their child, and that these new worries largely replaced former worries that had been more focused on themselves. Most actually welcomed this change of focus.

> I'm not #1 anymore, which is a good thing… We think about what's good for the family, instead of what's good for each of us. (subject #5, 37 y.o. female)
>
> It was more anticipation, pleasant, not really anxiety…Like nervousness before the game. (subject #2, 32 y.o. female)
>
> The joy was so great, I really refused to worry. (subject #1, 46 y.o. male)
>
> …now I worry more about [the child], and less about myself. (subject #6, 37 y.o. male)

If subjects were unsurprised by the onset of child-focused safety worries, the specific content of the worries was, at least occasionally, unexpected. Three subjects, all fathers, noted significant increases in worries about the environment. These usually included specific environmental worries, such as concern about the safety of water, along with more generalized worries, such as concerns about a worldwide decline of environmental quality, or even self-described "irrational" images of "an environmental apocalypse" (subject 6).

> I'm more worried about water pollution. The water quality is worse here than it was in California…It's crazy—I like to let the kids go swimming in the lake, it's a nice lake, but I don't trust the water. (subject #3, 43 y.o. male)

Three of the four subject couples resided in a smaller mid-western towns, while one couple lived in a suburban town that was part of a major metropolitan area. Only the subjects who lived in the more heavily populated area noted any worries about interpersonal physical dangers, such as kidnapping or assault, toward their children—this was described as episodic, not especially severe, and easily dismissed. All subjects reported themselves to be sensitive to issues of interpersonal safety, but they all had concluded that the daily routines of their children made significant worries about their children's interpersonal safety largely unnecessary. Two of the four couples noted significant anxieties about choosing a daycare provider for their children and related confidence in their childcare provider to confidence in their child's physical and emotional well being. Some of this concern about their children's interpersonal safety seems to have been dealt with by significant life decisions the couples had made, such as where to live, what sort of child care to pursue, etc. All of the couples pronounced themselves either satisfied or very satisfied with their current childcare arrangements.

Several subjects observed that their worries seemed to focus much more on health than on safety. Three of the four couples mentioned increased concern about the health of their diet. This concern was about equally divided between attention to the health effects of diet on the developing child and attention to the parents' own health. Male subjects especially tended to mention a greater attention to their own mortality and a switch to a healthier diet as part of a desire to promote their own longevity in order better to protect and provide for their family.

Most female subjects, and one male subject, mentioned an intense but short-lived sense of discomfort at their own lack of skills at handling the baby outside the hospital for the first time.

> When I got home with [my child], it felt like I didn't really know what to do with a newborn. (#2, female, 32)
> Bathing made me nervous at first, then I realized I could do it. (#4, male, 41)
>
> I remember being very nervous about just handling her at first, just carrying her and worrying that I might drop her. (#5, female, 37)

Subjects consistently laughed at these worries in retrospect, and all remarked on how quickly these feelings disappeared with practice.

Subjects identified almost no actual experiences with their own children that heightened their anxieties about safety. One notable exception to this came from the two families whose children had spent time in the neonatal intensive care unit before coming home for the first time. In both cases, parents felt that the experience of having their child in the NICU made them *less* worried about subsequent everyday challenges—this early challenge seemed to have a stress inoculation effect. These subjects did not feel that they were less attentive to potential risks, only that the intensity of the experience of having their child in the NICU put more routine risks at home into a different, more benign, perspective.

All of the parents whose children were beyond infancy noted a significant change in their worries about their children, away from concerns about physical safety and development and toward issues of a more psychological nature, such as the child's happiness, self-confidence, and interpersonal skills. Female subjects were always the first to report attention to the child's place within the social system, though each male spouse quickly agreed with his wife's observations.

While not limited specifically to concerns about physical safety, several subjects noted a developing awareness of their role as a model for many aspects of the child's functioning. From "not jaywalking so much" (#3) to getting up and dressed quickly in the mornings (#5), parents modified their own routines to more accurately reflect directions they were giving to their children.

Some risks to the child seemed to be considered so routine by subjects that they would mention they only as an aside or after prompting. SIDS was notable in this regard. All subjects considered it a risk to attend to, but such attention seemed so much like an expected part of parenting that it hardly warranted noting in the interview, as one would similarly not mention a baby's need for diapers. These parents were very attentive to and knowledgeable about the risk of SIDS—all were aware of current recommendations for positioning the infant for sleep, the connection of this recommendation to SIDS risk, and the history of changing recommendations for infant sleep positioning. For this group of subjects, such knowledge seems to be taken as a given.

Most subjects felt that they attended to safety-related concerns about their children more than their own parents worried about similar safety issues during the subjects' childhoods. Subjects often mentioned reminding themselves of this fact, and their own survival, as a way of moderating their own parenting worries.

> Overall, I felt reassured [by the baby monitor], but I know that most babies don't have one. My brothers and I didn't have one growing up, and we turned out okay—we survived. (#2, female, 32)

All subjects noted some generalized new worries that developed during pregnancy about the responsibilities of caring for the coming child. A stark gender divide was observed in this sample in how subjects responded to these concerns. Female subjects

typically read extensively on the subjects of baby care, baby development, and parenting, while male subjects specifically avoided such reading. Two female subjects spontaneously mentioned discussing these concerns extensively with female friends, gathering reassurance and advice, while none of the male subjects reported any discussions of this topic outside of the couple.

All couples had and used a baby monitor, and all subjects would recommend them to other new parents as helpful in alleviating initial anxieties about the baby's well-being.

> [The baby monitor] was a help, especially with the first [child]…It was reassurance that [the child] was breathing…You could watch TV and still feel like all your bases were covered. (#3, female, 43)

> The monitor liberated us—it let us do other things. (#7, male, 45)

Despite this general recommendation, several subjects noted that the monitors' benefits were, in reality, significantly limited. This often took the form of a realization that the monitor did not really add much, at least on a routine basis, to the parental monitoring capacities.

