

ABSTRACT

Title of Dissertation: A FEMINIST AFFECTIVE TURN FOR PUBLIC RELATIONS: MOTHERS, PASSIONATE PUBLICS, AND THE CHILDHOOD VACCINE DEBATE

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This project proposes a feminist intervention in how affect and publics are theorized in public relations research. Drawing from extant literature, I argue that public relations theories of affect and publics have been apolitical and lack depth and context (Leitch & Motion, 2010a). Using the context of the online childhood vaccine debate, I illustrate several theories and concepts of the new feminist affective turn, as well as postmodern theories of affect, relevant to public relations research: (a) Public Feelings, “ugly” feelings, agency, and community (Cvetkovich, 2012; Ngai, 2007); (b) passionate politics (Mouffe, 2014); (c) postmodern assemblages, biopower, and body politics (Deleuze & Guattari, 1988; Foucault, 1984); (d) affective facts and logics of future threats (Massumi, 2010); and (e) affective ethics (Bertleson & Murphie, 2010).

Scholarship in the areas of public relations, risk, feminist and postmodern affect theory, and the vaccine debate provided theoretical grounding for this project. My research questions asked: *How is feminist affect theory embodied by mothers in the vaccine debate? How do mothers understand risks as affective facts in the vaccine debate (if at all)? What affective logics are used by mothers in the vaccine debate (if any)?* And, *What are sources of knowledge for mothers in the vaccine debate?* Multi-sited online ethnographic methods were used to explore how feminist affect theory contributes to public relations research, including 29 one-on-one in-depth interviews with mothers of young children and participant observation of 15 online discussions about vaccines on parenting websites BabyCenter.com, TheBump.com, and WhatToExpect.com. I used snowball sampling to recruit interview participants and grounded theory (Glaser & Strauss, 1967) to analyze interview and online data.

Results show that feminist affect theory contributes to theoretical and practical knowledge in public relations by politicizing and contextualizing understandings of publics and elucidating how affective facts and logics inform publics' knowledge and choices, specifically in the context of risk. I also found evidence of *suppression of dissent* (Martin, 2015) and academic bias in vaccine debate research, which resulted in cultures of silence. Further areas of study included how specific contexts such as motherhood and issues of privilege and access affect publics' experiences, knowledges, and choices.

Keywords: public relations, affect theory, affect, feminism, postmodernism, publics, risk, vaccine debate

A FEMINIST AFFECTIVE TURN FOR PUBLIC RELATIONS:
MOTHERS, PASSIONATE PUBLICS, AND THE VACCINE DEBATE

by

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Dedication

To Edith.

Acknowledgments

I am tremendously thankful for and humbled by the support I received throughout this project. First, to all of the mothers whom I interviewed for this project I owe a profound thank you for sharing valuable time, feelings, and knowledge with me. I learned more from them than I could have anticipated.

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Chapter 1: Introduction

The Pros And Cons Of Vaccinating Children

The anti-vaccination movement has grown increasingly vocal in recent years, with a variety of organizations and public figures attempting to convince parents that immunizing their children presents more risks than benefits. Here are the cases for and against vaccinating children:

PROS

- Helps out pharmaceutical industry*
- Get to puncture child with needle*
- Old family syringe shop depends on it*
- Habituates children to the pain of existence*
- Flies in face of science by discrediting single unanimously refuted paper from 10 years ago*
- Healthier children equals friendlier waiters at Chili's down the line*
- Could save a few million children's lives*

CONS

- You have to go to a place*
- Chance of developing autism 100 percent*
- Puts the onus of character-building entirely on sports*
- Without suffering through diphtheria, the flu, and measles, American children will become effete, pampered do-nothings*
- Free lollipops promote unhealthy eating habits*

- *Child won't get to be kindergarten's Typhoid Mary*
- *Bullies parents into slavishly following actions recommended by decades of physicians' peer-reviewed research that establishes an irrefutable scientific consensus* (Infographic, 2014)

The above list of risks and benefits of childhood vaccinations, published online by the satirical news organization *The Onion* in 2014, reveals through snark and irony popular understandings of several anti-vaccine tropes among parents and in media. However, mainstream science and medical institutions and parents have not taken the anti-vaccine movement so lightly. It is widely known that most health experts and officials agree that the benefits of vaccines greatly outweigh risks. Many have taken stances on parents skeptical of vaccines and on the movement against vaccines, with many doctors, scientists, and public figures making statements that anti-vaccinationism is naïve at best, irresponsible and killing children at worst (Blume, 2006). Yet, even in the face of all the scientific evidence purportedly supporting vaccines, the debate rages on.

In the United States, the year 2014 marked the 20th anniversary of the establishment of the Vaccines for Children (VFC) program, which was formed in response to a 1994 measles outbreak in the country that caused tens of thousands of cases and more than 100 deaths. The VFC “provides vaccines to children whose parents or caregivers might otherwise be unable to afford them” (Centers for Disease Control and Prevention [CDC], 2014a). While the VFC has seen wide success in helping under- or uninsured children receive CDC-recommended vaccinations,¹ with vaccine coverage of kindergarten-age children hovering around 95% nationally, exemptions from

¹ For the current CDC-recommended immunization schedule for children from birth through 6 years, see <http://www.cdc.gov/vaccines/parents/downloads/parent-ver-sch-0-6yrs.pdf>

vaccinations on medical, religious, or philosophical grounds still tend to cluster geographically and pose risks of outbreaks of vaccine-preventable diseases (VPDs) such as measles (Seither et al., 2014). The continuing resistance of many parents to vaccinate in spite of mainstream scientific evidence purported to support widespread immunization, the nuances and complexity of the issue of childhood vaccines, and the sometimes jarringly violent rhetoric that constitutes the debate²—and particularly how moms experience and construct knowledge around those many elements—give purpose to my research. Another primary purpose of this project is to show how feelings, emotion, and affect can be reconceptualized through a feminist affective lens in public relations research in ways that more closely reflect the reality of how affect is experienced and operates in publics, relationships, and communication. The following section will give theoretical and practical contexts that inform this project.

Context: The Vaccine Debate

In 1998, Andrew Wakefield and several coauthors published a now-infamous study suggesting a link between the measles, mumps, and rubella vaccine (MMR) and inflammatory bowel syndrome—and possibly autism. Through media appearances, Wakefield promulgated his findings widely (Brown, 2011). Subsequently, Wakefield was accused and found guilty of ethical violations and even fraud associated with the MMR study, his coauthors and the journal in which it was published (*Lancet*) retracted the article, and Wakefield’s medical license in the UK was revoked (Brown, 2011). The

² Some participants in this study disagreed with this label, arguing that calling the struggle over childhood vaccination a “debate” implies that both sides have legitimate stakes and claims. Further, the label “movement” (e.g., “anti-vaccine movement”) has been problematized (see Blume, 2006). While I recognize the legitimacy of the contestation over the words “debate” and “movement,” I will use them throughout this paper as they reflect how the fight over vaccines is constructed and talked about in prevailing social discourses.

original study's key findings related to the MMR-autism link have not been replicated (Serpell & Green, 2006). Still, the link remains real enough for many parents to have had long-term effects on vaccination rates, and many scholars and scientists remain stumped as to why "Parental concerns continue despite subsequent studies showing no link between MMR and autism" (Serpell & Green, 2006, p. 4041).

The MMR-autism spectacle is just one of many that have emerged and shaped the vaccine debate going back two centuries (Blume, 2006). Many of the same vaccine-critical arguments against compulsory immunization policies in the 19th and 20th centuries—as well as critiques from pro-vaccination activists against vaccine skeptics—are still substantive to the debate today (Blume, 2006). For instance, the theme of (political, medical, and bodily) autonomy: Some activists taking anti-vaccination, vaccine-critical, or pro-choice stances³ to vaccines have decried mandatory immunization policies, claiming that such laws encroach on individuals' civil liberties to make decisions regarding their own bodies and their children's health (Blume, 2006). Others focus their criticism on efficacy, safety, and necessity of vaccines themselves, claiming that the inoculations are ineffective at best, or, at worse, are violent to children's delicate immune systems and trigger other adverse reactions such as autism, diabetes, asthma, allergies, encephalitis, seizures, sudden infant death syndrome (SIDS), and attention deficit disorder (Blume, 2006).

³ Though it is not commonly known or recognized, parents who are not pro-vaccine do not all identify as anti-vaccine, some aligning with categories such as pro-choice, pro-parent-choice, pro-safe-vaccine, pro-vaccine-education, vaccine-critical, etc. I have made every attempt to avoid oversimplifying or over-determining participants' positions on vaccines. For a detailed description of each participant and their vaccine positions, see Appendix C.

On the other side of the debate, “experts” (e.g., mainstream scientists, doctors, communication scholars, and public health officials) have used large-scale, biomedical evidence-based studies to support claims about the safety, effectiveness, and fundamental role of vaccines in ensuring healthy global populations (Blume, 2006). However, many have also noted that these findings and/or how they are communicated to “lay” publics (e.g., most mothers) have been ineffective in persuading vaccine skeptics that the benefits of immunizations outweigh their risks (Bean, 2011; Betsch 2011; C. Betsch, Renkewitz, T. Betsch, & Ulshofer, 2010; Davies, Chapman, & Laesk, 2002; Kata, 2010, 2012; Kaufman, 1967; Spier, 2002; Wolfe & Sharpe, 2002; Wolfe, Sharpe, & Lipsky, 2002; Zimmerman et al., 2005). Some scholars have proposed that *affective* appeals of *anti-vaccination* rhetoric (e.g., anecdotes, personal narratives of vaccine-adverse events, frightening images of hypodermic needles and children adversely affected by vaccines), especially when set against the more technical and dry presentation of pro-vaccine information that often comes down from experts, are perhaps a key contributor to the success of anti-vaccination communication. On the other hand, as I will demonstrate in chapter four, pro-vaccine activists, particularly online, frequently employ many of the same affective tactics (graphic images, anecdotes, and emotional rhetoric) to promote vaccination as those that have been associated with the relative success of the anti-vaccine movement.

A similar group of scholars have focused on how the Internet has (or has not) energized the vaccine debate—by accelerating the dissemination of vaccine information (especially vaccine-critical discourses), proliferating sources of vaccine information, altogether making an overwhelming amount of conflicting vaccine information from

more and less credible sources available to mass audiences who may not accurately assess veracity and credibility of said information and sources (e.g., Bean, 2011; C. Betsch, 2011; C. Betsch et al., 2010; Davies et al., 2002; Kata, 2010, 2012; Wolfe et al., 2002; Zimmerman et al., 2005).

Risk, Vaccines, and Affect

More broadly, scholars have increasingly recognized the significant roles that affect plays in health and risk communication contexts, especially in risk perception and related decision-making (e.g., Adil, 2008; Bean, 2011; C. Betsch et al., 2010; Covey, 2011; Davies et al., 2002; Finucane, Slovic, & Mertz, 2000; Kata, 2010, 2012; Slovic & Peters, 2006; Spier, 2002; Wolfe et al., 2002). Many have theorized that straightforward public information campaigns do not adequately educate lay publics about (especially technical) risks as they were traditionally assumed to have done by, for example, risk and health communicators guided by uncertainty management models of risk communication (Seeger, Reynolds, & Sellnow, 2010). In spite of growing recognition of the centrality of affect in health- and risk-related decisions, however, much social scientific inquiry on the topics have arguably underestimated affect's intricacies, primacy, immanence in everyday lived experiences, and its inescapable tenacity.

Feminist affect theory—often drawing from and overlapping with affective turns in queer theory, critical-cultural studies, and postmodernism—is a theoretical approach to conceptualizing affect, not instrumentally (i.e., not for administrative purposes of predicting or guiding publics' beliefs and behaviors), but in a way that seeks to understand how affect underlies public opinion and action and builds or suspends agency in individuals and communities (Cvetkovich, 2012; Ngai, 2007). Affect theorists in this

vein resist pathologizing “bad” affects (e.g., depression, unhappiness, shame); rather, they view these “ugly feelings” (Ngai, 2007) as both potential sources of agency (agentic) and symptomatic of larger social problems, especially as associated with politics of late capitalism and empty promises of neoliberal society and new consumer culture (Ahmed, 2010; Berlant, 2011; Cvetkovich, 2012). Feminist affect scholars also resist partitioning affect into discrete, isolatable, even quantifiable emotions or feelings, as has been common in much social scientific research (e.g., Bertelsen & Murphie, 2010; Massumi, 2010).

It may be easy to see why this “new” feminist affect theory has not been embraced widely in the social sciences; apart from its relative youth as a conceptual lens—the latest affective turn is barely 20 years old (Seigworth & Gregg, 2010)—affect theory that follows this trajectory is also unwieldy, especially when it stands in (often stark) contrast to social scientific theories and research that aim to restore certainty and control in social relations and processes (Bertelsen & Murphie, 2010; Massumi, 1995; Seigworth & Gregg, 2010). Indeed, some feminist affect sensibilities may be inappropriate for and irreconcilable with empirical and objectivist epistemologies and methods, such as natural sciences. Yet, I argue and demonstrate in this project that affect theory stands to make valuable contributions to social science disciplines, especially in qualitative inquiry.

More specifically, I argue that public relations scholarship, which is concerned with publics and organizations, the people who constitute them, and the relationships and communication between them, is aptly poised to make use of affect theory to develop new understandings of how publics feel and think about issues, the nature of their

relationships with each other and with organizations (especially keeping in mind the community-forming or *bonding* role of affect), and how and why publics act (looking at the *agentic* role of affect). Further, affect theorists have written about the “ugly” feelings (e.g., fear) that can motivate public behavior and opinion that defies (rational) logic, especially in the face of perceived risks or threats (e.g., Bertelsen & Murphie, 2010; Massumi, 2010, 1993).

In this study, then, rather than assuming that I share the same basis in facts and reasoning as the participants, I take a step back and ask: What *are* the (affective) facts and logics that structure the childhood vaccine debate, and more broadly, how can feminist affect theory help us understand the vaccine debate? More specifically, my research questions ask: *How is feminist affect theory embodied by mothers in the vaccine debate? How do mothers understand risks as affective facts in the vaccine debate (if at all)? What affective logics are used by mothers in the vaccine debate (if any)? And, What are sources of knowledge for mothers in the vaccine debate?*

In the following chapters, I will demonstrate how the above concepts taken from the feminist affective turn can further public relations theory and practice. However, it is important to note here that, as this project is a critical undertaking informed by certain feminist ethics, my aim is not to “discover” new ways that publics operate affectively so that organizations can appropriate that knowledge in the service of achieving their own ends. On the contrary, my inquiry aims to be truly public-centric. In other words, I hope that my research will work to expose and sensitize readers to the vastly different stories, knowledges, needs, desires, and lived experiences shared by mothers who are most intimately affected by the vaccine debate—with the purpose of increasing awareness,

tolerance, caring, understanding, and ethical and effective communication among all parties.

Preview of Chapters

The following chapters are devoted to (a) reviewing areas of literature that give the context and rationale for my study and research questions—affect theory, public relations, risk and health communication, and the vaccine debate; (b) explaining my epistemological and ethical commitments in this project and choice of methods (one-on-one interviews and participant observation of online data), recruitment, samples, data collection and analysis procedures, and validity and reliability; (c) displaying evidence from interviews and online data that speak to my research questions; and (d) discussing the theoretical and practical implications of the study's findings, especially regarding how feminist affect theory can add to public relations knowledge and understandings of publics.

First, chapter two offers an extended literature review that synthesizing the theoretical areas listed providing the conceptual framework for my project: public relations, risk communication, feminist affect theory, and the vaccine debate. Because each area overlaps to some extent, the sections build on each other. I begin by defining *public relations* and publics with an eye to how emotion and affect have been treated in public relations research. I then offer a brief overview of the new affective turn, specifically focusing on the trajectory that is my point of departure for this project: *feminist affect theory* with influences from postmodernism and queer studies. This section defines and delineates relevant terms, including affect, emotion, and feelings, and I explicate my own definitions of the same concepts. The section also summarizes specific

ideas or projects of feminist affect theory that I will argue have relevance to public relations research and practice: Public Feelings, affective logics of threat (as risk), affective ethics, and body politics. Next is an overview of literature about *risk* and *risk communication*, with explorations of scientific and cultural/critical approaches in risk research, as well as how risk overlaps with public relations and *health communication* and how the field of risk communication has incorporate affect to this point. Finally in chapter two, I turn the discussion to the issue of vaccination and the *vaccine debate*: the history of pro-vaccine and vaccine-critical discourses and movements, the current state of communication about and public perceptions and uses of vaccines, and how the vaccine debate has unfolded (and is still unfolding) online. The discussion of the vaccine debate includes topics of motherhood, gender, suppression of dissent, and shame and stigma related to parents' vaccine choices. Themes of affect and risk communication are woven throughout the discussion of vaccines and the vaccine debate.

The final major section of chapter two before wrapping up is intended to not only give theoretical background for some of my findings, but also speaks to claims I make in chapter three about my epistemological and methodological approaches to inquiry, generally (usually) and for this project: I review feminist and postmodern approaches in research and theories of knowledge, including standpoint theory (Hartstock, 1984; Harding, 2004, 2015), specifically a maternal standpoint informed by care and maternal thinking (Ruddick, 1980, 2004) and bolstered with strong objectivity (Harding, 1993, 2015); affective politics and practices of care, compassion, and courage in research and theories of knowledge (Little, 1995; Sparks, 1997; Porter, 2006); and feminist criticisms of dominant scientific and medical communities' claims to authoritative knowledge (e.g.,

truth). This part of the discussion of postmodern feminist inquiry also highlights the overlaps and conflicts between feminist and postmodern philosophies, with attention given to ethics and concepts of self-reflexivity, power, “truth,” experience, and subjectivity/objectivity. I also briefly comment on the feminist health movement in the US of the 20th century and feminist approaches to bioethics. I conclude the chapter with a summary, again highlighting key themes in the literature reviewed and their intersections with and relevance to each other, paying special attention to how they inform my research questions.

Chapter three explains the methodological choices I made for this study, as well as giving details about my samples, recruitment of interviewees, selection and collection of online data, data analysis, and issues of validity and reliability in my study and in qualitative research in general. The chapter is infused with my postmodern feminist epistemology—informed by affect theory and a maternal standpoint (also covered in part in chapter two)—and how my epistemology and standpoint in turn informed my approach to qualitative inquiry. In the first major section of chapter three, I overview key tenets of qualitative methodology (e.g., self-reflexivity, flexibility, holistic nature, and depth of findings) and explain why I have adopted qualitative and critical methods for this study, and especially why a qualitative methodology is justified for this exploratory project. I then give an account of the qualitative methods I used for this project: online multisited ethnography (Gatson, 2011), including participant observation and one-on-one interviews. I outline and give rationale for the procedures I used during each of these phases, as well as recruitment and sampling strategies and ethical implications. Following the overview of data collection, I turn to my methods of data analysis, which were

informed by grounded theory (Glaser & Strauss, 1967) for analyzing interview transcripts and data from online discussions about vaccines. Next, I explain how validity and reliability are (or are not) achieved in qualitative research in general and in this project specifically. Finally, I include a discussion of self-reflexivity, which, in the spirit of “strong objectivity” (Harding, 2015, 1993), includes an extended statement of my own subjectivity and knowledge that I carried with me throughout this project and implications for the study’s outcomes, as well as my position (thoughts, feelings, beliefs, conflicts, and confusion) on vaccines.