> We live in a pretty big house, and we can still hear him pretty much anywhere. [The monitor] is redundant, really. He's his own baby monitor. (#1, male, 46)

> We got [a baby monitor] because we thought we were supposed to have one. We didn't really need it—we could hear her without it. (#5, female, 37)

Baby monitors were also singled out as a parenting technology whose day-to-day realities introduced new problems that made their presence a mixed blessing. In addition to the "redundancy" complaint noted above, several subjects commented on the "secondary anxiety" that arose from the need to attend to whether or not they had remembered to turn on the device. All subjects were aware of at least occasional doubts about whether or not the monitor was functioning properly. Most subjects also had

memories of specific instances in which the monitors' surveillance technology led to unpleasant or humorous experiences not advertised by the manufacturer.

> [The baby monitor] magnified sounds so that it made me more anxious. It heightened my awareness to an unpleasant degree. (#5, female, 37)
> We figured out that we were picking up sounds from our neighbor's monitor. We got rid of it pretty quickly after that—we figured they were probably doing the same with us. (#4, male, 41)

> There was that one time, at my parents' house, that we forgot to turn [the receiver] off when we went to bed. We realized after awhile that they could probably hear everything we were saying back in the kitchen. (#6, male, 37)

One couple had a monitor with a motion detection function. This device is designed to sound an alarm if it does not detect motion from the baby every 20 seconds. This alarm is designed to have both a direct impact on the child, startling him or her to an awakened and breathing state, and an alert function to the parents. Two of the couples, whose monitors did not have this function, spontaneously single out this capacity as an example of "over-the-top" technology inflation that they felt preyed on parental insecurities to an unfair degree. However, the couple whose monitor did have this capacity felt that this was the monitor's most useful function. In a follow-up interview, this couple noted that they had begun leaving the monitor's parental receiver off, forgoing the monitor's original sound transmission function as unnecessary, while continuing to motion detector function—they realized they could hear the monitor's sharp alert from anywhere in the house, even without the parental receiver. This couple received some comfort from this monitoring function despite the fact that such an alert had never been necessary, and despite the fact that they had inadvertently set it off on more than one occasion by picking up the baby and forgetting to turn off the monitor.

Two of the three couples whose children had grown out of infancy reported that they used their baby monitors for only a matter of weeks or months. The couple with three children reported a significant decline in usage with each successive child, such that with their current child, now 2, they could recall only using a monitor on one occasion. This decline seems to have been due to a combination of factors—logistical factors, such as a move to a house where the parents' space to relax was not quite so removed from the children's bedrooms, parenting experience factors, in that they did not feel as strong a need for the extra bit of surveillance the monitor provided, and monitor dissatisfaction factors, such as their reported disconcerting experience hearing the transmissions of another monitor through their receiver. In light of the decidedly mixed experiences these subjects had with their baby monitors, it is interesting to note that none of them would recommend that other parents not use them. Several subjects mention the low cost and relatively easy operation of the basic baby monitor as a reason for recommending it to new parents. There was a sense that, for this group of parents at least, having a baby monitor was the expected or baseline behavior, so deviation from this norm was not seen as worth the trouble for even the minor increase in risk it might potentially pose to the child. To a limited extent, the baby monitor has been linked in the minds of these parents with the benefit of child safety—the limit to this linkage appearing to be personal experience of the user. None of these parents reported feeling anxious about the decision to cease using the monitor, but none would recommend against other parents trying it out for themselves.

> You never want to be in a situation where you are like, "yeah, my baby died because I didn't have a baby monitor in the room." (#1, male, 46)

Especially for parents of infants, monitors were seen as devices with very few negatives, so even the potential of a strong advantage (in the form of possibly alerting the parent to the child's distress) meant that the device's use was justified. As parents collected negative experiences (perceptions of redundancy, discomfort with excessive amplification, annoyance with static, "false alarms" from reception of other radio transmissions, etc.), the balance gradually shifted so that parents reached a point at which they gave up baby monitor use without regret or misgivings.

This issue of "technology inflation," where increased capabilities come at increased costs, led at least one subject to question the balance between the baby monitor's capacities simultaneously to assuage and to promote anxieties. When one subject (#3) mentioned that she might have found the visual image provided by newer video baby monitors reassuring, her spouse (subject 4) commented that, for him, "Video would be intrusive—you'd have to pay too much attention to it." The couple mentioned similarly mixed feelings about video surveillance cameras now offered by several daycare providers, so that parents can tune in via the Internet to what is happening at the day care via their home or office computer. The idea of this seemed attractive at first—the increased information seemed to reassure parents about both their child's safety and their daycare provider's integrity. But its availability prevented, in the minds of these parents, a clear transfer of responsibility for the child's well-being off to the daycare provider—the potential for parental surveillance meant that the parents retained more responsibility for what happened to their child while they were away.

Three of the four couples spontaneously mentioned another baby safety technology the infant car seat. As they did with baby monitors, these parents all endorsed

car seats. (The legal status of car seat use is, of course, significantly different from that of baby monitors, in that car seat use is now state-mandated across the United States.) Car seats inspired none of the ambivalence seen with baby monitors. There was no sense that car seats represented a "mixed blessing," despite an occasional mention of concern about the complexities of proper usage. There were no reports that car seats felt "redundant," despite an absence of auto accidents that would have given these subjects a more direct experience of the technology's protective function. Like SIDS, the risks associated with automobile accidents appears to have become part of the unremarkable background noise that these parents expect to negotiate, an assumed part of the parental landscape.

Unlike car seats, to remain effective baby monitors require ongoing attention from their watcher-users. The relentless aspect of this requirement, along with the human frailties of attention span and concentration focus, means that users have a somewhat different relationship to surveillance technologies than to other parenting anxiety technologies. Rather than being "set and forget" as happens with a car seat, baby monitors assist in ongoing watching responsibility—while more than occasionally serving to remind watchers of this responsibility amid other demands on the watcher's attention.

Lest this subject sample begin to sound like a risk averse group who hovers expectantly over their children's every move, I should add that subjects gave several examples of their own parenting practices that they acknowledged other parents might question. One couple mentioned digging out their now seldom used baby monitor to listen in on their children while they attended a New Year's Eve party across the street.

Another subject described his tendency to leave his child on the kitchen counter while preparing food, laughing at his own assumption that his child "hasn't moved yet." Two mothers and one father mentioned, without prompting, conscious decisions on a number of occasions not to interfere with their children's potentially hazardous play in order to encourage their children to be physically active and adventurous. All three couples with pre-school and elementary-aged children mentioned self-confidence as a characteristic they very much wished to promote in their children, and all three expressed the opinion that excessive parental restrictions of the child's activities due to parental anxieties about risk could damage the boldness and self-confidence they wished to inspire.

This group of subjects brought considerable intellectual and economic resources into their new parenting roles and, for these subjects, bringing these resources to bear upon the challenges of parenting was an automatic part of parenting, done without much ambivalence or second guessing. All of these parents had seriously thought through the decision to become a parent, and they all demonstrated a sophisticated understanding of the ways that parenting can influence a child's physical and emotional development. These parents were older, better educated, and economically better off than the average parent of young children in the United States. In addition to these group characteristics, several important methodological limitations, including non-random subject selection, small subject numbers, single time point and single method data collection, and lack of a control or comparison group, combine to differentiate this portion of this study from other studies designed to produce population-level conclusions (e.g., Feeney et al., 2001). Despite these generalizability concerns, these interviews did help me to get a better sense

of how some parents experience their routine safety worries and whether or not some of the technologies marketed to reduce these worries actually delivered.

For this group of subjects, the problem-solving processes that lead to successfully overcoming worries were almost second nature. These subjects had the psychological and financial wherewithal to make structural life decisions in ways that would reduce their worries: they chose childcare situations carefully, they lived in places chosen in large part because the provided safe environments in which to raise children, they carefully considered the costs and benefits of various products marketed to new parents. They had good verbal skills, similar parenting values, the ability to clearly define problems and various solution possibilities. Parenting worries dealt with so summarily can become difficult to recall in retrospect. Perhaps it is misleading to call these states "worries" at all. Do people with the ability to do so chose a safe place to raise children because they are "worried" about safety? Is a "motivating factor" the same as a "worry"? The subjects demonstrated how often well-functioning parents can anticipate situations that might cause them concern in the future and so begin to deal with these situations in advance, specifically so that they will not become worries.

While it may be the case that in many instances there is a clear and direct connection between a parent's conscious worry and the decision to use a technology to address that worry, the thinking and behavior of the subjects of these interviews highlight that these processes are often much more complex. Parents often do not wait until they are experiencing something they would identify as "worry" before they act to address a risk—they anticipate needs, risks, and concerns and take actions to construct their worlds

so as to minimize or avoid risks. Avoidance or reduction of worry can be a motivating force without the direct, conscious experience of worry.

These results support the author's conjecture that baby monitor usage has become a routine and expected part of "responsible" parenting. While all subjects agreed that baby monitors were of limited usefulness, they all also seemed to espouse a philosophy that each parent needed to come to that realization in his or her own time and by his or her own methods. Because the purchase of a basic monitor did not put a large strain on the finances of these subjects, the monitor's limited usefulness was outweighed by its occasional practical advantages along with the possibility that it might be very helpful in a few rare circumstances.

It was interesting to observe that several of the parents of girl children were especially mindful of the potential negative consequences of parental risk aversion. They stopped themselves from intervening against some exploratory play, worried that their own caution might lead to overly passive, unassertive, or unadventuresome attitudes or behaviors in the child. These parents monitored their own protective urges and considered the psychological as well as the physical consequences of parenting behaviors. This is in keeping with newer conceptions of risk in the scholarly world that recognize that risk involves not just the harmful consequences of dangers but also the costs of missed opportunities (Adams, 1995). Baby monitors may survive as a routine parenting technology because there is no clear negative consequence for the risk sensitivity it promotes.

The Routinization of Surveillance: Experts and Advertising

Baby monitors nominally address the parent concerns arising from the spatial separation and different activity needs of child and parent. Advice in many childcare manuals supports the belief that it is important for infants and parents to have distinct schedules and spaces, including, importantly, the child's sleep time apart from parents. These beliefs and their practice, especially when combined with economic conditions and architectural practices that allow the child's sleep space to be a significant distance from adult activities, support baby monitor use.

Stearns (2003) observes that expert advice in the United States on the importance of children quickly learning to sleep on their own dates back to the late 1800s. Throughout the early twentieth century, many parallel concerns related to children, most emanating from a growing belief that childhood represented a time of high vulnerability, combined to point children toward their own beds and their own sleep schedules. The amount of sleep experts advised as the minimum children required at for healthy physical development steadily increased; healthy child sexual development required privacy for the child and the child's clear separation from possible exposure to adult sexual activities; the child's special vulnerability to germs dictated isolation as the safest way to minimize potential risks (Stearns 2003).

Stearns also notes that, alongside these more overtly child-centered concerns, other changes in adult desires and behaviors supported growth in the practice of children's separate sleep times and spaces. Stearns characterizes these changes as an overall decrease in child-centeredness of home activities at night. He cites evidence, especially among middle class parents, that husbands and wives increasingly wanted time

together at home free of children, especially sleeping children who might interfere with the parents' use of artificial lighting or the radio (Stearns 2003).

By the last quarter of the twentieth century, these twin beliefs in the vulnerable child and in the advantages of distinct spheres of activity had coalesced. Expert advice held that separating adults and children at night best served the needs of both. Discussing the problem of "chronic resistance to sleep in infancy," Benjamin Spock observes in *Dr. Spock's Baby and Child Care*

> Such a problem is exhausting to baby and parents. The baby is apt to become more irritable in the daytime, too, and may eat less well. The parents can't help getting more and more irritated and resentful. A baby shouldn't be able to put adults through a performance like this every night. They know it but don't know what to do about it. Even a baby senses, I think, that she shouldn't be able to get away with such tyranny.
>
> The habit is usually easy to break once the parents realize that it is as bad for the baby as it is for them. The cure is simple: Put the baby to bed at a reasonable hour, say good night affectionately but firmly, walk out of the room, and don't go back (Spock 1992, 259).

As the above quote from the sixth edition of Spock's famous child care book suggests, even experts and parents who rejected the strict sleep scheduling advised by behavioral psychologists as optimal during the first third of the twentieth century did not challenge the overall benefits of distinct sleep quarters and schedules. Julia Grant describes the establishment and rapid growth of "child-study groups" in the 1920s and 1930s, mothers across the United States who met regularly to discuss parenting experiences and to share parenting advice (Grant 1998). These mothers actively engaged with the dominant expert childcare advice of the time and appeared neither to accept nor to reject it out-of-hand, but to apply it to their own experiences and to use the results to assess the advice's usefulness and accuracy. The challenges these mothers made to behaviorist advice on child sleep scheduling focused on the amount mothers should help

to sooth their children to sleep, not on the child's need for sleep time and space clearly separated from adults (Grant 1998).