Chapter four presents the data I collected via qualitative interviews and observing online vaccine discussions, as well as critically analyzing online vaccine information and texts that were relevant to participants in this study and in the vaccine debate more broadly. Inductive analysis of data guided by grounded theory led me to identify eight general themes from interviews and online discussions about vaccine among mothers: (a) *maternal thinking*, (b) *science and knowledge*, (c) *individual versus greater good*, (d) *fear*, (e) *bodies*, (f) *privilege, access, and choice*, (g) *silence, shame, and stigma*, and (h) *affect in publics*. The evidence presented is organized loosely around my research questions: *How is feminist affect theory embodied by mothers in the vaccine debate? How do mothers understand risks as affective facts in the vaccine debate (if at all)? What affective logics are used by mothers in the vaccine debate (if any)? What are sources of knowledge for mothers in the vaccine debate?*

Finally, chapter five contextualizes results from the previous chapter in the literature reviewed in chapter two from the areas of public relations, (postmodern) feminist theories of affect as well as critiques of dominant science and medicine and

proposals for “other” ways of knowing, risk communication, and the vaccine debate. Chapter five begins by briefly reviewing basic concepts in risk and affective facts and logics in the context of my findings. The remainder of this chapter’s main discussion is informed by and loosely organized around the eight themes grounded and identified in the data: First, I will propose how the vaccine debate embodies feminist affect theory, especially in areas of Public Feelings, community and agency, body politics, biopower and biopolitics, and publics as passionate, political, and postmodern assemblages, ultimately proposing a (postmodern) feminist affective theory of publics for public relations. I will then turn to a discussion about maternal thinking and feminist standpoints in this example of publics-centered public relations and risk research. Next, I will explain affective logics related to fear and care that inform ideas about individual versus collective wellbeing related to vaccines—and problematize that popular dichotomy. Following will be a discussion of the roles of dominant science in the vaccine debate, interrogating assumptions and claims (which exist implicitly if not explicitly in much dominant public relations literature) about the epistemic authority of science versus “other” ways of knowing. Finally, I will explore the culture of silence I encountered and learned about in the vaccine debate that is at least partly (re)produced through processes of shame, stigma, and threats of backlash or discrimination—which, I will argue, is in fact *not* particular to the vaccine debate, but to more global institutionalized knowledge, especially emerging from dominant science and academic research communities. I conclude with a brief summary discussion of practical and theoretical applications of feminist affect theory in public relations, followed by limitations of the present study and future research directions.

Chapter 2: Literature Review

Public relations, affect theory, and risk communication have expansive bodies of literature that reflect each of their rich research traditions both independently and in relation to each other. This chapter will review literature in each of those areas—public relations, feminist affect theory, and risk communication—and follow with a discussion of the vaccine debate. First, I will overview literature in public relations, defining public relations and publics, and expanding on how affect and emotionality have been conceptualized and studied in the field. Next, I review feminist affect theory, beginning with a general overview of the new affective turn, then discussing more specifically the feminist trajectory of affect theory I use in this study—which is also influenced by postmodernism and queer theory—and explain how I define affect, feelings, and emotions for the purposes of this project. The review of feminist affect theory also includes specific concepts and projects in the new affective turn that are relevant to my study and to public relations research and practice more generally, such as Public Feelings, community, agency, affective logics of threat (as risk), and affective ethics. Next, the chapter overviews risk research, including how risk communication falls into the realm of public relations, and specific theories of risk relevant to this study: cultural and social theories of risk, risk in science communication, risk in health communication, and affect theories in risk research. Finally, I review literature about the history and evolution of the vaccine debate, especially as related to the online environment and issues of affect and risk. The section concludes with a short summary synthesizing these areas of literature and explaining how they informed by research questions.

While the recent feminist affective turn and public relations have not been explicitly linked before, affect as a theoretical and practical concept with consequences for public relations research has been explored in areas such as crisis communication (e.g., Coombs and Holladay, 2007; Jin, 2009, 2010b; Jin & Pang, 2010; Jin, Pang, & Cameron, 2007, 2012; Jin, Park, & Len-Rios, 2010; Kim & Cameron, 2011), activism (Boyd & VanSlette, 2009; Ganesh & Zoller, 2012; Holtzhausen, 2012), and organizational communication and leadership (e.g., Aldoory, 1998; Aldoory & Toth, 2004; Arthurs, 2014; Fitch & Third, 2014; L. Grunig, Toth, & Hon, 2000; Jin, 2010a; Yeomans, 2007, 2014). Yet, as I will argue, the full bearing that affect can have on public relations theory and practice has not been realized in public relations research. Affect's relevance to risk and health communication (both of which I will argue later can be understood as public relations, and vice versa, in many of their iterations) has also been pursued, especially the inescapable influence of affect on publics' perceptions of risk, and affective and qualitative evaluations of risk as juxtaposed with scientific and objective estimates of risk (e.g., Adil, 2008; Covey, 2011; Fischhoff, Gonzalez, Lerner, & Small, 2005; Fischhoff, Gonzalez, Small, & Lerner, 2003; Slovic & Peters, 2006). Further, risk communication's place in public relations theory has been solidified by scholars such as Palenchar and Heath (2002, 2007).

One setting where risk and health communication (as public relations) and affect converge strikingly is the vaccine debate. Many scholars have recognized this, writing about the affective dimensions of anti-vaccine discourses and the unique nature of risk that vaccines pose (e.g., Betsch et al., 2010; Blume, 2006; Brown, 2011; Nan & Madden, 2012). This section will first review literature from each of the theoretical areas—public

relations, affect theory, and risk and health communication—focusing on their individual contributions to the vaccine debate, as well as highlighting their intersections with and contributions to each other. These sections will include definitions of concepts central to this study, including public relations and publics, affect and related terms (e.g., emotions and feelings), and risk and risk communication. The latter part of the chapter will outline the issue of childhood vaccines, providing a brief historical overview of the vaccine debate itself, and ending with a review of studies about how the vaccine debate has unfolded online. First, I will begin by defining and synthesizing public relations and feminist affect theory.

Public Relations (and Affect)

Affect in public relations research is frequently an afterthought or unnamed influence in public relations research—hence the parenthetical in the section heading—often under-theorized and treated instrumentally, simplistically, and/or synonymous with discrete and operationalizable emotions. Further, the vast majority of research on affect and emotion in public relations has pooled in two areas: crisis and organizational theory literature. In the latter, affect vis-à-vis emotionality as a gendered performance in workplaces has been embraced by some scholars in the past 20 years, largely in thanks to the relatively recent feminist turn in public relations research (e.g., Aldoory, 1998; Aldoory & Toth, 2004; L. Grunig et al., 2000). In crisis literature in public relations, affect has been conceptualized as discretely identifiable emotions in publics that, if properly understood, can be used to predict behavior (e.g., Jin, 2009; Kim & Cameron, 2011). Further, negative emotions such as anger are routinely considered problems that need to be fixed or overcome (e.g., Coombs & Holladay, 2007).

In other areas, scholars have sometimes denigrated the concepts of affect and emotion in public relations, questioning their very place in theory and practice. For example, some ethics scholars in public relations have linked emotions with propaganda, contrasted against more “rational” and “ethical” *cocreative* or *symmetrical* public relations (Fawkes, 2007). More commonly, however, affect and emotions have been overlooked in public relations scholarship (Yeomans, 2007). This paper will attempt to address this void, arguing that affect deserves a more central place in public relations research, and proposing feminist affect theory as a theoretical framework and intervention for that very purpose.

In the following sections, I will first define relevant concepts, such as public relations and publics, and then review areas of public relations scholarship where affect and emotions have been relatively visible: crisis communication, organizational communication, and postmodern/“postrational” theories of public relations as activism.⁴ This section will also elaborate on how affect and emotion have been defined in public relations theory and discuss limitations of those definitions. Next I will overview feminist affect theory, paying special attention to specific areas where affect theory and public relations intersect, briefly: (a) theories of public feelings and community, (b) dealing with negative emotions, (c) risk, and (d) ethics.

⁴ While organizational communication theory is another area of public relations research that has a sub-agenda of research dedicated to affect and emotion (see Aldoory, 1998; Aldoory & Toth, 2004; Arthurs, 2014; Fitch & Third, 2014; L. Grunig et al., 2000; Jin, 2010a; Yeomans, 2007, 2014), this literature review will focus on crisis and activism and public relations research, as those areas are more directly related to theories of public feelings and risk communication cogent to this project.

Defining public relations concepts. Public relations has been defined several ways, but this definition of public relations as strategic management of communication is arguably the most classic and ubiquitous in literature: “the management of communication between an organization and its publics” (J. Grunig & Hunt, 1984, p. 6). However, other scholars have defined public relations less administratively and more collaboratively and holistically (and idyllically), locating the function of public relations outside of corporations and management, such as in Kent and Taylor’s (2002) dialogic theory of public relations: They defined *dialogic* public relations in contrast to *strategic* communication, where the latter “might be more effective at achieving the interests of the organization or the public in question than would a dialogic approach to communication” (p. 24). On the other hand, dialogic public relations is defined by cocreation of meaning and earnest care for the Other. Sommerfeldt (2013) similarly defined public relations as a function of democracy and a “rhetorical communication phenomenon practiced by any social actor—individual or organization,” as a “meaning-making” and “relationship-building” function, “building communities so that individuals and organizations work together for the public good” (p. 287). It is clear that public relations definitions run the gamut, but they share an emphasis on the public nature of communication. A more critical approach to conceptualizing public relations as a practice and an academic field situates it historically and contextually, even conjuring such tainted concepts (in dominant literature at least) as hegemony and propaganda (e.g., Demetrious, 2006; Roper, 2005; Weaver, Motion, & Roper, 2006). For example, Weaver, Motion, and Roper (2006) approached defining public relations through a discourse theory lens concerned with power, resistance, and hegemony to understand “the significance of

public relations contributions to the formation of hegemonic power, constructions of knowledge, truth, and the public interest” (p. 21). A Foucauldian approach to theorizing power and knowledge bound up in discourse suggests that publics or (individual members of the general public), when motivated, can be active in participating in organizational and other social relationships, knowledge production, and distribution of power even if those publics appear passive or oppressed by dominant powers (e.g., power in corporations and other dominant social institutions), such as through acts of resistance. The critical discourse theory perspective offers a definition of public relations that I will take up in this project: “Public relations becomes a tool of social power and change for utilization by not only those who hold hegemonic power, but also those who seek to challenge and transform that power and reconfigure dominant perceptions of the public interest” (Weaver et al., 2006, p. 21). This definition, which aligns with my own, removes public relations from the exclusive realms of professionals, organizations, and capitalistic pursuits while retaining the strategic dimension of the practice and adding a critical focus on power and hegemonic social orders, institutions, and ideologies.

Further, critical perspectives draw on critical definitions of hegemony not as some tyrannical and coercive process enacted by powerful institutions and individuals that colonizes public opinion and coerces public compliance, but as a process of power in which publics can be complicit yet active in reinforcing, or which publics can actively resist and even create new hegemonic social orders (e.g., Weaver et al., 2006; Mouffe, 2014). Additionally, this critical definition of public relations acknowledges that goals of establishing symmetry and dialogue among publics and organizations may be idealistic, naïve, even misguided in that such aims do not take into account the power and political

contexts in which public relations happens. Finally, a critical discourse approach to conceptualization of public relations emphasizes the importance of context and politics in evaluating public relations' implications for publics, society, regimes of power, and ethics—not evaluated by the administrative effectiveness of communication tactics and strategies: “the merits of propaganda and public relations practice can only be judged in terms of the contexts and ends to which they are used” (Weaver et al., 2006). In other words, public relations is not necessarily inherently “good” or more ethical than propaganda—in fact, the two practices have arguably been indistinct at many points in history—but the *ends* and ethics and politics of public relations (or propaganda) are what determine the character and social worth of strategic and public communication practices.

Publics. *Public* and *publics* in public relations literature have likewise been defined variously. According to Leitch and Neilson (2001), there have been two main strands of thought regarding what constitutes the “public” in public relations: “The *strategic* approaches that dominate the field...portray publics as consumers of targeted organizational messages. The *dialogic* approaches portray publics as active and equal participants in a dialogue with the organization. Both approaches emphasize the organizational perspective” (p. 128, emphasis added). In other words, according to Leitch and Neilson, mainstream definitions of public/s in public relations research (including dialogic) are essentially organization-centric, regardless of the directionality of communication—though Kent and Taylor (2002) would likely disagree, as I will explain shortly.

The traditional *situational* definition of publics offered by J. Grunig and colleagues (inspired by works of John Dewey and his contemporaries) classically

illustrates a strategic approach to defining publics (J. Grunig, 1997). The situational theory of publics (STP), which has come to be a hallmark of dominant public relations theory, focuses on the situational nature and communicative behavior of publics, specifically as in response to an issue or problem, and the organizations responsible for those problems. J. Grunig and Repper (1992) explained: “Publics organize around issues and seek out organizations that create those issues” (p. 128). STP defines publics not only strategically (and for organizations), but also by a rationalistic logic by which publics are assumed to think and act. On the other hand, a *mass* (opposed to situational) imagines a unitary public as an enduring state of consciousness in a democratic society that encompasses all citizens, all the time (Vasquez & Taylor, 2001). Leitch and Motion (2010a) explained that increased focus on segmentation in theories such as STP moved public relations researchers to abandon the idea of a general or mass public as a theoretical concept. Indeed, J. Grunig (1997) considered a situational definition of publics an improvement on a theory of mass publics.

The above strategic definitions of publics can be contrasted to more *dialogic* ones (Leitch & Neilson, 2001). Kent and Taylor (2002), for example, argued that dialogic public relations is “public centered,” and “Publics should not be thought of by organizations as ‘others’” (p. 32), but rather as communicative *equals*. Yet, while many public relations theorists have found situational and dialogic theories of publics useful and even ideal, some more critical scholars have been less optimistic about the value of conceptualizing publics as either situational or equal.

Leitch and Motion (2010a) critiqued traditional public relations research for theorizing publics and organizations as interchangeable and equal entities. They argued

that this simplistic notion of publics and organizations was only possible because of a lack of context and power in public relations theory, which has enabled scholars to mask disparities and ontological differences between and among organizations and publics and in society at large: “In a decontextualized theory of engagement with publics, the associated complexities—including the social, political, economic, ideological, virtual, and physical components of engagement—has been rendered largely invisible” (p. 100). They also argued that publics have dominantly been theorized from an exclusively organizational perspective: “Unorganized publics are, in effect, merely artifacts of the organizations themselves, which have no existence outside of particular public relations strategies” (p. 102). Taking a discourse theory perspective (as described above), they argued for a re-contextualization of public relations concepts in order to develop more grounded and realistic theories of publics and public relations.

Similarly critical (in theory), Demetrious (2006) explained that the above dominant definitions of publics, especially Grunigian theories of publics grounded in theories by Dewey and Blumer, for example, are influenced by assumptions of a pluralistic society. She proposed that political philosophy of pluralism assumes that “conflict of self-interest between groups is not of primary importance,” and, “while pluralists do not regard all groups as equal, they do consider that power is generally dispersed and available in different forms that allows influence to be exerted in democratic societies” (p. 100). This excerpt describes a classically liberal theory of pluralism that assumes that all groups have the opportunity for and access to equal or equitable exertions of power and voice in public and social matters and forums. Mouffe (2014), who is not a public relations scholar but a political philosopher, explained the

problems with and differences between liberal and pluralist theories and their convergence that constitutes the liberal pluralism that, I would argue, informs dominant constructions of publics in public relations theory:

While recognizing that we live in a world where a multiplicity of perspectives and values coexist and that it is impossible...that each of us would adopt them all, *liberal theory* imagines that, brought together, these perspectives and values constitute a harmonious and non-conflictual ensemble. This type of thought is therefore incapable of accounting for the necessarily conflictual nature of *pluralism*, which stems from the impossibility of reconciling all points of view...*Liberal pluralists* acknowledge that in democracy ‘the people’ can no longer be considered as ‘one’ but they see it as being ‘multiple’, while it should be understood as divided. (p. 150, emphasis added).

Liberal pluralism, in other words, and the public relations paradigms based on it, assume that differences in opinions and interests among groups in society can be, with proper communication, reconciled—ideally to create the best possible solution or outcome for the greater good.

Mouffe (2014) countered liberal pluralistic models with her own theory of a “passionate” and *agonistic* pluralism that recognizes the impossibility of consensus and reconciliation among all competing voices in the public sphere, as well as the idea that some voices or groups may not even have a legitimate stake or place in the public sphere (which would be the *antagonistic* players who reject foundations of democratic society and deliberation, such as those who use terrorism to achieve their ends). Mouffe’s theory of pluralism also recognizes the competing passions in public deliberation and social

discourses and hegemonic orders—passions that drive people to identify politically with, for example, the publics or institutions that most align with their own passions and values. Thus, Mouffe’s passionate, agonistic pluralism recognizes the primacy and power of affect (passions) in the formation and agency of publics.

Mouffe’s (2014) conceptualization of society and competing interests and motivations of publics asserts that “what is at stake in politics is the constitution of political identities on the mode of a we/they discrimination and that this always entails a libidinal⁵ investment” (p. 155). Taken together with Demetrious’ (2006) critique of traditional definitions of publics, Leitch and Motion’s (2010) critical discourse theory approach to understanding publics in public relations theory, and Weaver et al.’s (2006) and Leitch and Motions’s calls to *contextualize* public relations and publics, Mouffe’s construction of publics as always political and implicated in social contexts of power and discourse informs my own understanding of publics in the context of public relations practice and theory.

Affective publics. Another, less visible trend in defining publics in public relations literature is seen in crisis communication research that focuses on emotions and/or affect⁶ (e.g., Coombs and Holladay, 2007; Jin, 2009, 2010b; Jin & Pang, 2010; Jin, Pang, & Cameron, 2007, 2012; Jin, Park, and Len-Rios, 2010; and Kim & Cameron, 2011). Crisis research incorporating affect and emotion implicitly or explicitly define publics as not only rational, logical groups of people who organize and communicate in

⁵ *Libidinal* in this context comes from Freudian psychoanalysis theories and, roughly, can be understood as embodied desire that drives individuals to action in relevant contexts (see Gerson, 2004; Watkins, 2010).

⁶ While I will define affect and emotion as distinct later in this chapter, I use both terms—at times synonymously—to reflect how the research or researchers I reference have used them.

response to a collective perceived problem (as in J. Grunig's STP), or in a good faith effort to make meaning with an organization (see Kent & Taylor, 2002), but also as *affective* individuals and groups whose perceptions and behavior (a) are influenced by such factors as emotional news coverage and framing (e.g., Kim & Cameron, 2011), and (b) influence such behaviors as word-of-mouth communication and purchase intention (e.g., Coombs & Holladay, 2007). Thus, affective publics in crisis research are conceptualized as being both susceptible to emotional communication and also as driven or empowered by emotions and/or affect to influence organizational autonomy and success in achieving organizational goals.

Given the centrality of affect and emotion in this strain of crisis research, it is also important to understand how those researchers define affect and emotion to begin with, and how emotion and affect have been understood in other areas of public relations theory. The following section will focus on two key areas of public relations research that have notably acknowledged affect, including crisis communication, and post-rational/postmodern activist literature.

Affect in crisis. Crisis scholars who write about emotion and affect have notably acknowledged the significant influence affect can have on publics' perceptions of crises, issues, and the organizations that (are perceived to have) spawned them. However, approaches to studying affect in crisis communication remain relatively narrow, typically focusing on how to measure, predict, and operationalize emotions to make them identifiable, qualifiable or quantifiable, discrete, and instrumental for organizational public relations. Much of this crisis research attempts to identify emotions among publics so that they can be more effectively directed (by organizations) to aid organizational

recovery after crises (e.g., Jin, 2009; Kim & Cameron, 2011). This group of scholars have worked to fill the affective voids in public relations and crisis theory by using largely quantitative studies that attempt to measure how certain emotions are experienced by publics and how they influence publics' attitudes, behaviors, and/or intentions. Coombs and Holladay (2007), for instance, studied the effect of anger on communication and purchase intentions of publics, in short arguing that angry publics should be a priority for organizations in crises because of the significant material consequences angry stakeholders can have for organizations. They offered suggestions to crisis managers for how to "mitigate anger" and to scholars for future research "to explore how crisis response strategies can be used to mute the negative communication dynamic" (p. 310). This statement echoes many conclusions in crisis literature measuring emotion from organizational and management perspectives.

Additionally, most crisis scholars who write about emotion conceptualize and study it through the lens of *psychology*. A prime example, Jin (2009) defined emotion citing behavioral psychologist Lazarus (1991): "[O]rganized cognitive-motivational-relational configurations whose status changes with changes in the person–environment relationship as this is perceived and evaluated (appraisal)" (p. 310). Additionally, much crisis research is about "bad" emotions and uses *attribution theory*—publics who blame organizations for crises will be angry—and *affective event theory*—"the greater the felt involvement, the stronger the impact of the crisis on anger and purchase intention" (Coombs & Holladay, 2007, p. 302).

The review of crisis literature about emotion thus far reflects a certain homogeneity that marks the field—not only in treatment of affect as emotion, but also in

the relatively small cohort of scholars studying it. Jin's (2010b) statement of purpose generally sums up the affect trajectory in crisis literature:

[T]his study is to examine the effects of public's appraisals of crisis predictability and controllability on their emotional responses, coping strategy preference, as well as the assessment of organizational crisis responses. The results of this study...highlight the importance of an integrated understanding of public's cognitive and affective processes in order for the crisis managers to achieve the overall effectiveness of organizational crisis responses. (p. 525)

While this cause has proven worthy for organizations, publics, and public relations managers who find themselves in crises, the perspectives in crisis literature about affect still remain largely organization-centric, quantitative, and somewhat narrow in its conceptualization of affect as discrete emotions.

In sum, crisis research has taken more steps to recognizing affect in publics than arguably any other area in public relations. Affect in these crisis studies is widely recognized as being unavoidable and prodigious in influencing publics' perceptions and actions. Still, though, affect is largely studied quantitatively and understood as emotion that is instrumental, measurable, predictable, isolatable, and manipulatable. While these lines of affect research have demonstrative theoretical and practical value for crisis and public relations fields, I propose that there remains a need and ample opportunity to explore alternative approaches to conceptualizing affect in publics and organizations, such as those emerging from the feminist affective turn taking place across many disciplines (including communication, which I will cover in more detail later in this

chapter). Another area of public relations scholarship adopts different treatments of affect: postmodern and “post-rational” theories of public relations as activism.

Affect in activism. Postmodernists have long critiqued rational biases in Western academe (Holtzhausen, 2012). Emphasis on rationality in public relations theory has not been lost on public relations scholars who study activism, especially through a postmodern lens (e.g., Holtzhausen, 2012). Albeit activism in public relations is still largely theorized under traditional modernist and rationalist rubrics, this section will highlight some exceptions, offering examples of public relations scholarship that, in rejecting normative rationalistic discourses, align with certain key tenets of feminist affect theory.

Ganesh and Zoller (2012) wrote about dialogue and activism, with a critical eye toward the rationalistic bent of dialogue in public relations theory. They argued that dialogue has been understood as collaborative, co-optive, or agonistic, depending on “assumptions about conflict, power, and the role of difference” (p. 67). Ganesh and Zoller favored an *agonistic* approach to dialogue as more realistic and reflective of contemporary activism that include “new forms of collective democratic communication practices that emphasize *postrational* notions of embodiment and emotion” (p. 79, emphasis added). Agonism was theorized prominently by feminist political philosopher Chantalle Mouffe, who argued that public discourse is more passionate (i.e., emotional) than rational, driven by conflict over consensus (Mouffe, 1999, 2014). Mouffe (2014) defined “passions,” in her usage of the word, as distinct from individual emotions, but rather more essentially political and collective: “by ‘passions’ I designate a certain type of common affects, those that are mobilized in the political domain in the formation of

the *we/they* forms of identification” (p. 153). As I will explain later in this chapter, the public and political nature of affect that bonds individuals together as social collectives (communities, publics) and moves them to act (gives agency) is also theorized in Public Feelings projects in affect theory.

Similarly, Boyd and VanSlette (2009), in their chapter about postmodern *outlaw discourse* as activism, offered further examples of how activist public relations can be (often at its most effective) provocative, contentious, sensationalistic, and jarring (the most extreme example being terrorism). They explained: “Outlaw discourse employs a logic that, when translated into the dominant system, is deemed illogical, immoral, or illegal,” and outlaw discourse practitioners “have positioned themselves outside of what is viewed as normal or rational” (p. 333). In short, “The term ‘outlaw’ has been used in the literature to describe either a group or an individual that breaks the rules of the dominant system and refuses to act in accordance with the normative assumptions of his or her system” (p. 333). These authors defined outlaw activism as a type of public relations that “requires attention” (p. 332), significantly challenging the boundaries set by traditional definitions of public relations as consensus- and relationship-driven. In their discussion of outlaw discourse as public relations, Boyd and VanSlette made several mentions of the alternative and seemingly “abnormal” and/or “irrational” logics of outlaw discourse that do not fit into dominant normative (rationalistic) discourses, suggesting that outlaw discourse might make more sense under affective logics.

Agonism and outlaw activism are examples of how conceptualizations of public relations are moving away from rationalistic and normative definitions that center on mutual benefit, rationality, and consensus. Agonism and outlaw discourse also represent

postmodern impulses in public relations. Similarly situated in activism research, much work by Holtzhausen (2012) has principally and substantially advanced postmodern theory in public relations. Holtzhausen critiqued the rationalistic bias in modern public relations theory, which constructs normative public relations in opposition to the affective. She argued for a postmodern approach to public relations research that views affect and emotions as legitimate in both practitioners and publics.

In sum, crisis and activism are two trajectories of public relations research that has incorporated affect as legitimate and important to recognize in both theory and practice. Yet, there limitations remain as to how affect is imagined in public relations: Crisis research about affect largely treats affect reductively and quantitatively, and, while postmodern and postrational discourses treat affect more complexly and holistically than most other areas of public relations scholarship, examples of that line of research are rare and located in the margins of the field. In this and later chapters, I will argue that feminist affect theory as a theoretical framework for public relations can very aptly address some of these limitations. First, though, a review of feminist affect theory and its own trajectories, histories, definitions, major thinkers (and actors), and impact factors is needed—and provided next.

Affect Theory

There is no single, generalizable theory of affect: not yet, and (thankfully) there never will be. If anything, it is more tempting to imagine that there can only ever be infinitely multiple iterations of affect and theories of affect: theories as diverse and singularly delineated as their own highly particular encounter with bodies, affects, worlds. (Seigworth & Gregg, p. 4)

As reflected in the above excerpt, considerable equivocality and deliberation surrounds deployments of categories such as “affect theory” and “the affective turn,” and it has been well established that there is no singular “theory” or “turn” of affect—rather the opposite in fact. According to Seigworth and Gregg (2010), affect theory is both new—the current or “new affective turn” invigorated affect theory most recently in the 1990s—and centuries old: Seventeenth-century philosopher Baruch Spinoza is considered a pioneer in affect theory. The recent affective turn has been called “new” by some scholars (e.g., Frank & Wilson, 2012) not to imply that scholarly attention on affect and emotionality is new, but to refer to the affective turns across disciplines spurred by two seminal essays published in 1995 by Brian Massumi (1995) and Sedgwick and Frank (1995) (see Seigworth & Gregg, 2010). Further, affect theory spans and blurs disciplinary boundaries effectively beyond distinction (Seigworth & Gregg, 2010). And like any good broad-sweeping umbrella theory that encompasses such numerous and heterogeneous scholars and research agendas, affect theory has seemingly countless, often confusing and conflicting definitions and claims. As such, it is neither feasible nor useful to attempt to excavate, trace, or define the many genealogies and current trajectories of “affect theory” here. (For a more robust discussion of affect theory—an encounter that Seigworth and Gregg cautioned might feel like “a momentary (sometimes more permanent) methodological and conceptual free fall” (p. 4)—see their introduction to their edited volume of essays in *The Affect Theory Reader*.)

Still, before continuing my discussion of “affect theory,” it is worthwhile to make clear how I define it. I begin the following section by explaining more precisely what I mean in my own deployments of “feminist affect theory” and the “affective turn,” which,

in addition to feminist roots, are also grounded in critical cultural studies, postmodernism and poststructuralism, and queer theory. The discussion will then turn to some specific concepts derived from feminist affect theory that I argue are particularly relevant to both public relations and the vaccine debate. I also provide examples of how feminist affect theory has already been embraced and applied in communication research, such as in media studies and organizational communication theory, to further demonstrate its relevance to the discipline in general and public relations in particular.

Trajectories of affect theory. Seigworth and Gregg (2010) traced affect theory along two broad paths: (a) “Silvan Tomkins’s psychobiology of differential affects” and (b) “Gilles Deleuze’s Spinozist ethology of bodily capacities” (p. 5). It is impossible to fully review either trajectory in this paper. In short, Tomkins’ (1962) “inside-out” theory of affect locates it as a function or product of the body, which originates inside the body and pushes people to *do* and *feel*; Deleuze’s (1988) “outside-in” theory understands affect as existing everywhere, in all matter, even in the molecules that make up people’s bodies. *For Tomkins, affect exists in us, and for Deleuze/Spinoza, we exist in affect.*

Defining affect theory. Emerging in the mid-1990s, the “new” affective turn spans vast disciplines, including sociology, anthropology, psychology, neurology, geography, and architecture, to name a few (Clough, 2008; Gorton, 2009; Seigworth & Gregg, 2010). The specific trajectory of affect theory in which my present project is grounded, though, can be traced to feminist roots, as well as queer theory and postmodern and poststructural philosophies. While these projects—feminism, queer theory, and postmodernism⁷—often align with and build on one another, they also diverge and are

⁷ For expedience, I use the term postmodernism to also refer to poststructuralism at times when doing so does not fundamentally change the meaning of the point being made.

even internally divided in complex and countless ways. While this is not the place to delve into the nuances of those many junctions and departures, at the risk (or rather, with the awareness) of oversimplifying, I will briefly map how queer and postmodern impulses work—together and apart—to inform the feminist affective turn in which I locate my own research.

First, though, I want to note here (and I will elaborate later) that queer theory and postmodernism claim their own established and influential trajectories in affect theory apart from feminism. In other words, I do *not* mean to imply that queer and postmodern studies only work in the service of *feminist* affect theory—rather, because I adopt a specifically feminist perspective, and because queer theory and postmodernism are so intricately interrelated to feminism and affect, I use the feminist affective turn as a point of departure to engage and interrogate the implications of postmodern and queer affect theories.

Feminism, postmodernism, and queer theory. Feminist and queer theory, and feminism and postmodernism, have had similarly contentious yet arguably symbiotic relationships; however, there are meaningful differences in the timing and politics of each movement (Fraser & Nicholson, 1990; Watson, 2005). While postmodernism and feminism both grew in large part in the Western world over the 20th century, their politics and scholarship did not converge until relatively recently—and many feminists still hold that the two are inherently irreconcilable in the feminist is essentially political and postmodernism is not (Alcoff, 1995). Fraser and Nicholson (1990), for example, explained that, while both feminism and postmodernism “have sought to develop new paradigms of social criticism which do not rely on traditional philosophical

underpinnings” (p. 26), many feminist scholars are unforgiving of postmodernism’s resistance to universal categories and unitary historical narratives, including gender, patriarchy, and historical oppression of women—all hallmarks, after all, of (especially second-wave liberal and radical) feminist theory and praxis. This line of postmodern logic invalidates subjecthood and lived experience as stable and authentic categories for analysis, which is problematic for feminists for which lived experiences of women (subjects) are the grounds for so much theory and politics (Butler, 1992; Scott, 1992).

Many feminists have also decried postmodernism for being critical (e.g., deconstructive) without any infusion of politics or social criticism. According to Mumby (1996), feminist theorists have critiqued postmodernism for focusing too narrowly on philosophical and epistemological concerns while ignoring wider and more logistical political and social implications. In other words, while feminism has classically focused on activism and “real-world” social justice and change, postmodernism is preoccupied with more abstract philosophical (especially linguistic, discursive) concepts such as power but detached from social, cultural, and material contexts. And, in doing so, to reiterate Fraser and Nicholson’s (1990) point again, postmodernism has ignored the practical significance and implications of socially constructed and historically enduring categories and ideologies that have served as bases of discrimination, marginalization, and oppression (e.g., class, gender, race, sex, sexuality, and other “Others”).

At the same time, though, feminism is not without its critics—even within its own ranks. Notably, first- and second-wave feminists have routinely been accused of embracing harmful and regressive essentialist rubrics that naturalize heteronormativity and Whiteness and assume the intactness of women-as-a-category because of an essential

and unifying shared experience (the oppression that comes from being a woman), which many (especially non-Western, non-white, and queer) feminists and other critics have argued delegitimizes and ignores important distinctions in the kinds of domination and oppression (and privilege) experienced by, for example, women of color and non-straight women and men (not to assume a dual-gender system). Additionally, infighting is persistent about topics such as intellectual versus political commitments of feminism, as well as how sex (acts) should be theorized and registered culturally and politically. For example, a typical question of contention between queer and feminist theorists asks if all sex workers are victims, or if there is room for agency and power via resistance in sex work. (Showden, 2012).

Despite (and because of) these points of contention, many feminists in the 1990s began to imagine, if cautiously, a postmodern brand of feminism that is pluralistic and strategic and embraces difference (Alcoff, 1995, 1997; Mumby, 1996). Nicholson and Fraser (1990) proposed a postmodern feminism that

would be pragmatic and fallibilistic. It would tailor its methods and categories to the specific task at hand, using multiple categories when appropriate and forswearing the metaphysical comfort of a single feminist method or feminist epistemology. In short, this theory would look more like a tapestry composed of threads of many different hues than one woven in a single color. (p. 35)

Additionally, Alcoff (1997) addressed many feminists' apprehensions about the apolitical nature of postmodernism, countering that postmodernism opens up discursive spaces and points of departure for debate and critique. She described postmodernism in the service of feminism, to be used strategically by feminists as a "disposable toolkit" (p. 9) with which

to address particular issues—*not* postmodernism as a universally fitting philosophy for all feminist theoretical and political aims. In other words, Alcoff conceptualized postmodernism as a kind of theoretical secret weapon to be appropriated, used strategically and opportunistically by feminists when it becomes advantageous to do so, but which can be easily discarded when its utility runs out.

A less tenuous partner for postmodernism, queer theory in part grew out of both feminism and postmodernism. And much like feminism and postmodernism—and affect theory—queer theory is not a singular “theory” or even a definable field; rather, it is an interdisciplinary array of methods of interrogating how sexual identities and categories such as “gay” and “heterosexual” (and man and woman, male and female) have come to be seen as “natural,” and then deconstructing them (e.g., Butler, 1993). As such, queer theory finds more of an ally in postmodernism (though many queer scholars prefer the term poststructuralism, such as Judith Butler) and methods such as deconstruction and discourse analysis than with more traditional dominant feminist strategies that operate to essentialize identity (e.g., sex and gender) for political ends grounded in equality. For instance, Michel Foucault’s work on sexuality, discourse, power, and resistance have been a major guiding light in queer studies. Many queer theory scholars have rejected dominant feminism’s projects as fundamentally heteronormative, normalizing and naturalizing hegemonic (dual) notions of sex and gender (i.e., man and woman, male and female) (Watson, 2005).

And similar to their postmodernism critiques, many feminist scholars and activists have accused queer theory of being apolitical, or at least politically ineffective, failing to operate on practical levels that register “real” social change (Watson, 2005). However,

around the same time as the postmodern discussion was emerging in feminism, many influential feminist theorists began to traverse into and align with queer theory, such as poststructural feminist Judith Butler (1993), Eileen de Laetis (1991)—who is said to have coined or popularized the term “queer” as it is used in queer studies—and Eve Kosofsky Sedgwick (1990), who also happens to be a prominent figure in the new affective turn, to which I will now turn the discussion.

Feminist, queer, postmodern affect theory. While the focus on emotion and affect in feminist theory is not new, a “new” feminist affective turn has begun to increasingly incorporate queer and postmodern sensibilities discussed above. Predictably, some feminists have rejected this turn to what they view as the apolitical and de(con)structive influences of postmodern and queer theories. For instance, Tyler (2008) held that affect theory—largely inspired by the feminist mantra “the personal is political”—is a feminist project with a long history that is often overshadowed or displaced by the “new affective turn,” which tends to be post-political, post-ideological, and resists identity politics or validating markers such as gender and race as categories for analysis (as an example, consider Brian Massumi’s, 2002, discussed below). The impulse of the new affective turn that attempts to de-politicize affect—claims affect transcends politics, culture, and ideology—is especially problematic for feminisms that are fundamentally political and privilege embodied experience and markers such as gender and race as sites of inquiry and agency (Tyler, 2008).

Following a feminist logic, affect is indeed political and embodied, but some postmodern-leaning affect theorists explicitly work to liberate ideations of affect as bodily and political, and to emancipate affect from the “oppressive” regimes of study that

are too caught up in, for example, identity politics and categories such as “Gender, race, and [sexual] orientation” (Massumi, 2002, p. xxi). Massumi (2002), for example, argued that focusing on categories like sex and gender and race as sites for analysis or critique only serve to discursively affirm and reify those normative social identities. Postmodern-influenced affect theorists such as Massumi are perhaps most often associated with Gilles Deleuze’s (1988) work on affect and bodies. Deleuzian affect theory, which is first Spinozan (i.e., based on Baruch Spinoza’s definition of affect and bodies), “locates affect in the midst of things and relations (in immanence) and, then, in the complex assemblages that come to compose bodies and worlds simultaneously” (Seigworth & Gregg, 2010). In other words, Deleuzian/Spinozan affect theory is “a body of scholarship inspired by Deleuzian theories of affect as force, intensity, or the capacity to move and be moved” (Cvetkovich, 2012, p. 4)—which is also commonly traversed by queer theorists (e.g., Berlant, 2011; Puar, 2007).

The Deleuzian trajectory and similar avenues of the affective turn⁸ have attracted many queer scholars through their postmodern sensibilities. Postmodern affect theory draws from not only Deleuze, but also deploys very technical and often surprising theoretical lenses that span disciplines—from neuroscience to cybernetics to nuclear physics—and include, for example, chaos and complexity theories (e.g., Massumi, 1995, 2002, 2010, 2015; Protevi, 2009; Puar, 2007). However, many queer and feminist affect theory scholars do not ascribe to the postmodern and Deleuzian traditions, as I will discuss below (e.g., Cvetkovich, 2012).

⁸ For fuller description of affect theories, trajectories, projects, and scholars, see Seigworth & Gregg (2010).

Many affect scholars in feminist and queer theory refocus attention on the political and agentic properties—the potential of affect to both build and suspend agency—and the public nature of affect in individuals and communities (e.g., Ahmed, 2010; Cvetkovich, 2012; Ngai, 2007). Feminist and queer approaches also resist pathologizing “bad” affects or “ugly feelings” (e.g., shame, depression, unhappiness) as problems to be fixed, instead envisioning them as symptoms of bigger problems germinated in neoliberal society and consumer culture (e.g., Ahmed, 2010; Berlant, 2011; Clough, 2008; Cvetkovich, 2012; Ngai, 2007). As Cvetkovich (2012) suggested, “feeling bad might, in fact, be the ground for transformation” (p. 3).

Defining affect: Spinoza, Deleuze, and Massumi. As explained earlier, in the Deleuzian trajectory, affect is *immanent*—it does not originate from human subjectivity, but it already exists everywhere, in everything. We live in an affective world, and we experience the movement of affects through the movement and assemblages of atoms and matter. Affect is described by Massumi (1995) as *intensity*, “buzzing,” existing through, within, and between matter. Massumi’s philosophy of affect (which draws on Deleuze and Spinoza) is admittedly abstruse, almost impenetrable, but it is seminal in the postmodern (and often queer) new affective turn. For Massumi, affect is bigger than—exists before and after, and has potential beyond—emotion: *Emotion* is the qualification, or naming, of affect, as well as its containment. Further, Massumi described emotion as the “*capture*” of affect, arguing that “Affect is most often used loosely as a synonym for emotion. But...emotion and affect—if affect is intensity—follow different logics and pertain to different orders” (p. 88). He continued, “An emotion is the subjective content, the socio-linguistic fixing of the quality of an experience which is from that point onward

defined as personal. Emotion is qualified intensity...It is intensity owned and recognized” (p. 88). Massumi argued that,

It is crucial to theorize the difference between affect and emotion. If some have the impression that it (theorizing affect as different from emotion) has waned, it is because affect is unqualified. As such, it is not ownable or recognizable, and is thus resistant to critique. (p. 88)

Indeed, Massumi’s stance on affect and emotion make it (affect) admittedly difficult to theorize or even talk about.