The pediatrician William Sears has mounted a significant challenge to this conventional wisdom concerning sleeping arrangements (Sears 1999). Since the mid-1980s, Sears has recommended "co-sleeping," children sleeping with their parents, as optimal for promoting attachment between children and parents. This remains a minority view among both pediatricians and parents—both the American Academy of Pediatrics (Lindsay 2002, Okami, Weisener, and Olmstead 2002) and the United States Consumer Product Safety Commission (1999) have put out statements recommending against regular bed sharing between adults and children. An eighteen-year longitudinal study of co-sleeping concluded that results fully supported neither the benefits espoused by promoters nor the risks cited by detractors (Okami, Weisener, and Olmstead 2002). Popular childcare books now tend to take a moderate stance on this—not explicitly condemning it, but often highlighting more of its potential problems than its claimed benefits—this is case, for example, in the third edition of *What to Expect When You're Expecting* (Murkoff, Hathaway and Eisenberg 2003).

It is not surprising that co-sleeping advocates like Dr. Sears have little to say about baby monitors, actual physical proximity being an acceptable approximation of the technological proximity provided by monitors. Sears makes no mention of baby monitors, except for a single reference to high-tech apnea monitors, in his *Nighttime Parenting* book. Somewhat more surprisingly in light of the monitor's market prevalence, most other child care experts, even the strongest advocates of clear separation of child and parent spheres, opine little or not at all about baby monitors. The authors of the text

that was the focus of chapter three, *What to Expect When You're Expecting* (which itself has no mention of baby monitors), have also published a popular book on infant care, *What to Expect the First Year* (Murkoff, Hathaway and Eisenberg 2003). This text also has no mention of baby monitors. Neither does the most recent edition of the all-time bestselling early childcare book, *Dr. Spock's Baby and Child Care* (Spock and Needlman 2004), nor does the child car book published by the American Academy of Pediatrics (2009), *Caring For Your Baby and Young Child: Birth to Age Five*.

Some recent books that focus heavily or entirely on infant sleep do include brief mentions of the baby monitor. Often, however, this mention is in the form of a caution, advising parents to use the monitor only modestly in order to sleep better themselves. The advice offered by Spock's co-author, Robert Needlman, is typical in this regard—note also Dr. Needleman's echo of the research findings on more complex infant monitors and his (mis-)application of this to ordinary baby monitors.

> Give your baby time to settle down on his own. If you rush in the minute he starts fussing, he won't learn this important skill. If your newborn is sleeping in another room and you've installed a baby monitor, consider turning it down at night so that you don't hear every little gurgle and rustle coming from your baby's room; chances are, if he really needs you, he can cry loud enough to get your attention. (Infant monitors are sold as safety equipment, but careful research has failed to show that they actually make babies safer) (Needlman 2009, 17).

The baby monitor was, by the mid-1980s, a routine baby shower gift and infant care technology among middle class mothers in the United States. Unlike the advertising splash accompanying the introduction of the Zenith Radio Nurse back in 1938, the rise to prominence of baby monitors in the more contemporary era has come, for the most part, outside the attentions of major print media. This is the case whether one considers advertising or article content, and whether the focus is general-interest media or

specialized journals, such as consumer products or parenthood magazines. My detailed inspection of every issue of *Parents Magazine* published in the 1980s, for example, uncovered no articles on the baby monitor and only three mentions in advertising, the earliest of these in 1988. The first comparison of baby monitor models in the popular consumer products magazine, *Consumer Reports*, was not published until 1992. The *New York Times* appears to have carried exactly one article mentioning baby monitors (a 1987 piece in the magazine section by Myron Berger on "electronic luxuries," so-called even though the baby monitor involved was noted to cost under $50) between 1970-1990. By the 1990s, however, articles in the *New York Times* began referencing baby monitors with increasing frequency, though almost always in articles about other aspects of parenthood. The baby monitor became part of the background of the mediated picture of parenthood without much special notice. (Perhaps having much in common in this regard with most aspects of the surveillance industry.)

When I began this project, I had assumed that the baby monitor's rise in status to it place as part of routine baby equipment supplies was preceded by a significant period of advertising by monitor manufacturers. Other communication technologies that sell themselves as anxiolytics for parental child safety fears, such as the General Motors OnStar car emergency alert system, follow a standard advertising trope: expose the public to emotionally riveting, if statistically rather unlikely, scenarios of endangerment. Follow this quickly by placement of the advertised product as the logical, responsible solution to this dangerous situation. Repeat until attention to the worrying scenario becomes established (use of passive voice necessary here to communicate how this happens "naturally" as it were, rather than as a result of the advertiser's efforts) as

responsible rather than exceptional, with the advertised product's purchase similarly naturalized as the logical response to such understandable concerns.

As the report of my print media surveys above indicates, the baby monitor has achieved its pride of place without such overt, advertising-driven efforts to encourage appropriate demand. Both the results of my parent interviews and my own experiences suggest that, once parents for whatever reason accept the baby's need to sleep separated from the parents, parental worry about the baby's safety is nearly inevitable and universal, especially until the parent has had enough child care experience to be convinced that significant anxiety over this separateness is unnecessary. Where financial circumstances allow it, most parents accept baby monitor surveillance technology as a logical response to their safety concerns. Even if, as was the case for all of the parents I interviewed, parents determine through experience that such electronic surveillance is unnecessary or even, for some parents, annoying, these conclusions do not result in strong negative conclusions about the baby monitor. Financial expenses and negative emotional experiences, such as occasional sleep interruption or anxiety enhancement, are, in essence, minor concerns relative to ways parents experience the possibility of threats to the child. The catastrophic nature of significant dangers to the "precious child" renders most actions in the service of reducing these dangers, even actions that parents later judge to be ineffective, acceptable actions that contribute to the parents' beliefs in their own identities as responsible parents. This type of response by parents is very similar to the responses of patients Tymstra (1989) presents to demonstrate the "imperative character" of medical technologies. When a technology acquires this imperative character, object effectiveness becomes less the point of choosing it—just the remote possibility that it

may provide some assistance under some circumstance justifies its existence. The user's adoption of the technology itself provides some sort of comfort, the satisfaction that the user is doing the best he or she can to provide for a good outcome. The baby monitor fits this same set of characteristics—it is simultaneously effective enough and inoffensive enough to maintain its place in the minds and marketplace of parents as a routine, expected part of how responsible United States parents care for their children.