Feelings are still more conceptually distinct from affect and emotion according to some affect theorists, though the distinction is not so cut-and-dry. According to Bertelsen and Murphie (2010), “Emotion involves physical states (heat and increased heartbeat in anger, trembling in terror). Feelings are complex strings of ideas traversing emotions as they remap them” (p. 140). Thus, feelings come from “refrains,” or repetitions of emotional states that create more overarching patterns of feelings. Bertelsen and Murphie explained that emotions and feelings make up two aspects of affect, and the third aspect lies between the former two. They wrote that the third aspect of affect is “the Spinozan ‘power to affect and be affected’ ‘by which the power of acting of the body itself is increased, diminished, helped, or hindered, together with the ideas of these affections”” (p. 140). This “power to affect and be affected” is *agency*, the property of affect that enables or disables a person, group, or society to move or change. *Affect is a culmination of emotions, feelings, and agency.*

Less dogmatic and technical but similarly inspired definitions of affect, though, have been offered by other affect theorists, which will prove helpful for my purpose of

theorizing affect. As depicted above, affect theory and the affective turn—as well as affect—are notoriously difficult or even (by definition) impossible to define (Massumi, 1995; Ngai, 2007), and the definitions available, especially on the postmodern end, tend to be ever more abstruse. However, some feminist scholars have proposed comparatively digestible and heuristic understandings (if not concrete definitions) of the terms and concepts. For one, Ngai (2007) offered a helpful set of relative definitions and distinctions between emotions and affect:

My assumption is that affects are *less* formed and structured than emotions, but not lacking form or structure altogether; *less* “sociolinguistically fixed,” but by no means code-free or meaningless; *less* “organized in response to our interpretations of situations,” but by no means entirely devoid of organization of diagnostic powers. (p. 27)

Ngai’s definition of affect as “*less* sociolinguistically fixed” but still necessarily labeled and bound by language is reminiscent of but gladly more workable and less rigid than Massumi’s, who asserts that affect is infinite and unnamed. In other words, Ngai defines affect as something more graspable than an inventory of infinite shimmers, but still less concrete than (though not wholly separable from) individual emotion.

To more concretely illustrate how affect theorists included in this section thus far have generally conceptualized the differences between affect and emotion: Anger is something generally identifiable (at least it would appear so from the crisis and risk literature I review above and below), and often we can identify a source of it; thus, anger is a convenient emotion to study in, say, crisis and risk research. Melancholia, on the other hand, is usually more difficult to grasp or name, and even naming it does not

always capture the extent of what is being felt. Déjà vu is another example of a mood or state that often escapes our precise identification or description. Following Ngai's (2007) definitions, Melancholia and déjà vu are more accurate examples of less-structured affect while anger represents a more fixed emotion.

However, some feminist affect theorists have adopted less formal, technical, and distinct definitions of affect, feelings, and emotions. Namely, Cvetkovich (2012), an influential queer and feminist scholar and activist in the new affective turn, in her work on depression as a public feeling used the words "affect" and "feelings" generically (p. 4) rather than meticulously attempting to delineate between Deleuzian constructs of affect, feelings, and emotions. For Cvetkovich, the categories of "affect" and "feelings" included not only feelings and emotions, but also impulses, desires, and moods that are routinely portrayed in contrast to rationality and reason and that stand in for the "undifferentiated 'stuff' of feeling; spanning the distinctions between emotion and affect central to some theories; acknowledging the somatic or sensory nature of feelings as experiences that aren't just cognitive concepts or constructions" (p. 4). Cvetkovich explained her choice of words:

I favor *feeling* in part because it is intentionally imprecise, retaining the ambiguity between feelings as embodied sensations and feelings as psychic or cognitive experiences. It also has a vernacular quality that lends itself to exploring feelings as something we come to know through experience and popular usage and that indicates, perhaps only intuitively but nonetheless significantly, a conception of mind and body as integrated. (p. 4)

This (non-)definition of affects, feelings, and emotions is more accessible and less tedious than most in the new affective turn, and it very precisely mirrors my own conceptualization of affects, feelings, and emotions in this project.

Affect has also been conceptualized in the new affective turn as a force or shared experience that connects or bonds people into publics or communities (Cvetkovich, 2012; Massumi, 2002). Massumi (2002) called affect the “invisible glue that holds the world together” (p. 217). This makes affect particularly implicated in social relationships, and, as such, relevant to the relational function of public relations. The following section will highlight some key intersections I see between public relations and affect theories.

An affective turn: Implications for public relations. Seigworth and Gregg (2010) described the interventions affect theory has staged in various disciplines: Affect theory “makes easy compartmentalisms give way to thresholds and tensions, blends and blurs” (p. 4). It is undeniable that much affect theory literature can be impossibly dense and complicated; however, many authors have adapted the principles of affect theory to their own purposes. In other words, tedious attention to assemblages of subatomic particles—and how they are contained in and expressed through human physiology and biology—is not compulsory in affect theory. The following are some examples of affect theory’s practical and theoretical potential for public relations theory.

Affect theory and Public Feelings: Community and agency. One conceptual and practical area of feminist and queer inspired affect theory is called *Public Feelings*, which places emphasis on the community-forming function of affect. Cvetkovich (2012) described the academic rubric of what she called Public Feelings projects: “In finding public forums for everyday feelings, including negative feelings that can seem so

debilitating, so far from hopefulness about the future of activism, the aim is to generate new ways of thinking about agency” (p. 2). Cvetkovich listed major goals of Public Feelings: “to depathologize negative feelings so that they can be seen as a possible resource for political action rather than as its antithesis” and “to generate the affective foundation of hope that is necessary for political action...that is grounded in the here and now, in the recognition of the possibilities and power that we have at our immediate disposal” (p. 2). Affect theory and Public Feelings projects legitimize individuals’ feelings and explore how social movements and activism can and so often do spring from individual and collective affect. For example, Cvetkovich wrote about depression: “This is not...to suggest that depression is thereby converted into a positive experience; it retains its associations with inertia and despair, if not apathy and indifference, but these feelings, moods, and sensibilities become sites of publicity and community formation” (p. 2). Here, Cvetkovich highlights the community-forming properties of affect and how affective communities can be both therapeutic and political.

The concept of community has also arisen in public relations literature and is similar to that of public. Hallahan (2004) defined community as, “any group that shares common interests developed through common experience” (p. 243). In his 49-page essay that argued for community as a theoretical foundation for public relations (as an alternative to publics), Hallahan mentioned emotion only once, in a reference to John Dewey (who wrote extensively about emotion): Hallahan noted that Dewey “emphasized that communal life was moral, which he defined as being sustained emotionally, intellectually, and consciously” (p. 237). Valentini, Kruckeberg, and Starck (2012), citing marketing literature, conceptually likened communities to tribes, which form for several

reasons, one of which is “emotion” or “high levels of affectivity” (p. 876). Affect was not explicitly mentioned again. Kruckeberg, Starck, and Vujnovic (2006) called for consumer community-building as a role for public relations practitioners. Consumer communities are defined as “a group of enthusiasts who believe in the superiority of a product or service whose members individually and as a group publicly identify with this product or service” (p. 492).

To argue for the cultivation of (consumer) communities as a role for public relations draws one connection to affect theory, where affect theory in general, and Public Feelings specifically, can contribute to our understandings of not only the productive capacity of communities, but also the destructive power of neoliberal, corporate society (and public relations) on individual and group agency—and meanwhile blurring the lines between constructive/destructive and positive/negative benefits/outcomes. More generally, for public relations scholars who wish to decenter or replace the concept of public with community, affect theory can enhance understandings of community by bringing into focus the affective dimension of public relationships that more rationalistic theories of publics like STP seem to miss.

In similar feminist affect theory fashion, Ngai (2007) defined ugly feelings as “dysphoric feelings” and “negative emotions,” arguing that ugly feelings have often been dismissed in society and scholarship as irrelevant and immaterial. According to Ngai, discarding these ugly feelings as neither here nor there (in the sense that they are both undesirable to experience and unnecessary to research), in turn, creates impasses and states of suspended agency in people who feel them.

Examples abound in public relations literature of scholars either dismissing or trying to “fix” ugly feelings, rather than pausing to ponder them as either symptoms of more serious problems, or as possible sources of agency or inspiration. For instance, in their discussion of consumer communities, Kruckeberg et al. (2006) concluded that practitioners should work to “encourage the positive benefits of such communities while minimizing and hopefully eliminating the potential negative outcomes” (p. 496). A major tension between affect theory and public relations theory becomes obvious here: While affect theorists appreciate the agency that can come with ugly feelings (and therefore do not generally recommend suppressing them), public relations often sees itself as an emollient for the same bad feelings. Exceptions to this statement, of course, exist in public relations literature (e.g., Turner, 2007; Yeomans, 2007, 2014). Additionally, crisis theorists have conceptualized ugly feelings as obstacles to overcome rather than potentially productive (e.g., Kim & Cameron, 2011). In short, generally speaking, in public relations, “ugly” feelings such as dissatisfaction, anger, and sadness are too often qualified or quantified as “potential negative outcomes” that need to be minimized or fixed.

Viewed through an affective lens, on the other hand, ugly feelings as potential negative outcomes should not be proximately dismissed or soothed. Feminist affect scholars Ahmed (2010) and Cvetkovich (2012), for example, have attributed feelings of unhappiness and depression (respectively) to neoliberal consumer society, or “the good life,” that breeds expectations of reaching certain levels of material and social wealth that are hardly attainable for most people—hence persistent feelings of failure and loss. In

these cases, argue affect theorists, rather than fixing ugly feelings, we should try to fix the bigger social problems causing them.

Further, affect theory looks beyond just the causes of ugly feelings to also consider how they can be *agentic*. In other words, affect theorists ask how ugly feelings can give agency to individuals and groups (e.g., Cvetkovich, 2012; Ngai, 2007). In public relations theory, specifically in crisis literature, the agency-giving function of affect has likewise been recognized; however, agency-from-affect can understandably become problematic for organizations attempting to, for example, communicate with an angry public. Thus, crisis literature from managerial, organizational perspectives most often studies affect instrumentally to attempt to predict publics' behavior. Jin (2009), for example, found that "strategic publics can be segmented and identified not only by issues but also by their emotional engagement" (p. 846).

Taking a slightly different approach, though, Turner (2007) wrote about affect and risk using the Anger Activism Model (AAM): Turner, like crisis scholars, recognized the agentic potential of affect (specifically anger), but she understood agency in publics as an asset for publics rather than a liability for organizations. Turner's research is a rare example of how ugly feelings can be conceptualized as *productive* in public relations research, a line of inquiry that affect theory is uniquely positioned to further contribute to, especially in helping theorists move beyond reductive understandings of emotion to more holistic and complex treatments of affect.

Affective logics of risk? The future of risk (as threat). Another area of public relations that affect theory touches on is the concept of risk, especially as conceptualized through the lenses of threat, fear, and safety—especially in environments of great

ambiguity and uncertainty about the potential of future threats or risks. Literature in public relations about strategically managing risk communication is primarily concerned with the rhetorical/dialogic or functional/strategic aspects of communicating about risks on behalf of one or more organizations to publics. Risk communication literature, like crisis, has seen an increase in attention to affect (e.g., Betsch et al., 2010; Blume, 2006; Brown, 2011; Finucane et al., 2000; Fischhoff et al., 2003, 2005; Kata, 2010, 2012; Slovic & Peters, 2006; Spier, 2002), though there has not been much variability in how affect is conceptualized as predominantly instrumental, isolatable, and measurable. Massumi's (2010) theory of threat centers affect in public processes of risk perception and decision-making and significantly complicates how we understand affect.

From an affect theory perspective, Massumi (2010) has written about threat in a context away from the health and risk communication arenas where discussions of risk perceptions of vaccines typically take place. Massumi did not write about vaccines or even explicitly about risk, but rather focused on *threat* as a perception of risk that is affective and has great hold on publics' opinions and behaviors. He discussed the temporal and potential natures, specifically the "*futurity*," of threat and the uncertainty that it brings:

Threat is from the future. It is what might come next. Its eventual location and ultimate extent are undefined... We can never be done with it. Even if clear and present danger materializes in the present it is still not over... Threat is not real in spite of its nonexistence. It is superlatively real, because of it... The future of threat is forever. (p. 53)

For Massumi, the unlimited potential of threat, or risk, is a result of it being something always in the future—there will never be a certainty with which we can cap risk. In public relations language, if a “crisis is risk manifested” (Heath & Palenchar, 2009, p. 277), then *risk is crisis unmanifested*; in affect theory language, *threat is “clear and present danger” that has not “materialized”* (and indeed, the danger may not ever materialize, meaning that threat can exist without any actual danger but that in the minds and affective registers of people who feel threatened). Extending the same logic to risk, risk can always remain unmanifested, and there will never be an event or a scientific study that effectively assures us that the risk never will or never would have manifested as a crisis worse than anything that could or would realistically happen. Risk, as affective threat, has *unlimited potential* to be risky or threatening, meaning it is not relegated to what can or does happen in objective “reality”: Risk as affective threat is limitless (and it is difficult to be probabilistic about something which has no limits).

Often risk as affective threat results in a “*preemptive logic*” that can quickly lead to several things: A public demands preemptive action, an organization takes preemptive action, or a regulatory body (e.g., the government) uses preemptive action to enact policy or audits to prevent a crisis from materializing from risk (Massumi, 2010). To illustrate this principle, Massumi (2010) used President George W. Bush’s post-9/11 invasion of Iraq to, ostensibly to locate weapons of mass destruction (WMD)—and the seeming absurdity of Bush’s retroactive preemptive logic to justify the invasion. After Bush admitted that WMD were in fact not present in Iraq, never were, he still used them to legitimize his actions, as Massumi recounted:

He (Bush) goes on to argue that the lack of factual basis for the invasion does not mean that he made the wrong decision. “Although we have not found stockpiles of weapons, I believe we were right to go into Iraq. America is safer today because we did. We removed a declared enemy of America, who had the capacity of producing weapons of mass destruction, and could have passed that capability to terrorists bent on acquiring them”... The invasion was right because *in the past there was a future threat*. You cannot erase a “fact” like that... The threat *will have been real for all eternity*. (p. 53)

In other words, “Once a nonexistent reality, always a nonexistent reality” (p. 54). Further, not only did Saddam Hussein (then-president of Iraq) not possess WMD, Hussein did not even have the *capacity* to possess them, making the preemptive logic doubly removed from fact (a “double conditional”):

Present threat is logically recessive, in a step-by-step regress from the certainty of actual fact. The actual fact would have been: Saddam Hussein was WMD. The first step back from that is: he had the capacity to have WMD. The next step is: he didn’t have the capacity, but he still would have if he could have. The recessive assertion that he “would have” is based on an assumption about character and intent that cannot be empirically grounded with any certainty. (Massumi, 2010, p. 55)

By implication, “*would have/could have*” logic also cannot be empirically measured.

Thus, the scientific, rationalistic, and empirical assessment of how risk and crisis are felt will always be missing something, which is what Massumi (1995) argued was the

problem with trying to qualify (much less quantify) affect as emotion that is empirically experienced—something will always be “missing”: the *excess* of affect.

Following affect theory, scholars of risk communication (and, relatedly, of public health communication) should not only re-center emotion but also re-conceptualize it as affect, complicating how we imagine (or write off) emotion, affect, agency, and feelings. Further, theories of risk and health communication often emphasize being open, *factual*, and *rational* in inform and educate publics. Massumi (2010) demonstrated the flaws in typical factual, rational logic once again:

Problem: How can preemptive politics maintain its political legitimacy given that it grounds itself in the actual ungroundedness of affective fact? Would not pointing out the actual facts be enough to make it crumble?

Observation: Bush won his reelection. (p. 55)

Massumi argued that a rational logic is often not what drives individual or groups of humans. *Preemptive*, “*could-have/would-have*,” and other *affective logics*—under-theorized, underestimated, and unnamed in rationalistic public relations research—are often most compelling and resilient among publics.

Massumi (2010) also explicated the very real and present nature of *fear* in context of threat or risk: “Fear is the anticipatory reality in the present of a threatening future. It is the felt reality of the nonexistent, looming presently as the *affective fact* of the matter” (p. 54, emphasis in original). Affective facts, according to Massumi, are just as real as objective facts, if not more so. An affective fact can be understood as a kind of nonexistent reality, and, as Massumi put it, “Once a nonexistent reality, always a nonexistent reality...A threat that does not materialize is not false. It has all the affective

reality of a past future, truly felt. The future of the threat is not falsified. It is deferred” (p. 54). Returning to the idea of preemptive logic, affective facts do have bearing on objective reality: “The felt reality of threat legitimates preemptive action, once and for all. Any action taken to preempt a threat from emerging into a clear and present danger is legitimated by the affective fact of fear, actual facts aside” (Massumi, 2010, p. 54).

In short, affective facts and affective logics are no less real than actual, objective facts and rational logic—affective facts are “real” because people experience them as such, and affective logics have very “real” consequences. However, even though affective facts and logics exist as “real” in the objective world, they do not operate by the same restrictive rules or standards of proof as normative logics and actual facts—and for this, affective facts and logics can be infinitely “superior political presence and potential” compared to actual facts and rational logic (Massumi, 2010, p. 58).

Affect theory and ethics. Bertelsen and Murphie (2010) introduced Guattari’s theory of an *ethics of affect*. Many scholars have written about the need for more discussion of ethics in public relations theory (Bowen, 2004; Holtzhausen, 2012). Further, ethical frameworks (implicit or explicit) undertaken in public relations literature are often rationalistic and lacking engagement with affect, save sporadic deployments of, for example, ethics of care and some virtue ethics (e.g., Coombs & Holladay, 2013; Seeger & Ulmer, 2001). Still, even those have been critiqued as falling short (Sandin, 2009). Kent and Taylor’s (2002) Other-oriented theory of dialogic public relations implicitly assumes an affective ethic in its call for empathy, but the only explicit mention of emotion in their article is found in an endnote (p. 35). An affective theory of ethics answers a call for a more encompassing and holistic approach to ethics, accounting for

not only qualifiable emotion but also those feelings and intensities that escape us—and hold us together (Massumi’s “invisible glue”) (Bertelsen & Murphie, 2010).

Bertelsen and Murphie (2010) described attempts by the intellectual community to capture affect in society as a science that “only acknowledges affective intensity to then attempt to re-cage it within (new) ‘delimited logics.’ It assumes—it has to—a knowable socius, one that can be reduced to its delimitations” (p. 154). Drawing from postmodernist Guattari (1995, 1996), Bertelsen and Murphie argued that the choice to focus on affect for the purpose of qualifying (naming), quantifying (measuring), predicting, and manipulating affect—rendering it knowable and *certain*—is in fact unethical, because doing so denies parts of human experience and interactions that make us human and constitute our relationships with each other and the world. Rather than rationalistic ethics and research that reduces affect to qualified or quantified emotions, Bertelsen and Murphie suggested an *ethics of responsibility to others* and *acceptance of uncertainty* and *difference*—not only difference and uncertainty in *others*, but also difference and uncertainty within *ourselves*.

Such a tolerance for difference and uncertainty within ourselves may appear as having different opinions about the same subject from one minute to the next, or having actions that conflict with our beliefs. This ethical framework clearly rejects universal codes of ethics or principles found in rationalistic philosophies such as deontology; rather, it aligns more with Holtzhausen’s (2012) postmodern ethics—situational, aesthetic, and motivated by a responsibility to the other. This tolerance for our changing our own minds is what Guattari (1996) called “plural subjectivity” and a “group subject” (Bertelsen & Murphie, 2010, p. 153). While pluralism and group identities are not foreign

to public relations theory, what is perhaps counterintuitive is the idea that group or plural subjectivity happens within *one* person (not a group)—in other words, room for flexibility and reflexivity in our own thoughts and actions.

Affective ethics oblige us to think and act in consideration of others, of difference, and of uncertainty. Practically speaking, this means putting *people* and *context* back into theories of ethics and theory in general. Bertelsen and Murphie (2010) quoted Guattari (1995) in the following summation of the practical, ethical, and theoretical implications of accepting affect:

[T]he impossibility of avoiding the dynamism of affect is crucial. It means that “an affect is...not, as the ‘shrinks’ commonly wish to represent it, a passively endured state. It is...the *site of a work, of a potential praxis*”...The work of capitalism and scientific paradigms—their ongoing attempts to tame affective intensity—will never be completed. The “system” never succeeds in the way that scientist paradigms and “delimited logics” often claim. (p. 154)

This is not a call to abandon science or rationality, but rather to temper them with affect.

Holtzhausen’s (2012) call for reflexivity in accounts of public relations comes closest to aligning with this affect theory of ethics as discussed by Bertelsen and Murphie (2010). Holtzhausen held that, “Reflexivity helps us to monitor the extent to which we harm others” (p. 101). Further, the emphases on objectivity (associated with rationality) in public relations research “makes it very difficult to keep the emotional links to the people affected by our practices. It [objective knowledge] glibly removes the complexity and ambiguity inherent in all situations and desensitizes and dehumanizes us” (p. 101).

An affective turn can foster reflexivity, sensitivity, flexibility, and ethical subjectivity in public relations research.

Embodied affect theory: Body politics and assemblages. A related area of feminist affect theory, which also draws heavily from postmodernism and queer studies (and as such is influenced by Deleuzian affect theory, as well as Foucauldian ideas of the body and biopolitics), is concerned with the relations between bodies, affect, power, and politics (e.g., Anderson, 2012; Baers, 2016; Clough, 2008; Protevi, 2009). The postmodern imaginaries of assemblages intersect here with the feminist commitment to focus on women's bodies as historic sites of struggle over such issues as domestic violence, rape, reproduction, and abortion rights, as well as sites of interrogation of normative sex and gender roles and race—broadly put, body politics.

On the other hand, assemblages, biopower, and biopolitics in the postmodern sense are somewhat more abstract constructs (though still grounded in bodies and material objects) related to complexity and chaos theories of systems (Protevi, 2009; Puar, 2007). In Deleuze and Guattari (1988), an assemblage is an alternative to a fixed modern structure, representing “lines of flight,” and the relations and emergence of “spatial and temporal intensities, coming together, dispersing, reconverging” (Puar, 2007, p. xx). In addition to Deleuze and Guattari, social theorist Manuel DeLanda's (2006) work on assemblages has been influential in postmodern, queer, and feminist affect theories. DeLanda explained the Deleuzian concept of assemblages—a theory that “was meant to apply to a wide variety of wholes constructed from heterogeneous parts” (DeLanda, 2006, p. 3)—in a natural biological context: “Entities ranging from atoms to molecules to biological organisms, species and ecosystems may be usefully treated as

assemblages and therefore as entities that are products of historical processes” (p. 3). Assemblages are emergent rather than reductive (Protevi, 2009, p. 8). Assemblages are dependent on relations between bodies, objects, substances, affects, images, and ideas and how they build on and interact with each other without fixed or predetermined outcomes; assemblages are “processual rather than structural, and may be quite fleeting” and exist at “sub-personal, interactional or macro-social levels” (Fox & Alldred, 2013, p. 772). The concept of assemblages (as in assemblages of bodies and information and bio-matter) in affect theory is often used in conjunction with biopower, biopolitics, and body politics (e.g., Anderson, 2012; Clough, 2008; Protevi, 2009; Puar, 2007).

Biopolitics and biopower, while inherently grounded in bodies, are comparatively abstract concepts than more materially grounded feminist theories of body politics. Biopower and biopolitics are related concepts coined by Foucault (1984) that have to do with control of biological processes and life at individual and population (or mass) levels. One dimension of biopower focuses on the “body imbued with the mechanics of life and serving as the basis of the biological processes: propagation, births and mortality, the level of health, life expectancy and longevity, with all conditions that can cause these to vary” (p. 262). In other words, biopower and biopolitics are ways of controlling populations (mass bodies), such as state use of technologies and institution of norms regarding, for example, hygiene and public health (e.g., vaccination). One historical example of biopower and biopolitics according Foucault was the development of vaccinations in the 18th and 19th centuries that could be given or withheld to either sustain life or effectively ensure death in certain populations.

Affect theory brings together the more abstract and poststructural notions of assemblages with the feminist impulses toward activism and scholarship grounded in the material—real bodies and everyday lived experiences. In short, feminist and postmodern affective trajectories (re-)embody affect in theory by centering *bodies*, such as by thinking about how emotion and affect register on individual bodies and operate in larger populations (or masses of bodies) to give or suspend agency (e.g., via communities of resistance). The above description of Guattarian affective ethics as depicted by Bertleson and Murphie (2010) is a prime example of how re-centering bodies can bring new perspective to, for example, theory or philosophies of ethics. Thus, postmodern and feminist affect theories of embodiment (e.g., body politics and assemblages) resist the Cartesian ideal of mind-body separation and detached de-politicized theory and research, privileging instead the body as a legitimate and primary site of inquiry intimately connected with matters of the mind (e.g., reason, rationality, objectivity).

Summarizing feminist affect theory for public relations. The intent of the foregoing literature review of affect and risk was to provide examples of how affect has been approached by both risk communication scholars and affect theorists. I will return to the idea of risk as affective threat at the end of this chapter when I will discuss the specific implications it has in the context of the vaccine debate. First, though, it is important to understand how affect has already been discussed in literature about risk and health communication, particularly regarding vaccines. Thus, the next section will situate the discussion of affect and risk in the pro- and anti-vaccination rhetoric common in the vaccine debate.

To review, I have argued that affect theory can enhance public relations research in the following areas: (a) Public Feelings as a lens for understanding how affect is experienced in social relationships can contribute to public relations' theories of publics and communities; (b) ugly feelings theorized using affect theory can be reconceptualized as legitimate and productive rather than problematic; (c) reframing risk as threat that always exists in the future and is governed by preemptive and could-have/would-have logics (Massumi, 2010) can enrich risk theorists' understandings of publics' behaviors and perceptions related to risks; (d) public relations theory ethics can be strengthened with an *ethics of affect*, which emphasizes responsibility to the Other and acceptance of uncertainty and difference; and (e) embodied theories of affect and body politics can re-center bodies as sites of inquiry to possibly provide new understandings of publics that conceptualize them as affective and political and not detached stakeholders defined in relation to organizations.

Affect theory can provide more public-centered and contextually-grounded approaches to public relations research, as called for by Leitch and Motion (2010a) and Leitch and Neilson (2001). Affect theory can also deepen strategic, rationalistic theories of publics, such as STP, by acknowledging affective process that happen in publics alongside cognitive ones. In fact, by recognizing and even legitimizing affective logics at the same level that we do rationalistic ones, scholars can develop more nuanced and sophisticated theories of publics and public relations that are grounded in the "day to day." Related to public relations, affect has also found a central place in some risk communication research, as well as the vaccine debate, which the following sections will address.

Risk Communication

Risk and affect are intimately and complexly entwined. Indeed, many scholars have recognized and begun to research the links between risk and affect (e.g., Massumi, 2010; Slovic & Peters, 2006), and, more specifically, between risk, affect, and vaccines (e.g., Adil, 2008; Betsch et al., 2010; Brown, 2011; Blume, 2006; Kata, 2010, 2012). Because my project's primary focus is on the feminist affective turn in the theoretical context of public relations, illustrated using the social context of the vaccine debate—all of which are bound up theoretically and practically with risk and risk communication—many but not all theories and approaches in risk and risk communication research will be relevant for the purposes of this project. Therefore, while I am cognizant of the larger and very rich body of knowledge that has been built up around risk, here I have chosen to strategically focus my literature review on areas that speak to my specific research questions and purpose: (a) critical and cultural approaches to risk; (b) where public relations meets risk communication; (c) the scientific communication of risk; (d) and a brief survey of the intersections of risk, affect, and health communication. This precursory overview of risk research lays the groundwork for a more focused discussion about risk and affect contextualized in the vaccine debate in the section to follow. First, though, I will review how risk has been defined in various communication traditions.

Defining risk. Like many broad theoretical concepts, “risk” does not have a widely agreed upon definition. Heath and O’Hair (2010) described a divide between two dominant views of risk: “One relies heavily on scientific methodologies and probabilistic predictions. The other, characterized as risk society and cultural interpretations” (p. 14). Exemplifying the first category, Proutheau and Heath (2010) defined risks most

fundamentally as “probabilistic occurrences that can have positive or negative outcomes of various magnitudes” (p. 577). Other scholars, though—those who align more with the latter scenario of social and cultural constructions of risk—have not been so concerned with the measurability of risk, emphasizing instead the unstable, uncertain, and affective dimensions of risk. Many scholars have recognized risk as a social, discursive, cultural, and political phenomenon (Aldoory, 2010; Heath & O’Hair, 2010; Leitch & Motion, 2010b; Palenchar & Heath, 2007). Risk has also been associated with affect, or feelings of dread (e.g., Spier, 2002) and anger and fear (e.g., Slovic & Peters, 2006) and understood as a threat to safety (e.g., Brown, 2011; Massumi, 1993, 2010).

Cultural and critical approaches to risk. Aldoory (2010) described the social constructionist paradigm, which encompasses cultural theories of risk, as one that “assumes that risk, the environment, and media are all socially constructed through interaction and discourse, and, therefore, dependent on interpretation by producers and audiences of risk communication” (p. 228). A cultural (social, critical, etc.) approach works to highlight the social construction processes in risk perceptions and resultant decision making, as well as politicizing and contextualizing risk, risk studies, risk communication, and science itself (Heath & O’Hair, 2010).

Cultural risk theorists do not seek to eliminate or completely replace scientific approaches to risk; rather, “culture theory sees any scientific assessment as only a part, and perhaps a smaller than larger part of the analysis. Thus, the role of scientist is politicized” (Heath & O’Hair, 2010, pp. 20-21). In short, the cultural approach re-centers the values, morals, politics, power, affect, and other “non-objective” elements that influence risk perceptions alongside scientific, rational, and probabilistic processes.

Further, cultural theorists of risk problematize the technicality of information about risk that is often produced by the scientific community, arguing that dense and unfamiliar technical language of much risk communication frustrates, confuses, and alienates many members of lay publics (Heath & O’Hair, 2010).

Leitch and Motion (2010b) described risk from a critical discourse theory perspective as an uncertain and perceived danger or harm—as well as having a probabilistic character, which drives attempts to identify, isolate, measure, predict (i.e., *know*, or make *certain*), mitigate, and control risks. Leitch and Motion portrayed risk as a *dialectic* between benefit and harm, good and bad—the kind of risk “into which individuals enter either knowingly or with some degree of choice” (Leitch & Motion, 2010b, p. 561). Leitch and Motion also engaged Beck’s (1992) theory of *risk society*, in which a political economy of risk and vulnerability to risk has replaced a political economy of labor and capital that structured industrial society, power relations “are marked out by the degree of unwanted exposure to the dangerous or lethal by-products of production” (Leitch & Motion, 2010b, p. 561). In other words, distribution of risk has replaced (or at least joined) distribution of wealth as a major marker of class in today’s risk society. This shift to a risk society, according to Beck, additionally explains lapses in trust that publics hold in science and technology.

Demetrious (2006) also wrote about risk society, specifically in regard to changing definitions and roles of public relations and activist publics in practice and scholarship. First, she defined “risk” in risk society as “something hazardous, global in scale, insidious, and perhaps slowly incubating to threaten in different times and places” (p. 105). Next, she defined “society” as “new publics unbound from tradition, articulate

and empowered to define and challenge knowledge and reflexively mobilise to act on issues of risk” (p. 105). As discussed earlier, Demetrious’ conceptualization of publics in the context of risk society aligns with my own definition of publics as political and agentic. Finally, Demetrious elaborated on risk society to explain how it “now intersects dynamically with network society, fuelled by the decentralisation of media power through the Internet and the creation of powerful and articulate online communities” (p. 106). This idea of network society’s intersection with risk society closely reflects the environment of the vaccine debate.

Because of the complex nature and contexts of risk society, Leitch and Motion (2010b) argued, large-scale public information campaigns, typical of traditional risk communication and driven by the (faulty assumption) that providing publics with more (expert) information will ease anxiety and feelings of uncertainty surrounding risk, are both ineffective and unsupported by research and actual experience. Instead of relying on widespread and one-way dissemination of scientific information to publics, which is also dependent on public trust in scientific institutions, Leitch and Motion reasoned that risk communication should be contextualized and positioned within the social discourses that happen around risks and are embedded in particular cultures in risk society. The definition of discourse used by Leitch and Motion was informed by Foucault (1975, 1979) and Fairclough (1992): *Discourse* refers not only to the “portrayal of concepts and objects” in texts and discursive practices (i.e., language), but also to “the way in which that portrayal simultaneously constructs the concepts and objects that it describes” (Leitch & Motion, 2010b, p. 562). Maguire and Ellis (2010) similarly defined discourse (also drawing from Fairclough and Foucault): “A discourse is a structured collection of

texts, along with related practices of their production, distribution and consumption that, in accordance with social constructionist assumptions, bring phenomena into being” (p. 124). Further, discourse constructs rather than reveals reality (Foucault, 1979).

Casiday (2007) also wrote about cultural theory of risk, explaining that risk is socially constructed. Cultural theory of risk, according to Casiday, ties modern (and Western) notions of risk to earlier, “‘primitive’ taboos against ‘pollution’” (p. 1061; see also Douglas, 1966). She used Douglas and Wildavsky’s (1982) *Risk and Culture* as a seminal text in cultural risk theory to elaborate on certain cultural dispositions that at least partially constitute how risk is constructed in particular social contexts: “egalitarianism, or ‘the border’, and individualism, or ‘the center’” (p. 1061). In short, “Risks pose not only a threat to individual well-being, but also to the prevailing social order” (Casiday, 2007, p. 1061). In addition to concepts of individualism and community, risk is also closely connected to ideas of accountability, responsibility, and blame: “Risk is invoked to hold individuals, corporations, and governments accountable for harm when they do not comply with accepted ways of behaving” (Casiday, 2007, p. 1061). Despite these ideas making waves in the risk and communication fields, though, Casiday pointed out that cultural theories of risk have limitations in their lack of empirical support. Further, they do not “account for how different cultural biases emerge within a single society” (p. 1062).

That risk does not happen in a vacuum or laboratory but rather in cultural contexts and social discourses means that risk is often a matter of public debate and discourse. Heath and O’Hair (2010) described the nature of public debate about risk as a struggle between individual and collective rights, and about the future of society. Further, public

debate about risk pits loss against benefits, manifested in such normative questions as: “Whose rights are promoted, protected, and compromised?” and “Who gains and who loses? Is this fair? Are those who can or will lose part of the dialogue?” (Heath & O’Hair, 2010, p. 21). Ultimately, Heath and O’Hair argued, because of the public and political nature of risk and its discourses, choices made about risk (even if by individuals) are inherently collective, products of the community.

Risk perception. Leitch and Motion (2010b) defined *risk perception* as “the perception of potential danger or a hazard of some kind” (p. 561). According to Covey (2011), risk perception can be impacted by factors such as the format used to communicate about a risk: “different interpretations can result from presenting risks as percentages or frequencies, mortality or survival probabilities, and absolute or relative risks” (p. 788). Further, when risks are represented visually and/or emotively, publics perceive and respond to them differently than if risks are communicated purely quantitatively (Betsch et al., 2010).

Relatedly, source credibility is another factor in how people perceive risks. Many scholars have noted a general decline in public trust in, and perceived credibility of, institutions (Blume, 2006; Casiday, 2007; Heath & O’Hair, 2010; Leitch & Motion, 2010b). According to Casiday (2007), as society becomes more industrialized, modern, and complex, trust in others and strangers is more and more necessary, because we must rely on them to perform the tasks that are required to manage daily life and protect us from risk. Further, “When trust between experts and the public is damaged, many players work hard to restore it, but this is widely regarded as a very difficult process” (Casiday, 2007, p. 1062). The increased complexity of society and the difficulty in establishing and

repairing trust has led public trust in the healthcare system to be in what Casiday called a “state of crisis” (p. 1062), a state with clear implications for the vaccine debate, on which I will elaborate in more detail later.

Trust and credibility are closely related to knowledge and expertise, and Heath and O’Hair (2010) explained the links between them: “Either the perception that a source is knowledgeable and expert increases the perception that they are caring and concerned, or the opposite relationship exists as community members are asked to think about industry and government” (p. 11). Further, both industry and government sources are perceived as more credible and trusted if they are also “perceived to be concerned and caring about the interest of those at risk” (p. 11). The same principle applies to other types of organizations and citizen groups (Heath & O’Hair, 2010). Openness and honesty, on the other hand, play a more limited role in determining institutional trust and credibility than do care and concern; thus, when it comes to risk, “facts count, but the character of each source (its care and concern) is likely to give life to facts rather than the other way around” (p. 11). Risk perception is highly interrelated with risk communication as a discipline and practice, because understanding how publics perceive risks is imperative to understanding how to effectively communicate to publics about risks. The next section will focus on the evolution and purposes of risk communication.

Public relations and risk communication. Risk communication is interdisciplinary and happens in many applied contexts such as environmental and health communication (Palenchar & Heath, 2007; for another detailed review of the history of risk communication, see Palenchar, 2010). Aldoory proposed that *risk communication* be defined as “not only the content of risk messages, but also the production and reception

of risk messages, disseminated via public relations programs and community campaigns” (p. 229). This definition accounts for both production and consumption of risk communication and explicates the connection between risk communication and public relations. Public relations scholars Palenchar and Heath (2002) defined risk communication as: “Risk communication addresses scientific evaluations of risk, the perceptions lay people have of them, and actions that are warranted in light of the degree of risk and people’s tolerance of them” (p. 127). They claimed risk communication as a subdiscipline of public relations, and risk communicators were also public relations practitioners (p. 129). Insofar that strategic and effective risk communication hinges on establishing meaningful and dialogue and relationships with publics, Palenchar and Heath (2007) implied, public relations and risk communication share means and ends of making society more fully functioning.

Scientific communication and risk. Palenchar and Heath (2007) briefly stated the evolution of risk communication as a discipline as “beginning with a source-oriented approach and ending with the present approach of communication that is based on shared, social relations” (p. 122). In other words, the central focus in risk communication has shifted from one-way, expert-to-lay public information and education campaigns to more co-creational and co-orientational approaches (see Botan & Hazleton, 2006; Botan & Taylor, 2004) that account for the needs, values, and perceptions of lay publics to attempts to more effectively share scientific knowledge.

Along the lines of aligning scientific and lay perspectives, many risk scholars have noted the inherent difficulty in communicating about risk, not least because of the gaps in how the scientific community conceptualizes and communicates about risk, and

how lay publics perceive risk (e.g., Adil, 2008; Aldoory, 2010; Betsch, 2011; Betsch et al., 2010; Covey, 2011; Heath & O’Hair, 2010; Slovic & Peters, 2006). Risk communication as a discipline was originally established as a way to reconcile and unite expert and lay perspectives of risk: “Once the lay audiences understood the science (scientists’ perspectives) and compared the risk to other acceptable risks, their concern should be put into ‘proper perspective’” (Heath & O’Hair, 2010, p. 9). However, according to Heath and O’Hair (2010), there has been significant resistance to a science-only paradigm of risk and risk communication research. As they wrote about the position taken by the NRC in the 1989 report *Improving Risk Communication*:

Scientific understanding is only one of many cognitive variables leading to behavioral outcomes. It also assumes a rational, objective approach to risk, even though the study acknowledged the emotionality and even irrationality that often plague efforts to communicate about risks. (p. 11)

Their view of emotionality and irrationality as “plagues” on risk communication is not uncommon, but at least acknowledging the pull that affective and non-rational processes have on risk perceptions and behavior is a step away from a narrowly defined scientific paradigm of risk communication.