Conclusions

Freud famously conceptualized anxiety itself as a communication, a warning signal to the psychic apparatus that defense mechanism operations has somehow gone awry. While most modern anxiety researchers would probably prefer to distance themselves from psychoanalytic labels, contemporary definitions of anxiety still connote anxiety's communicative function as a warning that danger is about—even if the danger cannot be articulated, or exists only in the imagination.

Since anxiety itself is a communication, and generally experienced as an unpleasant one at that, it is not surprising that people would direct their communicative technologies and talents toward reducing or eliminating anxieties. While anxiety technologies may try to reduce anxieties by many routes, from distractive to psychopharmacologic, many anxiety technologies, such as the baby monitor on which this chapter has focused, try to reduce anxieties by getting at the risks or dangers to which the anxieties seem to point. Eliminate the dangers, the reasoning of such anxiety technologies goes, and you eliminate the necessity for and the causes of the anxiety.

As McLuhan (1964) and others have commented, technological expansions of human capacities reorganize the way the world is experienced. Surveillance anxiety technologies like the baby monitor are good examples of this. The time and space limitations of human embodiment are part of what baby monitors address, but only the visible tip of the psychic iceberg. By calling into question the space and time limitations of parental responsibility, baby monitors reach into the human psychic-constructive process itself. Monitors can modify how parents perceive risks to the child, how they define the risks for which they are responsible, and what they believe are appropriate actions to contain these risks. Even as they appear to respond to the anxieties of their users, anxiety technologies bring risk awareness to the foreground while offering themselves as the correct response to such awareness.

The baby monitor has emerged as a technology of parenthood with imperative character—its purpose is commendable enough, its success high enough, and its cost to the individual user low enough that is has made electronic infant surveillance routine and expected. But this marketplace emergence is not the result of a new product idea or a technological breakthrough. Although modern baby monitors have incorporated significant new technologies in order to communicate their warnings though new channels (video images, flashing lights, vibrations) and added new detection methods (motion detection), the most common sorts still do their job as the original designs did in the 1930s and bare significant resemblances in form and function to their 1919 ancestor.

The baby monitor has been able to become part of the background of childcare because surveillance itself has become an expected part of the parenting

enterprise. Seeing childhood as an amalgamation of risks, playing the percentages by layering parenting with technologies and procedures that seem to reduce these risks, are important parts of what makes for contemporary responsible parenthood. Even when, as seems to be the case with baby monitors, parents' experience proves a particular surveillance technology or practice more trouble than it is worth, parents are left with the satisfaction that their participation in surveillance was part of trying to be a good parent. Parents can become comfortable enough to reject some surveillance practices for themselves and specific to their own circumstances—more experienced parents seem more likely to put the baby monitor away. Nevertheless, this does not seem to lead them to diminish the value of heightened sensitivities to risks and of other surveillance practices to address possible risks.

CONCLUSIONS: SURVEILLANCE, ANXIETY, AND POWER

> …(one day we should show how intra-familial relations, essentially in the parents-children cell, have become 'disciplined', absorbing since the classical age external schemata, … which have made the family the privileged locus of emergence for the disciplinary question of the normal and the abnormal)…
>
> Foucault, *Discipline and Punish*

> To the extent that risk is experienced as omnipresent, there are only three possible reactions: *denial, apathy,* or *transformation.*
>
> Beck, "Living in the world risk society"

This study is a "pre-history" of sorts, for it explores three examples of how surveillance practices become attractive to watchers and how surveillance thinking begins to weave itself intimately into ways of viewing the world. Changes in communication technologies have changed parental watching. Changes in parenting have created a demand for new communication technologies to service emerging parenting practices. At the border between what is wished and what is possible, communication technologies of parenthood become intimate influences on some of our most intense human relationships.

This project has detailed three examples of how the insertion of communication technologies changes how the world of parenthood is experienced. These changes are not simply behavioral ones, though there is a good deal of that. These new anxiety technologies change thinking, perceptions, and attitudes. These technologies introduce new human capacities (such as visual access to the contents of the womb). They have directed and molded existing capacities (such as self-awareness and self-discipline). They have made new things possible while also helping to change our ideas of what is possible.

This study makes clear that this multi-dimensional shift toward surveillance parenting practices is a shift in thought and behavior across many different areas. For a theoretical grounding, I asked the reader in chapter one to consider the parallels between Foucault's (1995) discussion of the historic shift in western governance from spectacular to panoptic modes of power and how parenthood has developed in late twentieth century American family life. Spectacular power, as Foucault describes it, is control through force, threat and intimidation. Those in power make an example of particular individuals, who receive public and severe punishment. To avoid such a fate, others among the governed must avoid detection or abstain from prohibited behaviors. Many choose this abstinence, the path desired by those in power, but many also choose avoidance, which circumvents and can undermine this social power. Panoptic methods of power seek greater efficiency and broader effectiveness. Panoptic methods establish generalized surveillance as a cultural norm. Most people become convinced that they can be the target of effective surveillance and that undesirable behaviors will be identified and punished. Self-control and self-disciplinary thoughts, beliefs, and behaviors arise, initially as an accommodation to effective surveillance, but later as motives and practices desired for their own sakes. The role of watcher, only occasional in time and number under spectacular regimes, becomes de-centralized and much more effective under panoptic power, as each individual serves as his or her own watcher. The motives and goals of the watcher and watched become deeply aligned—in Foucault's account, primarily because the watched take on the values of the watchers.

From the watcher's perspective, a significant press for this shift toward governance by panoptic rather than spectacular modes of power comes from the greater

efficiency and effectiveness of panopticism. When there are more watchers, and most especially when everyone is watching himself or herself, the net of surveillance is much more complete than it can ever be under a top-down, avoidance and resistance inspiring organization of spectacular capture and punishment.