Casiday (2007) also remarked on the “expert-lay divide” (p. 1061; see also Wynne, 1996, as cited in Casiday, 2007), arguing that “epidemiologists and parents talk with different ‘languages of risk’” (p. 1061). According to Casiday, an epidemiological language of risk is probabilistic, where “‘risk’ refers to the quantifiable probability of an outcome, whereas... ‘Lay’ conceptions of risk take such probabilities into account, but tend to focus more on the personalised, lived experience of harm and uncertainty about

whether one will experience harm” (p. 1061). Casiday distinguished between cultural and social theories of risk and a psychometric theory of risk: Psychometric models of risk seek “to explain why lay public perceptions of risk are often at odds with ‘expert’ calculations of risk probabilities through quantitative measures of people’s perceptions of risks and benefits” (p. 1062). This approach looks at the social and psychological factors that influence subjective assessments of risk that make some risks appear more or less acceptable to particular individuals. Examples of psychometric approaches are Fischhoff, Slovic, and Lichstein’s (2000) study of attitudes about safety and technology and Spier’s (2002) research on dread associated with vaccines and risk. Psychometric theories of risk, according to Casiday, have been critiqued for depoliticizing and decontextualizing risk and decision-making processes and risk-taking behaviors.

Casiday (2007) also closely linked trust and communication: “Social trust is based on shared cultural values and communication using a common ‘language of good and evil’” (p. 1062). She pointed out that communicating shared values *within* social groups is generally understood and less problematic than communicating values *across* cultural group boundaries, something that public relations has concerned itself with (see Sriramesh, 2012). If, as Beck (1992) implied, the “lay public” and the scientific community are two different cultural groups in society, the expert-lay divide and erosion of public trust in institutions such as government and the healthcare system then become issues of cross-cultural communication. As such, risk communication scholars concerned with restoring public trust in such institutions need to locate a shared language that translates effectively across the expert-lay divide. Casiday proposed that narrative is one example of a shared language that is equally understood by lay and expert publics: “Such

rhetorical use of narrative, as opposed to mere reliance on statistics, might address the risk communication problems highlighted by both the cultural theory and risk society models” (p. 1062) that center on issues of public trust in experts and institutions.

Some risk scholars have pointed to the different ways that *uncertainty* is conceptualized by scientists and by lay people as one issue that exacerbates the gap in understanding between the two communities. Ryan (2010) explained that science is generally more comfortable with certain degrees of uncertainty, because uncertainty is inherent in scientific research processes and findings. According to Ryan, the difficulty in reconciling scientists’ and lay publics’ perspectives is “exacerbated by (a) those who exploit uncertainty as they attack science in general, and (b) opponents of a given study who exploit uncertainty simply to undermine that study’s contribution to the public discourse” (p. 248). Ryan named postmodernists, conservative Christian activists, and “professional obfuscators” as critics of science who have taken advantage of uncertainty in scientific findings and wielded it to cast public doubt on the validity and legitimacy of scientific research.

As the following review will show, more and more scholars of risk and health communication have been centering affect in research about risk communication by acknowledging the power affective processes have in how people perceive risks.

Affect, risk, and health communication. Health and risk communication have often been linked in research and practice (Seeger et al., 2010). For example, Seeger et al. (2010) wrote about the communication models used by the CDC to communicate about health risks and crises, including the uncertainty management model, which aims to disseminate information to at-risk groups in order to decrease uncertainty about those

risks, and persuasive approaches to health and risks communication marked by far-reaching advertising campaigns utilizing tactics such as fear appeals and other emotional motivators. In both cases, Seeger et al. (2010) explained, “Emphasis is placed on insuring that health information reflects sound science” (p. 494). On the other hand, some scholars have opted for more culturally informed and critical paradigms of risk communication.

Affect in health communication. Much research has recognized the connection between risk perception and affect, and, by extension, the importance of incorporating affective appeals and strategies into risk communication. For example, Kata (2012) pointed out: “emotional narratives about vaccine side-effects have been found to increase risk perception and uptake intention to a greater extent than statistical information, demonstrating the power of emotional appeals and anecdotes over educational efforts” (p. 3784). Several scholars have written about how particular feelings such as dread, anger, and fear influence how people perceive and respond to risks and communication about risks, while others have written more generally about the role that affect plays in risk perceptions and decision making, as the following review of research will show.

Peters, Lipkus, and Diefenbach (2006) explained that health communication is typically driven by one of two agendas: informed consent or persuasion. Informed consent health communication aims to provide patients with all information (in the form of objective facts) necessary for the patient to make the best possible decision for her/himself, whereas persuasion campaigns attempt to “harness the power of constructed values and preferences” (p. S141). In this dichotomy, informed consent-style campaigns are aligned more with cognitive processes and rationalistic logic and information, while

persuasion campaigns are associated more closely with affective processes and information presentations.

Health behavior theories have traditionally been overwhelmed by models based on cognition rather than affective processes in information processing and decision-making (Peters et al., 2006). Peters et al. (2006) argued that the exception to the cognitive bias in health behavior theories is the self-regulation model, which posits that individuals actively seek to solve problems by making sense of external and internal, or “environmental and somatic stimuli using both cognitive and affective processes” (p. S152). This theory recognizes the interplay between cognitive and affective processes, stipulating that affect in healthcare decisions can lead patients to more or less accurate information processing and choices (Peters et al., 2006). Further, the less one understands the information given, either because of complexity or volume of information or lack of clarity, the more she or he will rely on affective rather than cognitive processes (Peters et al., 2006). Affect may also be more salient in familiar situations: When a person can relate a decision to a prior experience, she or he will likely recall feelings associated with that experience and apply the same feelings to her or his present situation.

In short, Peters et al. (2006) argued that, contrary to some previous assumptions, “the presence of affect does not guarantee good or bad decisions; it does guarantee that communicated information will be processed in ways that are different from when it is not present, “ and as such, “Understanding the latter processes presents important communication challenges” (p. S156). Because both affective and cognitive processes are essential in decision-making, and essentially intertwined, Peters et al. argued that affect,

too (and not only cognition), is part of human reason; in other words, affect can also be rational.

Affect in risk communication. Emotions and affect play a primary role in how people perceive risks day to day, such as what Slovic and Peters (2006) labeled the “strong visceral emotions” of fear and anger, where “fear amplifies risk estimates, and anger attenuates them” (p. 322). Lerner, Gonzalez, Small, and Fischhoff (2003); Fischhoff et al. (2005); Fischhoff et al. (2003); and other combinations of those scholars have studied risk and terrorism and the associated feelings of fear and anger, summarily arguing that fear comes from uncertainty and situational control, while anger derives from certainty and individual control (see also Slovic & Peters, 2006). In risk research in public relations literature, Turner (2007) remarked on the agentic capacity of anger, writing that anger “functions to motivate people to regain or maintain control of a threatening situation” and can “move people to overcome the frustrations that trigger it, fix the situation, restore equity, and prevent a frustration from recurring” (p. 115). Following this, Turner reasoned that, “it is also likely that a message igniting anger can motivate at risk audiences to engage in higher commitment behaviors” (p. 115). The agency-giving power of affect, along with the power of people to harness affect to either intensify or suspend agency, is a significant concept in affect theory (Greyser, 2012).

Slovic and Peters (2006) distinguished between two processes by which people perceive and respond to risks: *Risk feelings* “refers to our instinctive and intuitive reactions to danger,” and *risk analysis* “brings logic, reason, and scientific deliberation to bear on risk assessment and decision making” (p. 322; see also Finucane & Holup, 2006). They specify intuitive *risk feelings* as the “predominant method by which human beings

evaluate risk” (p. 322), arguing that risk assessment is more experiential and heuristic than systematic and analytical. This process, where feelings and benefit play a key part in how people judge risk, is what the authors called the *affect heuristic* (Slovic & Peters, 2006; see also Finucane, Alhakami, Slovic, Johnson, 2000; Finucane & Holup, 2006).

Slovic and Peters (2006) explained several ways that the *affective heuristic* influences risk perception, one being through images. Further delineating affective versus analytical systems of thinking and decision-making, the authors explained that, in the affective or experiential mode of thinking, people “encode reality in images, metaphors, and narratives to which affective feelings have become attached” (p. 323). Thus, devices such as images, narratives, and metaphors have powerful consequences for how people perceive and assess risks, and in affective thinking (which is typically primary to analytical thinking), they hold more power than mere numbers and probabilities. Another way that the affective heuristic influences risk perception is what Slovic and Peters described as “probability neglect,” or “insensitivity to probability”: “When the consequences of an action or event carry strong affective meaning, as is the case with a lottery jackpot or a cancer, the probability of such consequences often carries too little weight” (p. 324). In short, strong emotions tied to certain threats or risks can cause people to overreact.

In sum, Slovic and Peters’ (2006) review of research about the affective heuristic’s role in risk perception shows that affect plays primary, complex, direct, and indirect roles in how people apprehend and respond to risks. For that reason, the authors also warned that the affect heuristic model was too simple to explain all ways that affect can influence thinking and acting about risk. The problem of numbers versus images,

narratives, and symbols is not novel, and many communication scholars have posed and attempted to answer these questions (e.g., Adil, 2008; Bean, 2011; Betsch et al., 2010; Covey, 2011; Davies et al., 2002; Kata, 2010, 2012; Wolfe et al., 2002). On the other hand, affect theorists have been less concerned with “fixing” publics’ affective orientation to perceiving risks and more concerned with how and why those affective processes operate (e.g., Massumi, 2010, 1993).

Now that I have reviewed the intersections of public relations, affect, and risk communication, particularly in health contexts, it is useful to explore those theories and practices in the context of vaccines.

Psychology of decision-making and vaccines. Serpell and Green (2006) discussed different psychological and societal factors impacting decision-making and vaccine uptake among parents. They explained that most non-scientists perceive and assess risks subjectively and heuristically, such as by recalling salient examples of vaccine-adverse events (VAEs) and applying them to their own situations when determining the risk involved in vaccinating their children. According to Serpell and Green, this affective heuristic causes parents to disproportionately recall proportionately rare instances of VAEs (e.g., as portrayed in popular media) as more salient than vaccine benefits.⁹

Relatedly, according to Serpell and Green (2006), the nature of evidence about vaccination risk itself presents a conundrum for parents assessing vaccine risks: “Higher vaccine coverage leads to fewer VPDs and more VAEs” (p. 4043). In other words, according to the authors, increased vaccine rates will decrease or even eradicate

⁹ Again, it is worth mentioning that media coverage of VPD “outbreaks” and “epidemics” also commonly appear dramatically in news media (see, for example, Luckerson, 2015; Saunders, 2016).

incidences of diseases (e.g., smallpox and polio) over time. Further, even some parents that do recognize the possibility of reemergence of polio and other VPDs view them as less serious and dangerous than what the scientific community (and, arguably, history) shows them to be. Thus, following this logic, a false sense of security comes from the eradication of VPDs due to consistent vaccination rates: More vaccinations lead to fewer observable diseases. On the other hand, explained Serpell and Green, VAEs are logically linked to vaccines in the other direction: Higher vaccine levels lead to higher levels of VAEs. Further, Serpell and Green asserted that VAEs receive uneven media attention compared to VPDs (which receive little to no coverage from media), leading VAEs to be even more visible in the eyes of parents, while VPDs become increasingly invisible as reminders as to the benefits of vaccines. This paradoxical nature of vaccines and associated effects, argued Serpell and Green, has led to skewed assessments of vaccine-related risks among parents.

Serpell and Green (2006) described perceived controllability of risk as another factor influencing vaccine uptake: Studies have shown that parents believe most VPDs would be more controllable than VAEs if they were to befall their children. Further, research indicates a widely held belief that children's immune systems are too fragile to withstand receiving multiple vaccinations at once (Serpell & Green, 2006, p. 4044). In addition, according to Serpell and Green, the economy of decision-making used by most parents in the case of vaccines is stacked on the side of non-vaccination for two reasons: "Firstly, a decision not to vaccinate is reversible, whereas a decision to vaccinate is not," and, "Secondly, people see events caused by their actions as their responsibility—and hence foresee feeling guilty if they go wrong" (p. 4044). For this latter reason,

anticipated regret associated with the choice to vaccinate is a likely factor in decision making about vaccines: As Serpell and Green claimed, “If parents see potential VAEs as their fault but VPDs as acts of God they will be biased toward non-vaccination” (p. 4044).

Additionally, experimental studies on risk assessment and decision-making about vaccines have shown that parents are swayed by ambiguity aversion: They will avoid making decisions to vaccinate if information about vaccines and their risks is ambiguous or conflicting—and if information available to parents about vaccines and their risks is anything, it is ambiguous and conflicting (Serpell & Green, 2006).

Psychology of risk: Dread and vaccines. Scholars have noted the tendency of people to hold skewed perceptions of risks when *dread* is involved (Slovic & Peters, 2006; Spier, 2002). For example, research has shown that, while there is comparatively little risk posed by nuclear power plants or terrorism, people tend to regard those risky prospects with disproportionate horror (Slovic & Peters, 2006; Spier, 2002).

Spier (2002) demonstrated how perceived risks of vaccines falls on the more dreaded end of the spectrum because of potential unknown and far-reaching (harmful) consequences; being possibly unnecessary, ineffective, and unsafe; and being obligatory in many cases. Spier further articulated the peculiar challenges met by pro-vaccine advocates (with whom he identified): “We are left with many challenges; the very characteristics of vaccines militate against the accurate perception of the risks involved in their application” (p. S83). In other words, when vaccines work, they make invisible the risk of disease, and even then, it is impossible to know whether vaccines really neutralized the risk of VPDs, or if the risk of VPDs was neutralized by, say, natural

immunity—or if it was ever a risk at all (in the case that the child would not have contracted the VPD regardless of vaccine status). The “very characteristics of vaccines” that make ostensibly objective and accurate perceptions of the risks they pose difficult to achieve (according to Spier) have been extensively researched and responded to by mainstream scientific and communication scholars and practitioners, with varying results.

The Vaccine Debate

The vaccine debate appears as a hotbed of affect, where social discourses of risk, autonomy, choice, motherhood, and science collide—and the Internet has arguably been an incubator for the emotional and often violent rhetoric flung from all sides. The following paragraphs overview the scholarly discussions that have emerged around the debate and its historical contexts, affects, tropes, and constructions of risk.

Vaccine history. While many believe the vaccine debate to be new, a response to the unprecedented number of childhood vaccines now officially recommended, vaccine historians have argued that the debate has been ongoing since the first human smallpox vaccine was introduced to Western medicine in the 1800s (Wolfe & Sharp, 2002). For centuries, vaccination activists (pro and anti) have used extreme rhetoric and scare tactics to bolster their own sides and attack the credibility of the other (Brown, 2011; Wolfe & Sharp, 2002). But while the debate is not new, many of its contested issues and media channels are. Scholars have attributed periodic rises in anti-vaccination movements to “sensation starved” and science-poor media commentators, for whom “the exacerbation of single incidents into major *disasters* is one temptation too far...By contrast the *successful* prevention of diseases in tens of millions of individuals is virtually ignored” (Spier, 2002, p. S83). (I would point out, though, that this goes both ways—cyclical and

historically minor “outbreaks” of relatively low-risk VPDs have also been made into media spectacles.) The Internet is also credited with lighting new fires in the debate, changing it in ways unimaginable just a few years ago (Betsch et al, 2010). This following section proffers a brief history of the vaccine debate and the changing issues and media that have played central roles in its evolution.

The development of vaccines began with smallpox when, in 1796, Dr. Edward Jenner used cowpox matter to inoculate people against smallpox (Kaufman, 1967). His method (sometimes called the Jennerian method) of vaccination was introduced in the US by Benjamin Waterhouse at the turn of the 19th century, and soon the first federal legislation, the Vaccine Act of 1813, was passed that regulated the distribution and administration of vaccines in the interest of protecting consumers (Kaufman, 1967). Government initiatives also helped establish provisions to vaccinate poor people in U.S. cities, and the smallpox vaccine soon saw wide enough distribution to effectively eradicate smallpox as a serious threat in America at that time. However, by 1822, the Vaccine Act was repealed, partly due to a new smallpox outbreak that resulted from the accidental mailing of smallpox material (rather than the vaccine) to a North Carolina doctor. Still, Jennerian smallpox vaccination was commonplace and effective throughout the earlier half of the 19th century.

Anti-vaccination discourse in social movements can similarly be traced to 19th century Europe and America, coinciding with legislation passed in those regions making smallpox vaccinations compulsory (Blume, 2006; Durbach, 2000, 2002). In the 1850s, opposition to vaccines began to arise, and at the same time, vaccination rates dropped (Kaufman, 1967). However, according to Kaufman (1967), the decrease in smallpox

vaccines was not primarily due to anti-vaccine movements, but a result of the sharp decline in smallpox and the growing distance in time from when smallpox posed an epidemic threat. However, by the 1870s, smallpox had made a comeback in the US, and as states began to push vaccination once again, opposition arose anew in the form of “a deluge of pamphlets and leaflets, legal battles in the nation’s courts, occasionally instigating destructive riots, and fighting on the floors of the various state legislatures” (Kaufman, 1967, p. 464)—and this time it was “terribly successful” (Kaufman, 1967, p. 464).

At the turn of the 20th century, anti-vaccination associations and leagues had been established in the US that helped organize the movement, whose members fell into several camps: those with financial incentive to oppose state regulation of public health (e.g., homeopathic doctors), as well as those who rejected vaccinations on religious, philosophical, and political grounds (Kaufman, 1967). Many key themes have endured in the vaccine debate over the last two centuries, including religious and moral objections; safety and efficacy of vaccines; distrust in mainstream science and doctors; autonomy and choice (as a civil liberty); and questions of class, privilege, and civic responsibility.

A history of vaccination rhetoric. Several scholars who have written about anti-vaccinationism have noted the “uncanny similarities” (Wolfe & Sharp, 2002) between past and present rhetoric. Wolfe and Sharp argued that anti-vaccine sentiments have held fast because they are deeply rooted in spiritual and philosophical beliefs that are often difficult to change, regardless of what the medical and scientific communities or government agencies say or do.

Blume (2006) analyzed anti-vaccination rhetoric then (pre- and early-industrialization) and now (post-industrial society) and also noted both similarities and differences in issues at stake. While several distinctions exist between pre- and post-twenty-first-century vaccination debates—as Spier (2002) stated it, “Times have changed. There are many more vaccines to fulminate against” (p. S82)—major differences include (a) a shift toward individualism in modern market societies and (b) the advent of the Internet as a new medium for anti-vaccination mobilization and discourse.

From collective wellbeing to individual rights. What *was* at issue, according to Blume, “was the scope of legitimate state intervention. In today’s controversy matters of rights and liberties again loom large” (p. 639). However, today’s vaccine debate is fueled less by a *collective class-consciousness* prevalent a hundred years ago than by the individual *right to make informed decisions*: “a right (and responsibility) given growing legitimacy by a different rhetoric of healthcare” (p. 639). In other words, whereas the old vaccine debates centered on protecting the collective well-being of citizens and their rights to be free from government control of their bodies, the rhetoric of new vaccine debates is more individualistic and focused on individual rights and privacy. Old vaccine debates were driven by collective autonomy of civil society from government control, while new vaccine debates are driven by individual autonomy and individuals’ rights to make informed choices about their own lives and bodies. As Brown (2011) put it: “The self-determining, autonomous individual is valorized, depicted as a rare throwback to a (mythical) time before state regulation” (p. 154).

The shift from collective rights and well-being to individual ones has coincided a related shift in public health ideology, one toward a market consciousness that understands the individual as consumer, and which also places more and more emphasis on individual rights and responsibilities. Blume (2006) explained this marked logic: “Consumers, informed and empowered, have the right of choice so why not here? Isn’t a critical stance towards vaccination, and hence the possibility of alternative viewpoints, a logical consequence of this ideological shift?” (p. 639). However, Blume went on to explain that there has been growing tensions between commitments to public good and individual autonomy that have accompanied the shift in healthcare ideology to a neoliberal market logic. Blume noted the contradiction between (a) the emphasis in official public health policy on informed consent and autonomy, and (b) the actual practices relating to vaccinations that do not respect individual rights, instead favoring public good: “What we then see is an ideological conflict at the very heart of public health, in which individual rights on the one hand, and the expert articulation of the common good on the other, are pitted one against the other” (p. 639).

Brown (2011) also wrote about the tension between individual rights and community well-being that is created by the vaccination question: “some people feel that they should not be forced to sacrifice their beliefs for a murky conception of common good, especially if this sacrifice is legislated by outside authorities” (p. 153).