As the three examples, *What to Expect When You're Expecting*, fetal ultrasound, and baby monitors, illustrate, in the last quarter of the twentieth century in the United States, parents became increasingly attracted to surveillance strategies and the communication technologies that made these strategies possible and effective. Intriguingly, there is also across this same time period evidence of increasing ambivalence about corporal punishment, perhaps the nuclear family's clearest version of the spectacular exercise of power. While parents still widely practice physical punishment of their children, by the 1990s there emerged a significant decline in the percentage of parents who approved of corporal punishment—to a level significantly below the percentage of parents actually using corporal methods (Flynn, 1996). I do not want to argue for a direct parallel between Foucault's account of societal-level panoptic power and developments with the middle class American family—there are plenty of distinctions between how governance operates at these different levels that deserve greater examination than I am giving them here. However, this conflict between beliefs and behaviors around physical punishment may contribute to parents' active search for other strategies of parental control, such as panoptic methods of governance materialized as surveillance. Surveillance methods, as Foucault highlights, often have as a prime goal encouraging the individual to develop self-surveillance and self-discipline, two character traits highly valued for a variety of other reasons by many in the United States for a good

portion of its history. Many religious and secular songs, stories, and practices have long encouraged American children to see both Jesus and Santa Claus as panoptic surveillants.

The growing attraction to surveillance among parents is an interlocking set of developments, rather than a single clear and linear one. The changes in parenting attitudes and behaviors that I have described are tightly interwoven with ongoing technological developments, and the causality between these factors is interactive and multi-directional. This study has tried to identify some technical developments that contributed to the emergence of some particular surveillance technologies, but most of its focus has been on the human side of the process, what has motivated this demand for surveillance technologies and how the use of these technologies has changed the experience of parenting.

While each of the three technologies included in this study have their own immediate spheres of influence and motive forces, these case studies suggest that a few overarching characteristics of American parental thinking have helped to pushed surveillance to prominence in a number of areas. I believe the popularity of *What to Expect*, fetal ultrasounds, and baby monitors helps us to locate three significant trends in the thinking of American parents, trends that have made for a ready market for anxiety technologies that can successfully tether themselves to these ways of thinking. The convergence of these characteristic ways of thinking in American parents of the last quarter of the twentieth century helped to make the technologized, surveillance parenting that has come to pass an attractive option.

The parents who are the principal subjects of this study, middle class American parents of the last quarter of the twentieth century, have come (1) to feel that the world is

a more dangerous place for their children, (2) to perceive their offspring as more vulnerable to dangers and as less capable of avoiding these dangers on their own, and (3) to feel an increased sense of personal responsibility for the safety of their children—they believe that they both can and should control or limit a much broader range of dangers to their children than parents in the past believed they could control. This experience of the riskiness the world poses toward their children extends beyond simply perceiving the world as objectively more risky, and certainly extends beyond anything that might be considered rational judgment of the world to be more dangerous now than in the past. In many situations, parents have become less tolerant of the riskiness or dangerousness that everyday life poses to their children. However, often these new surveillance technologies provide parents with information about risks to which parents of previous generations were not privy. It may have been easier for parents without these technological aids to accommodate to risks about which they had little information, where the possibilities of control seemed much more remote. Contemporary parents are not unique in worrying about whether their fetus is developing normally, or whether their infant is safe throughout the night. But fetal ultrasounds and baby monitors provide the potential for much more intimate access to realms of baby existence—the areas that parents have to accept as unknowable, inaccessible, or uncontrollable feel smaller as a result of parental anxiety technologies. Of course, these are precisely the major attractions of these surveillance technologies, increased knowledge, accessibility, and control. *What to Expect*, remember, specifically argues that, via the self-surveillance it advocates and teaches, the pregnant women will know what should happen in pregnancy, will know her

own pregnant body better, and will have more control over her pregnancy. This will result, the authors argue, in less anxiety and a better pregnancy outcome.

Considered as a set of interconnected attitudes, if any of the three factors I have identified here were missing, parents would be much less attracted to anxiety technologies. While often these three aspects of parental thinking take the form of a conclusion that the world is now a more dangerous place for children than it was in the past, such a rational, if erroneous, conclusion does not really explain the increase in surveillance practices I have described. Every guidebook to pregnancy that I consulted, including *What to Expect,* mentions explicitly that pregnancy is now significantly less dangerous to both the mother and the child-to-be than it has been in the past. But there is little evidence that contemporary mothers feel safer or less anxious about their pregnancies than women in the past felt about theirs. Often this failure of information or education to lessen parental anxieties extends to the use of the anxiety technologies themselves. Professional medical organizations and insurance providers have been trying for years to decrease the use of fetal ultrasounds in pregnancy, citing the failure of ultrasound to make any sort of meaningful health contribution to routine, unproblematic pregnancies. Actual demand for and use of fetal ultrasound, however, seems only to have increased. Even before the explosive growth of in-home baby monitors began in the mid-1980s, research evidence strongly suggested that much more sensitive and sophisticated in-home monitors had no impact on SIDS-related deaths. Subsequent research has confirmed this repeatedly. Yet the sales of baby monitors climbs, manufacturers continue to add more complex functions to the monitors, and parents continue to cite fear of SIDS as one of their principle motives for using baby monitors.

As the term "anxiety technologies" suggests, the parenting surveillance technologies is this study are all examples in which "the medium is the message." Each medium's information provision function serves in part to bring home to its receivers the riskiness of parenting and the vulnerability of the fetus/infant. The stated purposes of these technologies are to provide the watcher with more information and with more power to act—both constructed as in the best interests of the developing child. However, while these technologies do provide parents with a great deal more focused information, in many instances parental powers to act are not enhanced to anything like the same degree. Many of the perceived enhancements in powers to effect outcomes are presumptive, illusory by-products of actual increases in information. In many situations, parents become watchers from a panoptic tower from which they have no escape. Physicians can diagnose many more problems using fetal ultrasound than they can treat. Baby monitors have little or no effects on SIDS death rates because, among many other reasons, it is virtually impossible for a parent to maintain the level of sustained attention to breath sounds required to respond in time to prevent a SIDS death. The increased sense of responsibilities parents experience even when they cannot act comes along with the genuine increases in powers to intervene that these surveillance technologies supply. These twin effects of parental surveillance technologies are virtually inseparable.