New skepticism. Another difference between vaccine debates then and now is a new, higher valuation of critical reflexivity and a skeptical orientation to dominant science (Blume, 2006). That is not to say, however, that the anti-vaccination side has eschewed science, but rather that they have—like their pro-vaccine counterparts—

appropriated certain scientific discourses and evidence to justify their own claims. Anti- and pro-vaccinationists have also used scientific language to invalidate the “other side’s” arguments. As Blume (2006) commented about the anti-vaccine movement: “We need simply look at their frequent references to scientific publications claiming a link between MMR and autism, and attempts on the other side to debunk this as ‘junk science’” (pp. 639-640). Brown also summed up the doubt that many citizens feel about state-mandated vaccines: “some citizens fear the regulations and surveillance of an over- bearing government, while others are anxious about a weak government that capitulates to pharmaceutical companies and other corporations” (p. 154). However, Brown also noted that distrust in the government is not new for Americans—but what *is* new is the amplification of risk and increased circulation of risk management discourses in popular media, all of which have served to intensify the debate and the feelings of mistrust and apprehension about the risks that vaccinating (or not) pose.

In sum, vaccination debates since the late 19th century have both changed and remained steady. Anti-vaccination sentiment has retained certain essential claims regarding civil liberties (i.e., freedom from state tyranny), but it has also shifted from emphasizing collective public good to idealizing individual autonomy and right to make informed decisions (Blume, 2006).

New ammunition: MMR and autism. There is yet another actor in the present vaccine debate: autism. In vaccine discourse of the two decades, one of the most visible contentions of the anti-vaccination and pro-choice crowds was based on a highly publicized research article that ostensibly linked the measles-mumps-rubella vaccine (MMR) to the developmental disorder autism (Brown, 2011). Though the research and

the article have been discredited and denounced by several “official” and “expert” sources, the autism link remains a mainstay in the anti-vaccinationist’s arsenal (Brown, 2011).

The infamous article was published in 1998 in the journal *The Lancet* and based on a study led by Robert Wakefield, a British (former) doctor, surgeon, and medical researcher (Brown, 2011). The published article reported a possible link between the MMR vaccine and the onset of autism symptoms in eight out of 12 children studied, as reported by the parents of the children (Brown, 2011). A “lay” explanation in *The New York Times* summed up Wakefield’s findings as to the MMR-autism link:

His belief, based on a paper he wrote about 12 children, is that the three vaccines, given together, can alter a child’s immune system, allowing the measles virus in the vaccine to infiltrate the intestines; certain proteins, escaping from the intestines, could then reach and harm neurons in the brain. (Dominus, 2011, para. 3)

Wakefield did not claim to have proven that MMR caused autism, but these inklings were enough to cause a stir. In addition to his article’s publication in *The Lancet*, Wakefield made his findings more public by appearing in a press conference and casting doubt on the MMR vaccine, stating that he could not personally recommend its use until the issue had been resolved (Brown, 2011). Other media outlets picked up the story and set in motion a what has been often characterized as a “worldwide scare over the vaccine’s safety, triggering falls in immunisation rates...and an epidemic of unwarranted self-recrimination among parents of autistic children” (Deer, 2007, quoted in Brown, 2011, p. 147). Some celebrities also latched onto the latest wave of vaccine skepticism; notably,

actor Jenny McCarthy, whose son was diagnosed with autism in 2005, became vocal in the debate, claiming credentials of “mommy instinct” and a degree from “Google University” (Kata, 2012). She made many public statements about the link between vaccines and autism, appeared on talk shows such as Oprah and Larry King, and published a book about the dangers of vaccines related to autism (McCarthy, 2007), all of which garnered criticism from the pro-vaccine community (Kata, 2012). McCarthy also became president and veritable spokesperson of the (vaccine-critical) nonprofit organization for families affected by autism, Generation Rescue.

Following the media frenzy, fueled in part by celebrity endorsements and news reports of a definitive link between autism and MMR (even though the link was not definitive, nor did Wakefield claim it to be), investigative journalist Brian Deer (Deer, 2014), of London’s *Sunday Times* launched an inquiry that not only publicly debunked the findings of Wakefield and his colleagues, but also purportedly exposed them as fraudulent. In a series of articles published in the *British Medical Journal (BMJ)*, Deer claimed that, prior to the study, Wakefield had been contracted for unprecedented fees by British attorney Richard Barr to conduct research into MMR and its effects. Deer alleged that the goal of the research was to find a link between MMR and a “new syndrome” that would be the matter of a class-action lawsuit against MMR manufacturers on behalf of English families whose children had been harmed by the vaccine. Further, children who participated in the published study were allegedly handpicked by Wakefield and Barr.

After the conflict of interest was exposed, *The Lancet* printed a retraction of the interpretation of the findings as printed in the original 1998 article. The retraction was authored by ten of the original 12 authors (Wakefield was not among the ten), who stated:

We wish to make it clear that in this paper no causal link was established between MMR vaccine and autism as the data were insufficient. However, the possibility of such a link was raised and consequent events have had major implications for public health. In view of this, we consider now is the appropriate time that we should together formally retract the interpretation placed upon these findings in the paper, according to precedent. (Murch et al., 2004)

Britain's General Medical Council (GMC) also launched its longest-ever misconduct hearing, finding Wakefield guilty on many counts, concluding that he had committed ethical violations by failing to disclose conflicts of interest and subjecting child participants with developmental disorders to unnecessary and intrusive procedures (Dominus, 2011). The *BMJ* investigation concluded that the research was not only unethical, but also fraudulent, as Wakefield had reportedly misrepresented timelines in the study to "suggest direct culpability of the vaccine" (Dominus, 2011, para. 3). Further, ten of Wakefield's co-researchers withdrew their support of the study's findings, and additional studies were unable to replicate its findings (Brown, 2011). Ultimately, the GMC revoked Wakefield's medical license (Dominus, 2011).

Yet, as Brown (2011) put it, "The MMR/autism link...was (and still is) as good as confirmed in many people's minds" (p. 147). In fact, many public figures who are anti-vaccine advocates have been vocal in their continuing support for Wakefield and suspicion of vaccines. In 2010, when the GMC's hearing concluded and the council publicly came down on Wakefield, Generation Rescue, the autism nonprofit in part headed by celebrity Jenny McCarthy, published a statement in support of Wakefield on its blog called "Age of Autism," pronouncing:

Dr. Andrew Wakefield is perhaps this debate's greatest hero. He's a doctor who has held onto the truth, unbowed, through pressure that would break most mortals. Dr. Wakefield's influence in saving other children from the fate that befell so many children is incalculable. (Generation Rescue, 2010)

The co-founder of Generation Rescue, JB Handley, also spouted: "To our community, Andrew Wakefield is Nelson Mandela and Jesus Christ rolled up into one...He's a symbol of how we feel" (Dominus, 2011). Jenny McCarthy (2011) also defended Wakefield's study's findings in an opinion piece that she published in the *Huffington Post*.

Another study that, for some, exacerbated the perceived link between vaccines and autism was conducted by the U.S. Food and Drug Administration (FDA) in 1997. The FDA conducted a review of all foods and medicines that contained mercury to measure their mercury levels against the U.S. Environmental Protection Agency's (EPA) guidelines for what constituted safe levels of mercury consumption; this included many vaccines that contained the mercury-based preservative thimerosal. While thimerosal is made up of a different variation of mercury than the type that the EPA guidelines concerned, and even though the FDA's study reported no evidence that thimerosal contained in vaccines harmed those exposed to it, the FDA and representatives from related agencies (including the CDC, AAP, and NIH) chose to publish statements that vaccines with thimerosal could expose infants to amounts of mercury over what was recommended by the EPA (Brown, 2011).

The American Academy of Pediatrics (AAP) and Public Health Service "opted to err on the side of caution and recommend that vaccine manufacturers...phase out the use

of thimerosal” (Brown, 2011, p. 148). And thus, in the public mind (aided by mass and popular media) arose a link between mercury, vaccines, and autism. However, many vaccines still use thimerosal, and many major health agencies, including the CDC, AMA, and WHO, do not agree that thimerosal causes developmental delays (Brown, 2011). Conflicting information from seemingly equally “official” and credible sources only adds uncertainty and further confounds the debate today.

Yet another example of confusing information coming from “official” sources that have raised doubts about the safety of vaccines and their link to autism is the National Vaccine Injury Compensation Program (VICP), an initiative of the larger National Vaccine Childhood Injury Act (NCVIA, 42 U.S.C. §§ 300aa-1 to 300aa-34) (Brown, 2011). The VICP, under the U.S. Health Resources Services Administration (HRSA), was established in 1988 in part to compensate victims of certain vaccine-related injuries incurred since then (HRSA, n.d.). According to HRSA’s webpage for VICP, the program is funded by \$.75 excise taxes on CDC-recommended vaccines. According to Brown (2011), one case gained media attention in 2008, when the VICP compensated the family of Hannah Poling, a young girl who was diagnosed with autism spectrum disorder after receiving five vaccines at 19 months old, finding that the girl had a congenital mitochondrial disorder that predisposed her to being injured by vaccination. Thus, while the vast majority of vaccine officials and mainstream experts avow that vaccines are almost always safe for children, cases such as Poling’s remind and confuse even pro-vaccine parents about inherent risks present in officially safe vaccines.

Conflicting information about the vaccine-autism link, such as that from Hannah Poling’s case, comes from countless sources that seem equally credible, and the stakes

are perhaps the highest imaginable for some parents: the health and safety of their children. Moreover, there is no clear choice to be made that is certain to be the “safe” choice—redundant risks inherent in both choices (to vaccinate or not) leave many parents feeling stuck between a rock and a hard place.

Science’s response to vaccine dissent. Creating even more anxiety in vaccine-skeptical, confused, or even simply curious parents is the mainstream science and medical communities’—and many pro-vaccine parents’ and other spectators’—responses to those who stray from a staunchly pro-vaccine position.

Blume (2006) described the scientific community’s response to current anti-vaccinationists as dismissive at best: “some are convinced that anti-vaccinationists are simply misinformed and irrational (or anti-rational). They must be made to see the truth of the matter... by appeal to a superior science” (p. 640). Leach and Fairhead (2007) similarly described how these “official” agencies that are involved in public policy about vaccines respond to anti-vaccine sentiment: “Dominant policy arguments construct public concerns about vaccination in negative ways: as ignorance, misinformation, rumour, media amplification, misguided or maleficent movements, and so on” (p. 36, as quoted in Brown, 2011, p. 153).

Members of mainstream scientific and medical communities that have responded arguably precipitously to anti-vaccination discourse—by dismissing, discouraging, even suppressing questions and concerns voiced by parents, organizations, and even fellow scientists (Martin, 2015)—range from the global (e.g., WHO) to very local (e.g., private practice pediatricians). Martin (2015) wrote about the suppression of dissent in the vaccine debate as systemic discouragement from expressing anything other than

dogmatically pro-vaccine views, especially among scientists and other “experts” or public figures. He observed, “The vaccination debate is not just a disagreement about evidence concerning benefits and risks: values are involved too” (p. 144). Further, “Because vaccination is a signifier for the benefits of modern medicine, some proponents see any questioning of vaccination as a rejection of enlightened thinking,” and,

Because nearly all experts endorse vaccination, there may seem to be no rational basis for opposition. In this context, any physician or scientist who questions vaccination is a potential threat to the public perception that credentialed experts unanimously endorse vaccination. This sets the stage for the suppression of dissent. (p. 144)

Martin defined suppression of dissent as “action taken against dissenting individuals, or the research supporting their positions, that goes beyond fair debate” (p. 144), and includes tactics such as censorship, demotion, denial of funding, reputation assassination, official and unofficial reprimands, and general harassment.

While it is arguable whether the research of various vaccine dissenters at the scientific and academic level are valid and reliable and credible, Martin (2015) argued that it is essential to the integrity of the science and reason to resist going beyond the boundaries of “fair debate” and suppress their findings out of fear that, if made public, they would create widespread public doubt in vaccination. As Martin put it, dissent suppression “discourages supporters from thinking for themselves about the evidence and arguments, because they encounter contrary views less frequently” (p. 145). And ultimately, the dissenting research will survive or perish by its own merits if exposed to fair scientific debate and critique. Further, if publics perceive dissenters as unfairly

treated and their research unduly suppressed, there is potential for a groundswell of support for the dissenter among the general public and create questions about why the research needed to be unfairly suppressed in the first place instead of openly and honestly critiqued and debunked (if it is in fact not valid).

He offered examples of medical researchers and practitioners, as well as citizen activists, who have been retaliated against disproportionately for publicly challenging certain vaccines' safety or efficacy, including the famous Andrew Wakefield, but also less prominent voices of vaccine skepticism. Relation tactics used to suppress vaccine criticism, according to Martin, have included attacks on professional and personal integrity, credibility, and reputation, sometimes even ending dissenters' careers in their fields. Martin (2015) argued that dissent, even if unqualified scientifically, is an important component in any debate on any issue, because it pushes researchers to create more rigorous studies and stronger evidence in support of their (dominant) positions (e.g., pro-vaccination). The suppression of vaccine dissent in the scientific and public health arenas also seeps into private domains where many parents and patients become hesitant or afraid to ask questions about vaccinations, in turn impeding true informed consent and autonomy.

According to Bean (2011), though members of publics are increasingly turning to other sources (such as the Internet) for vaccine information, physicians remain a primary source for medical advice. It is not surprising, then, that much emphasis among pro-vaccination experts has been placed on the interpersonal route of physician-patient communication rather than (or in addition to) public communication about vaccines. In fact, physicians, especially pediatricians, now serve as an interpersonal source of vaccine

advocacy. For example, the CDC requires physicians to deliver Vaccine Information Statements (VISs) to patients receiving vaccines (or parents or guardians of minor patients) informing them about the benefits and risks associated with particular vaccines (42 U.S.C. §§ 300aa-26). According to the CDC's instructions for physicians to distribute VISs to patients, the informational documents (which are produced by the CDC) can be shared electronically or on paper, but they must be given to patients prior to each vaccine covered by NCVIA. VISs are short (two pages), contain plain language, and inform readers about the diseases prevented by vaccines, when and to whom the vaccine should be administered, who should avoid the vaccine, possible risks associated with the vaccine (along with their probabilities), the process for reporting vaccine injuries, and how to get further information about vaccines, such as by visiting the CDC's website.

Currently, the CDC's website warns visitors that, "If one or two cases of disease are introduced into a community where most people are not vaccinated, outbreaks will occur" (CDC, 2014b). Further, "What would happen if we stopped vaccinations? We could soon find ourselves battling epidemics of diseases we thought we had conquered decades ago" (CDC, 2014b). An AAP press release entitled "The Role of Children whose Parents Decline Vaccination in a Measles Outbreak" offers this warning:

despite high community vaccination coverage, measles outbreaks can and do occur in clusters of children whose parents decline vaccination. This creates a major cost for public health agencies who must engage in outbreak response programs, and to families who must quarantine children to prevent further spread of measles. (AAP, 2010)

These statements from the CDC and AAP are representative of what the mainstream scientific community espouses about vaccinations. In short, members from all levels of the mainstream scientific and medical communities seem to agree on an arguably dogmatic pro-vaccine stance and messages that may work to discourage or discredit those who might otherwise (audibly) question the efficacy and safety of vaccines.

Blume (2006) called dismissive responses by the scientific community to anti-vaccination rhetoric neither adequate nor effective: inadequate, because “analysis must see both sides as mutually engaged in a process of contestation, in which the reflexive analysis of (shared) experience, differences in the assessment of risk, and the place of expertise in democratic decision making are all at stake,” and ineffective, “because what is being contested goes far beyond establishment of some objective measure of vaccine-risk, to the heart of modern citizenship and democratic politics” (p. 640). In fact, argued Blume, anti-vaccination advocates are likely as influenced by “erosion in public trust in government health authorities” (p. 640) as they are by objective scientific data (see also Heath & O’Hair, 2010). This erosion of trust in health officials has been spurred by errors in judgment on the part of health officials in the past (e.g., government approval of certain medicines that end up actually being deadly) and government support for an overgrown pharmaceutical industry (Blume, 2006).

Scholars who research the vaccine debate have also noted other factors that are more influential than objective scientific data in the vaccine debate, namely *affective* appeals, arguments, and tactics used by the anti-vaccination side that do not adhere to normative objective, rational logic typically deployed by the mainstream scientific community (Kata, 2012). As Kata (2012) explained it, “emotional narratives about

vaccine side-effects have been found to increase risk perception and uptake intention to a greater extent than statistical information, demonstrating the power of emotional appeals and anecdotes over educational efforts” (p. 3784).

Another factor and sociocultural identity that substantively alters knowledges and perceptions of vaccines and vaccine risks is being a parent, specifically a mother—a role constituted by not only individual material and emotional experiences and routines of (for example) being responsible for the well-being of a child, but also by social discourses of motherhood that largely shape those experiences. Those discourses of motherhood also interconnect with discourses of risk, medicine, and science that ultimately play essential parts in the childhood vaccine debate. The next section will elaborate on how experiences and discourses of motherhood and maternal thinking (Ruddick, 1980, 2004) influence perceptions of vaccine safety and efficacy, vaccine science and risks, and the childhood vaccine debate (and its debaters).

Feminism, Mothers, and Vaccine Science

This section, an addition made to the literature late in the study in response to salient themes identified through the processes of data collection and analysis, reviews feminist critiques and theories relevant to (social, cultural, communicative) vaccine issues and vaccine science. First I overview (a) postmodern feminist theories of knowledge, including standpoint theory (Hartstock, 1984; Harding, 2004, 2015), particularly a maternal standpoint informed by care and maternal thinking (Ruddick, 1980, 2004), and strong objectivity (Harding, 1993, 2015). This segment includes related feminist criticisms of dominant science and medicine and their common truth-claims. The discussion will then more narrowly focus on mothers’ involvements in the current

vaccine debate and risk-laden vaccine decisions on behalf of children, and (f) how mothers and U.S. feminist health movement in the 20th century historically shaped the present vaccine climate.

Postmodern feminist theories of knowledge. According to Harding (1987, 2015), feminists have broken away from traditional methods and normative, hegemonic, and patriarchal standards of truth to develop their own methodological approaches that validate women's knowledge and life experiences and which aim to be non-hierarchical, participative, and self-reflexive. Feminist methodologies recognize intersections and social constructions of gender, race, class, sex, sexuality, and other identity categories and subject positions (Harding & Norberg, 2005).

Feminist researchers should constantly practice a working self-reflexivity (Alcoff, 1997; Harding, 1993). Alcoff (1997), for example, advocated “the importance of recognizing the knower's stake in the production of knowledge” (p. 14). Mies (as cited in Gorelick, 1991) argued for a “*conscious partiality*’ toward the oppressed, engagement in their struggles for change, and the creation of a form of research that fosters *conscientization* of both the researcher and the researched” (p. 461). This hypercritical stance helps the researcher remain self-reflexive of biases, assumptions, and partialities toward or against participants.

Traditional, patriarchal methods, methodologies, and epistemologies have claimed to remain objective and value-free; however, they are actually the opposite, usually favoring males' knowledge and perspectives (Harding, 1987, 2015; Harding & Norberg, 2005). Additionally, Harding and Norberg (2005) argued that, while traditional research methodologies idealize objectivity and value-neutrality, feminism understands value-free

research as unachievable and undesirable. Additionally, research has real consequences for the researcher. Gorelick (1991) proposed, “The researcher is transformed in the process of research—influenced and taught by her respondent-participants as she influences them” (p. 469).

Feminist research is political, activist, and practical in orientation (Harding, 1987, 1993, 2015). Harding and Norberg (2005) claimed that value-laden and “socially engaged research—that is, research that holds itself ethically and politically accountable for its social consequences—can in many instances produce knowledge” (p. 2010). Thus, feminist research is concerned with not only being value- and experientially-grounded, but also with advancing knowledge that will have practical consequences and benefits. Harding and Norberg asserted that viewing society as governed by powerful institutions and structures is integral in designing and performing research that has practical benefits for women and other marginalized groups.