Three characteristics of parental thinking or perception—an increased sense of danger or risk, an increased judgment of offspring vulnerability, and an increased belief in their own ability or responsibility to control these risks—form the basic psychological triad that motivates the demand for anxiety technologies. All three are not necessary for parental anxiety to develop—there have always been anxious parents—but the three are

necessary for a system of beliefs and desires in which technologies become the anxiolytics of choice. With these three factors in place, anxiety becomes something to be conquered rather than accommodated. Parents perceive a need, note their own native limitations in ability to fulfill that need, and seek out tools to ameliorate these limitations and fulfill their need—in the particular cases we have focused on, the safe delivery of offspring through early childhood.

Putting the "Anxiety" in Anxiety Technologies

Each of the parenting technologies covered here causes some users to become more anxious rather than less—a whole different spin to the term "anxiety technologies." The variables contributing to this anxiety-producing effect seem to include individual, circumstantial, and technological ones, with the relative contribution of each of these factors varying considerably across different conditions. Some of the parents I interviewed reported that using a baby monitor made them more conscious of their child's vulnerability, and so more anxious. Others, spouses of the anxious ones, reported the opposite experience: hearing the baby contributed to peace of mind. Many, perhaps even most, parents get more anxious as the time for a scheduled fetal ultrasound nears, but then most of these feel better if they receive good news from the scans. *What to Expect When You're Expecting* dominates sales in the pregnancy advice book category, yet, among the popular pregnancy and baby books, it also inspired by far the largest percentage of strongly negative, one-star Amazon.com reviews—many of which comment specifically on the book's strong anxiety-inducing effects. How are we to understand these anxiety-induction effects from technologies that appear designed to

allay parental concerns? And, if they really make people more worried or upset, why do people keep using them?

While many explanations could account for the continuing popularity of these products in the face of their anxiety-inducing effects, three particular explanations seem to me, based on these case studies, to be most plausible. First, this anxiety effect might be due primarily to individual factors and so would show in only a small percentage of the population, a small enough percentage that the overall reputation and popularity of the device remains high. This would mean that a certain sector of the parenting population is most vulnerable to this anxiety induction effect. It should, in theory, be possible to identify factors that mark this vulnerable population and, in turn, to ultimately identify the mechanisms responsible for this anxiety effect. Vulnerable individuals could then be warned in advance about their increased susceptibility to such anxiety and could take this into account, either to understand and possibly to control their anxious responses to the technologies, or to assess more accurately the genuine costs and benefits of the technology. It might also be possible to modify the ways in which users encounter the technology to reduce the anxieties of vulnerable individuals. This has already happened in some instances—procedures for administering the fetal ultrasound appear to have gradually evolved in the direction of providing parents with information that is more detailed more quickly. However, while this increased information seems to reduce most parents' anxieties around the procedure, the possibility remains that this same modification might increase anxieties for some parents.

Second, the anxiety induction effects could be mild, or at least mild relative to the perceived benefits of the device, so that using the device seems reasonable to the

individual based on a rational balancing of costs and benefits. A variant of this second explanation, quite possible in the cases of any sort of "parenting technology," is that the perceived cost of failure to make use of the device is seen as so high that even a large amount of induced anxiety from the device does not deter its use. If, for example, the perceived cost of failing to use a parenting surveillance technology is the death or serious injury of the child, or the guilt from failure to exercise responsible parenthood, then even a large amount of technologically-induced anxiety would feel like a reasonable cost to avoid such an outcome. This second possibility is part of the explanation for the "imperative character" of medical technologies and procedures as discussed in chapter five. Another variant of this "benefits outweigh anxiety costs" explanation for the continued popularity of anxiety technologies is that the anxiety increase may be seen by users as temporary and/or useful, perhaps even as contributing to increased alertness and attentiveness which might improve parental vigilance and effectiveness.

Third, these anxiety effects could be subtle or hidden, perhaps only gradually becoming apparent to most users through their interactions with the device. In this latter case, the user would have already made a purchase or use decision long before fully accounting for the anxiety-induction effects of the device, so even if the user ultimately stopped using the technology, the marketplace would have already counted a paying customer. A device might show strong sales even as its actual use in the lives of parents is small. The parent interviews presented here suggest that this possibility is especially salient in the case of baby monitors. Use of technical means of surveillance dropped rapidly as the child aged and as the parents grew more accustomed to their parenting roles. Use of monitors also seemed to decline with each additional child.

These three explanations are not mutually exclusive and, as my illustrations suggest, there is evidence to support the viability of all three, perhaps working in concert in some cases. It is also important to underscore that, despite immediate emotional connotations to the contrary, all anxiety is not "bad anxiety." Increased attentiveness inspired by anxiety is certainly helpful in many aspects of parenting, while the points at which anxiety becomes unnecessary, counter-productive, or intolerable may vary considerably, both across individuals and across different circumstances for the same individual.

Power and Surveillance

Foucault (1995) developed the idea of the panopticon as a "political technology," "a way of defining power relations in terms of the everyday life of men"(205). Many scholars who have applied Foucault's work to surveillance have highlighted Foucault's own emphasis on the "optical" (205) nature of the system he describes, as well as the system's "light"-ness (201), its minimization of the physical—structures, restraints, and penalties—in its operations of power. Both Bentham (1995) in his 1771 writings and, later, Foucault seemed to delight in describing the physical details of the Panopticon as architecture, especially the details by which the supervisor could maintain his or her watch without being seen. This emphasis can lead to a conclusion that it is the constant but unconfirmable watching itself that constitutes the main mechanism of power. This reading of Foucault and Bentham equates much of what we would call "surveillance" with an automatic, perhaps even inherent, increase in power. Those who can surveil are those who gain power—surveillance confers power, rather than merely confirming it.

Foucault's work on panopticism contains many hints that the "optical Foucault," the reading of his work on panopticism as a treatise on the watching aspects of surveillance as the mechanism of power, is mischaracterization of what Foucault saw as the important links between the panoptic and power. Closer attention to "panopticism," the social process, as opposed to the "Panopticon," the architectural structure, makes it clear that, for Foucault, the isolating, classifying, and categorizing functions are vital aspects of what Foucault considers "surveillance." Above all, Foucault is most interested in how surveillance weaves itself into thought and behavior to emerge as self-discipline and self-surveillance. Foucault was light on the details by which the panoptic surveillance of particular institutions becomes the broadly practiced self-discipline of a society. As the quote that introduced this conclusion suggests, Foucault may have considered the family unit to be a principle site for training in self-disciplinary thinking and behavior. Our three case studies make clear that it is not only children who get trained by parenting—the parenting process itself provides many opportunities for the adults involved to explore the attractions of surveillance, self-surveillance, and self-discipline.

The three case studies of this project demonstrate how the relationship between power and surveillance is not so simple—watching alone does not increase the power of the watchers. In fact, the examples of *What to Expect*, fetal ultrasounds, and baby monitors demonstrate that watching untethered to ability to influence observed events renders the watcher in many ways worse off than if the surveillance did not exist. As parenting technologies demonstrate, information without influence is as likely to contribute to anxiety as to power.

Anxieties Good and Bad

The rise of surveillance practices in parenting has been subtle, remarkable but little remarked on, and deserving of attention, consideration and discussion. However, as was mentioned briefly in Chapter Five, there can be a definite tendency when analyzing such broadly evolving behaviors to picture parents as without agency. While self-discipline can most certainly be a highly effective form of soft power that benefits others within a complex web of power relations, it is nevertheless important to ask about the parents' own goals for the practices. Surveillance can be an efficient and effective form of watching that serves freely chosen parental goals. Just as all anxiety is not bad anxiety, all surveillance is not bad surveillance. In the United States in 2006, for example, more children died from neglect, from their caregivers' failures to provide adequate care and attention, than from abuse. Very young children, those under one year, were by a significant amount the most vulnerable group (Child Welfare Information Gateway 2008). So while surveillance may, for many parents, be excessive or anxiety-provoking, those findings do not mean that an opposite extreme of behavior is preferable, that less watching alone will make life somehow better for parents or children.

Foucault talked about surveillance from several perspectives. One perspective, which I have emphasized throughout this project, focuses on the power enhancing capacities of surveillance watching. Surveillance that encourages and/or compels self-surveillance becomes one of the most effective forms of decentralized power, presuming that the self-surveillance and resulting self-disciplinary actions drive the person to think and act in ways that serve the original watcher's goals. Another important aspect of Foucault's analysis of surveillance, which I have touched on but probably not

emphasized sufficiently, develops the idea that surveillance serves to construct a particular kind of subject, the target of surveillance. Because surveillance practices tend to focus on the characteristics of the target on which the watcher is most interested, the watcher's surveillance further emphasizes these characteristics in the watcher's views of and ideas about the target. Other characteristics of the target similarly become de-emphasized. When the target of surveillance is a human being, rather than seeing the target as a "whole person" or being open to being surprised by unexpected aspects of the person being watched, the watcher tends to focus on only a narrow range of the target's actions and behaviors which become, for that watcher, essentially who that target is. This focused watcher attention and narrowly constructed subject can have advantages, even for the surveillance target, when the goals of the watcher are similarly focused and narrow (and, in the case of the surveillance target, when the target wants the watcher's attention to be focused and narrow). In the case of my baby's in-utero heart surgeon, for instance, I would want the surgeon to be quite focused on proper physical diagnosis and the technical aspects of what is required to fix the observed difficulty. In the case of an airport security process, I would want the surveillance to work to remove weapons and dangerous materials that might prevent my safe travels. In both instances, it would be admirable, pleasant, and desirable if the watchers could also see their targets as "whole persons," and this might in some cases lead watchers to do their jobs better, but such whole person perception is probably not a requirement for the job to get done in an acceptable way.

Surveillance practices in parenthood present two problems in this regard. First, as has been implied throughout this project, surveillance practices actually create *two*

subjects—the target gets constructed, but the same process also serves to create the watcher. As the surveillance focus emphasizes certain characteristics of the target, this focus similarly emphasizes a particular set of sensibilities and interests of the watcher. This parallel is not perfect, of course, in large measure because the watcher typically has the power to choose this focus, and to construct how the focus of surveillance will serve his or her goals and plans. The target of surveillance has much less flexibility, often none, in this regard. This is a large part of the power of the watcher position. But this project illustrates, I believe, how the very processes of surveillance also highlight certain aspects of the watcher, while de-emphasizing other aspects. If I am nervous about my baby's well-being as he or she sleeps in another room, the monitor's presence can serve, in part, to remind me of my anxious anticipations and of my care responsibilities. At the same time that my use of the baby monitor might confirm my role of responsible parent, the watching itself emphasizes my parenting responsibility. This watcher constructive process might be relatively benign in many cases where the primary issue is the watcher's view of himself or herself, but it might sometimes have more important consequences. Others can come to judge the plans and goals you may have toward your child (as in the case of other's opinions about a pregnant woman's proper behavior). This narrowly constructed watcher role might also contribute to a parent's dissatisfaction with parenting if too much energy and attention is dedicated to safety/danger/responsibility aspects of parenting to the neglect of the broader, more complex, and more satisfying human encounter between parent and child.

This latter possibility points to the second, larger problem with surveillance practices becoming important parts of parenting, the negative consequences of

incorporating watching techniques which emphasize efficiency and objectification into this most basic of human relationships. Many of the attractions of surveillance are, perhaps, *illicit* attractions for parents. They are often appear to be (though, as have seen, this appearance can sometimes be deceiving) efficient and effective means by which parents feel themselves to be protecting their children. By promoting the idea that the best way to be a parent is an efficient, objectifying way, the parenting enterprise may become somewhat less "messy," but decidedly less rich. By encouraging the idea that parenting can become just another task for the dedicated multi-tasker, parenting risks becoming just another complex job, to be judged by an objective accounting of costs and benefits, rather than a life-changing experience that can change how the parent defines costs and benefits. Sterns (2003), The National Marriage Project (2008), and others have noted the decreasing satisfaction American adults express about being parents and raising children. Perhaps the goals and values that surveillance tools support are a part of this decreasing satisfaction—the complexities of satisfying parenting and of a fulfilling parent-child relationship might resist the efficiency and focus which surveillance promotes. Perhaps the messiness, boredom, and inefficiencies of "un-technologized" parental watching are ultimately inseparable from the attachments that make parenting worth the trouble.

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