Feminist research and epistemologies have often been described in contrast to positivism. Gorelick (1991) described the tenets of positivism: “its hands-off approach, its clinical fastidiousness about mutual contamination, its insistence that research must precede change, that indeed change is the business of politicians and not scientists” (p. 462). Positivist research values rationality, logic, and objectivity, attributing truth to dominant “scientific” research (Flax, 1992). However, Flax (1992) pointed out that traditional methods do not take into account the presumed connection between “science” and “truth”: “Social scientists also rarely questioned science's relationship to the real” (p. 449). Many feminist approaches to research, including postmodern feminist research, reject the idea that there is one universal, discoverable truth and instead acknowledge the

ever-changing, unique, and subjective truths of individuals' lived experiences (Harding & Norberg, 2005).

Additionally, positivism has been critiqued by feminist researchers as reductionist and objectifying of participants, creating such a rigid divide and hierarchy between participant and researcher that the participants are conceived of as subjects that can be studied the same way as nonhuman things (Gorelick, 1991). Gorelick (1991) proposed that feminist researchers should acknowledge their relationships with their participants; feminist research emphasizes the autonomy and agency of participants and tries to deconstruct the participant/researcher hierarchy. She claimed that increased trust, honesty, and transparency in the research process and data collection are practical benefits of a more heterarchical feminist research: "A subject population does not tell the truth to those in power" (p. 461). Rather than conducting research as a top-down, linear process, she suggested that research should be a "dialogue or contrapuntal duet" (p. 469).

Harding and Norberg (2005) also pointed out that power differentials might have impacts on performing research, specifically fieldwork. They named three areas in performing qualitative research in which the researcher should be aware of power differences. First, the researcher and participants "usually bring different amounts and kinds of social power" to the research (p. 2010). Second, the researcher automatically gains power by getting to define the research methods and identifying social "problems" of interest. Finally, the researcher again becomes more powerful by granting herself or himself authority to translate and analyze data collected from participants.

Harding (2015) also critiqued mainstream Western science for its presumed objectivity but lack of transparency as far as biases and exclusivity of scientific research

communities and motives for research agendas that are underpinned by those assumptions and often even funded by corporate actors or other entities whose interests are not all in all altruistic. Further, argued Harding, even science from within dominant frameworks that does serve the interests of the most politically and economically vulnerable subjects only does so when the values and needs of the vulnerable align with those of the most powerful in society—those within dominant frameworks: “For example, modern Western medicine has served most people's values and interests in its attention to communicable disease, since the king no less than his slave can catch the measles or HIV/AIDS” (Harding, 2015, p. 35).

As I will elaborate more on later, I argue that this particular example from Harding is relevant to vaccine research—*medical* and hard sciences research, that is. In other words, I believe that scientific research on vaccines generally *has* been in the interest of vulnerable populations, resulting in global vaccine programs that have saved countless lives and prevented widespread diseases especially in regions with limited access to health-related technologies. On the other hand, in the case of *social* sciences (e.g., in communication fields) about the vaccine *debate* and parental involvement in vaccine choices and related issues such as medical autonomy and informed consent and stigma (etc.), it may not be so clear whose interests are being served.

In the same vein, Harding (2015) pointed out several times that scientific research is very expensive and very often funded by corporations or governments with their own values and motivations that favor certain research findings. (This is again true of vaccine research, but I will not go into details here—see chapter five for more discussion.) Yet, in Harding’s (2015) words, “in our real world, it cannot be that all useful knowledge that

social communities might want can be produced by sciences funded primarily by profit-making corporations, militaries, and imperial governments” (p. 36). As such, Harding emphasized her call for the inclusion in scientific research of the voices of those whom the research most directly impacts, especially politically and economically disadvantaged and oppressed subjects. This remedy is part of what Harding proposed as an alternative “logic of scientific inquiry” to the dominant (positivistic) logic of inquiry described thus far:

Starting off research from the questions that arise in the lives of groups that are excluded from participating significantly in the design and management of our social institutions and practices permits us to recognize new and valuable—often to us privileged groups also—questions and procedures for answering them that did not, and perhaps could not, occur to people from the groups who did design and manage our social worlds. (p. 38)

Building on the idea of competing interests in society as both beneficiaries and benefactors of science, as well as a more inclusive logic in inquiry, Flax (1992) eloquently argued that feminist researchers “are not content with constructing discourses which privilege some of those who have previously lacked power (at the necessary expense of others) but wish to claim discovery [sic] of ways to increase the general sum of human emancipation” (p. 457). Many aims and aspects of feminist research are also shared by postmodern research agendas, such as focuses on discourse and power as reflected in Flax’s quote; however, postmodernism has been often accused by feminists of being apolitical and not intent enough on activist agendas for social justice. Still, many have found ways to reconcile the two, at least sometimes (myself included). The next section

will explain postmodernism by itself before moving into a discussion of postmodern feminist methods and epistemologies.

Postmodern knowledge: Research and epistemologies. Postmodernism gained momentum in mid-twentieth century, post-World War II France, a time and place of notable social and political uncertainty and activism (Best & Kellner, 1991). From this era emerged a new leftist intellectual class that included Michel Foucault, Jean-Francois Lyotard, Jacques Derrida, and Jean Baudrillard, to name a few of the more prominent postmodern players (Best & Kellner, 1991).

Postmodernism was for some a departure from modernistic values of objective truth, universality, centralized power, consensus, rationality, and other Enlightenment values (Best & Kellner, 1991). Contrasting modernism, postmodernism values plurality, micropolitics, diversity, dissent, and de-centered power. It is a movement toward difference and away from consensus. Further, postmodernism is suspicious of the validity of experience as unmediated, positing that our experiences are always shaped by our social locations and discourse (Scott, 1992). Thus, postmodernism values deconstructed and destabilized meaning and local and situated (fragmented) knowledge (Haraway, 1991).

In sum, postmodern philosophies work to expose systems of domination by critiquing and resisting hegemonic and undue power; as such, postmodernism does not elevate itself as the best or truest approach, but posits that no one paradigm or perspective should be the only mode for understanding the world (Best & Kellner, 1991; Collins, 2000). Postmodernism's anti-foundationalism, which even postmodernists themselves have called "nihilistic" at times (Collins, 2000), has made it both easy to appropriate yet

difficult to apply in fields that are more grounded in the “real world,” such as public relations and feminist scholarship.

“Ruins” and affect in postmodern feminist research. Some scholars who engage postmodern feminist epistemology and poststructural feminist methods of analysis have used the term *ruins* to name sites of traditional positivist inquiry that are targets of poststructural methods of analysis and deconstruction. The notion of “*the ruins*” is “shorthand for the crumbling edifice of Enlightenment values that have regulated theory and research for two centuries, such as belief in reason and progress, unmediated access to truth, and the agency of the centered, humanist self” (Maclure, 2011, p. 997). In other words, the metaphor of ruins has been used to symbolize the familiar norms and structures and routines of positivist-influenced research (including qualitative and quantitative methods), such as categories like “data” and standards like reliability and triangulation, that cannot remain standing or intact after deconstruction rooted in the postmodern turn (St. Pierre & Pillow, 2011).

Work in the area of poststructural feminist research and methods has questioned the possibility of “post-structural” or post-foundational methods of empirical research that meaningfully breach the limits of humanist science and Enlightenment categories of knowledge (Maclure, 2011; St. Pierre & Pillow, 2000). Maclure (2011), for one, asked: “Where are the ruins?” In her essay questioning whether poststructural feminist research had in fact dismantled humanist and Enlightenment categories such as reason and data, Maclure that, “In short, poststructural theory has often failed to *make a difference* to the mundane practices of research and the kind of knowledge that it produces” (p. 998). Maclure’s answer to the failure thus far of poststructuralism to defy normative humanist

rules and categories of empiricism suggests an affective turn as a move away from abstract deconstruction to “a more materially engaged research practice” (p. 999).

Maclure explained how a postmodern feminist affective turn in empirical research would appear:

This kind of empiricism traces intensities of affect that move and connect bodies, subatomically, biologically, physically, and culturally. It does not privilege human interpretation or conscious perception, and the bodies that are animated by affect are by no means restricted to human bodies. (p. 999)

The affective turn in empirical methods described by Maclure combines principles of both feminist and postmodern or poststructural epistemologies and research methods.

Postmodern feminist research and epistemologies. Though postmodernism seems to disagree with feminism on certain key points (which I will discuss below), postmodern research methods and methodologies overlap feminist aims in many areas (Stone-Mediatore, 2003). While modernist approaches such as positivism value objectivity, consensus, and discovering universal, unwavering truths, postmodernism allows room for doubt, ambiguity, dissension, and contested and multiple subjectivities (Fraser & Nicholson, 1990; Stone-Mediatore, 2003). Postmodern feminism is critical of power relations in real-world, everyday interactions and in research. In addition to feminists' questioning of gender and power differentials within and among dominant and marginalized groups, a postmodern methodology also critiques the cardinal modernist and Enlightenment assumptions of reason, truth, progress, humanism, objectivity, and neutrality (Collins, 2000; Harding, 1990). According to Collins (2000), postmodernism

questions assumptions often taken for granted in social science disciplines and research, including:

philosophy grounded in reason provides an objective, reliable, and universal foundation for knowledge; “truth” resides in knowledge gained from the appropriate use of reason; knowledge grounded in universal reason, not in particular interests, can be both neutral and socially beneficial; and science, as the exemplar of the legitimate use of reason, constitutes the paradigm for all true knowledge. (p. 53)

Relatedly, postmodern feminism questions the positivist notions of authority and the expert.

In her postmodern feminist critique of traditional research and science, Flax (1992) wrote about the Enlightenment values that have been the cornerstones of positivist research in social sciences, specifically the idea of the expert, authority, objectivity, and truth. She argued that traditional Enlightenment-centric research claims that science is the supreme approach to discovering transcendental truths and knowledge and achieving neutrality (what she calls perceived “innocence”) in research (p. 450). However, Flax enumerated some common, largely unexamined assumptions of the positivist and Enlightenment traditions:

...belief[s] that truth and prejudice are clearly distinguishable and dichotomous categories, that there is a neutral language available to report our discoveries, that the “logic of discovery” operates independent of and without distorting either its subject (user) or object of investigations, that the “scientific” process is self-correcting and self-governing... that the social world is stable, homogeneous, and

lawfully structured, and that these laws are good and uncontradictory, that is, work to the equal benefit of all. (p. 450)

Flax argued that postmodern researchers should be suspicious of these assumptions and challenge them, especially the conceptualizations that Enlightenment thinkers have about the relationships between reason, truth, and knowledge. According to her, postmodernism “invites us to engage in a continual process of dis-illusionment with the grandiose fantasies that have brought us to the brink of annihilation” (p. 460). Flax also posited that, according to postmodernism, there is no transcendental or universal truth, knowledge, or mind, because people's experiences, beliefs, and perceptions are always already discursively constituted. There are no a priori mental conditions that uniformly dictate and regulate how people make meaning. In other words, “There are no immediate or indubitable features of mental life” (Flax, 1992, p. 452). This reminds us that it is important, when conducting research, to approach each participant as an individual situated within a unique location in culture and set of experiences and to take those factors into account when analyzing data, shedding assumptions about shared understandings and meanings. Additionally, Collins (2000) noted that postmodernism adds deconstruction, decentering, and constant skepticism to methodology in order to recognize our political and epistemological positions in our research, aligning with a key feminist concern with reflexivity.

Situated knowledge and strong objectivity. Feminist philosopher of science Donna Haraway (1991) argued for a middle position between “all-knowing, all-seeing” positivism and “everything-is-socially-constructed” radical postmodernism: *feminist objectivity*, or *situated knowledges*. For Haraway (1991), feminist objectivity and

rationality still exist in a postmodern world, but they have special criteria such as “passionate detachment” (p. 585) from objects of study, as well as self-conscious “positioning,” which recognizes the political and ethical aspects of science (p. 587). Haraway summarized her postmodern feminist beliefs about objective knowledge: “Feminist objectivity means quite simply situated knowledges” (p. 581).

Harding (1993, 2005), elaborating on Haraway’s theory of situational knowledges, wrote about the standard of objectivity in traditional science (which she defined as the removal of social and cultural values from research, or value-neutrality) and the conversations feminists have had about it, arguing (somewhat counterintuitively) that objectivity is not strong enough in traditional scientific research:

The problem with the conventional conception of objectivity is not that it is too rigorous or too ‘objectifying,’ as some have argued, but that it is *not rigorous or objectifying enough*; it is too weak to accomplish even the goals for which it has been designed, let alone the more difficult projects called for by feminisms and other new social movements” (pp. 50-51)

By this Harding meant that standards of and procedures for achieving objectivity in traditional scientific method do not actually establish objectivity, but rather allow scientists to turn a blind eye to widely held cultural assumptions and biases that inevitably find their way unnoticed into research findings:

scientific method provides no rules, procedures, or techniques for even identifying, let alone eliminating, social concerns and interests that are shared by all (or virtually all) of the observers, nor does it encourage seeking out observers whose social beliefs vary in order to increase the effectiveness of scientific

method. Thus culturewide assumptions *that have not been criticized within the scientific research process* are transported into the results of research, making visible the historicity of specific scientific claims to people at other times, other places, or in other groups in the very same social order. (p. 57)

On the other hand, Harding (2015) argued that the following advantageous criteria of strong objectivity provide safeguards against a false sense of value neutrality and fairness in science: Strongly objective scientific research (a) is grounded in and realistic practices of science and not abstract ideals or theoretical suggestions—it's practical before normative; (b) identifies problematic homogeneity and exclusivity of research communities and disciplines and the resulting biases and assumptions; and (c) scrutinizes relationships between “conditions of the subjects’ lives and the larger social relations that shape those conditions” (p. 30)—or provides context.

Harding (2015) argued that a feminist objectivity, or strong objectivity, recognizes situated knowledges as advanced by Haraway (1991), acknowledging that “no one can attain the ‘view from nowhere’...’the God Trick.’ But finding or creating even just a little distance from prevailing assumptions and interests can be sufficient to enable critical perspective to illuminate issues in new ways” (p. 35). Relatedly, strong objectivity requires that “the subject of knowledge [the scientist] be placed on the same critical, causal plane as the objects of knowledge. Thus, strong objectivity require what we can think of as ‘strong reflexivity’” (Harding, 1993, p. 69).

Harding (1993, 2015) also argued that strong objectivity should not work to eliminate all social and cultural values from research, as some of those values have advanced social justice agendas. For example, “Democracy-advancing values have

systematically generated less partial and distorted beliefs than others” and created more liberatory knowledge. In sum, Harding argued that strong objectivity is achieved when the researcher turns the critical eye on herself and recognizes her assumptions, values, and subjectivity that allow her only a partial, situated knowledge, not a universal knowledge that transcends culture and society.

Partial, situated, local, and fragmented knowledge is not only a hallmark of feminist research as described here, but also postmodernism; however, postmodernists and feminists do not converge so easily on all matters.

Postmodernism, feminism, and experience. The authority and authenticity of lived experience is perhaps one of the most contentious topics for postmodernism and feminism, as much feminist work is built on the lived experiences of women and other marginalized groups (e.g., standpoint theory), and postmodernism often appears to invalidate lived experience as an authoritative account of reality; however, some postmodern feminists have found ways to reconcile—or at least bring into conversation—the two divergent approaches (Alcoff, 1997; Butler, 1992; Flax, 1992; Scott, 1992; Singer, 1992; Stone-Mediatore, 2003; Visweswaran, 1994). Scott (1992) argued that experience should be “not the origin of our explanation, but that which we want to explain” (p. 38). According to her, experience is socially and discursively constructed and situated, and researchers should focus on those systems in which the experience was constructed and why and how the experience was constructed.

Alcoff (1997) also pointed out the clash between feminism's insistence or reliance on experience (phenomenology) and empiricism as valid bases of knowledge, versus postmodernism's denial of experience as absolute, valid, or unmediated truth

(postmodernism argues that experiences are always already discursively constructed). She reconciled this conflict by suggesting experience is “epistemically substantive but never epistemically self-sufficient” (p. 14). Therefore, postmodern feminist researchers should not dismiss experience as wholly invalid and meaningless, but be aware of what social forces were the impetus for how a person reconstructs and understands her or his experiences.

Alcoff (1997) also questioned how women can “justify the epistemological relevance of a researcher's gender identity if identity is only an ideological construction” according to postmodernism (p. 11). Butler and Scott (1992) responded to this question this by setting forth postmodernism not as a theory or “position,” but rather as a “critical interrogation of the exclusionary operations by which 'positions' are established” (p. xiv). In this reading of feminism and postmodernism, the latter becomes a diatetic stage, a kind of rhetorical agora through which feminists may conceive of, analyze, and manifest the political. Butler and Scott questioned the foundationalist and essentialist understandings of such concepts as reality, agency, experience, bodies, ethics, and politics. They proposed that postmodern feminists should ask the questions:

Through what differential and exclusionary means are such 'foundational' notions constituted? And how does a radical contestation of these 'foundations' expose the silent violence of these concepts as they have operated not merely to marginalize certain groups, but to erase and exclude them from the notion of 'community' altogether, indeed, to establish exclusion as the very precondition and possibility for 'community'? (p. xiv)

These questions have many implications for postmodern feminist research. For example, in selecting participants, data, methods, and research questions, in selecting research topics, and in analyzing data, researchers should be cognizant and critical of what modes of experience, knowledge, and understanding are being privileged and legitimized, and which experiences and knowledge are being excluded, silenced, or marginalized. As Alcoff explained, a postmodern stance “is defined not by its substantive content but by a process in which every discourse can be interrogated with regard to the systems of exclusions on which it must rely” (p. 12).

Scott (1992) summed up the postmodern conceptualization of experience as always already mediated and discursively constructed:

It is not individuals who have experience, but subjects who are constituted through experience. Experience in this definition then becomes not the origin of our explanation, not the authoritative (because seen or felt) evidence that grounds what is known, but rather that which we seek to explain, that about which knowledge is produced. (pp. 25-26)

Following this ideation of experience, it is important for postmodern researchers to consider the location of participants and their experiences within cultural and historical contexts and ask how those contexts may impact their responses. Adopting this perspective, postmodern researchers should not treat all gathered data as originating from a common, universal realm of understanding or experiences, but contextualize it.

Postmodern feminist methodologies remain critical of any assumption of truth. This is not to say that there is no truth, but that “there is an acknowledgement of how all theory is provisional, representing a perspective that needs to be exposed and its

construction understood” (Aranda, 2006, p. 137). Furthermore, postmodern feminist methodologies constantly question the modernist value of reason and understandings of the subject and experience. They attempt to understand the domination and subjugation of certain people and narratives (Aranda, 2006).

Aranda (2006) also emphasized the co-construction of meaning between participant and researcher, because data are not simply collected, “but generated through these research methods” (p. 139). Gorelick (1991) listed attributions of both the researcher and the participants that may affect data collection and analysis, and about which researchers should be aware: “the researcher brings her social location, culture, motivations, limitations, ignorances, skills, education, resource, familiarity with theory and methodology, the trained incapacities of socialization in dominant institutions, and an outside perspective that may be useful as well as troublesome” (p. 469). Therefore, it is important to remain self-reflexive as a researcher generating and interpreting data and experiences and to consider how one's preexisting knowledge, experiences, and understanding can and do affect the research.

However, some scholars argue that feminist research has more political implications than postmodern research; postmodern research tends to lean toward the theoretical, while feminist research often takes a more activist stance (Alcoff, 1997). In her analysis of postmodern feminist politics, Alcoff (1997) argued that, while postmodernism opens up a discursive space for political talk, it does not regularly offer suggestions or solutions for social problems. Postmodernism points to the need for critical political thought, and it opens a space to talk about politics, but it does not offer a plan of action: “this strategy of the opening or the pointing gesture, while sometimes

effective in making a space *for* politics, is not wholly satisfying *as* politics” (Alcoff, 1997, p. 8). Despite this, Alcoff argued that postmodern research's doubt about universal foundationalism, experience, and metaphysics facilitates an important discussion about how power and privileged knowledge affects what scientists perceive and portray as truth.

(Postmodern) Feminist standpoints. Several critics of strong objectivity and standpoint theory epistemologies have spoken up since their inceptions, both within and outside of feminism, and from postmodern and modern camps, the latter including defenders of Enlightenment values and positivistic empiricism and rationality (Harding, 2015). Harding argued that the fact that strong objectivity—as part of a standpoint epistemological and methodological approach to science—has sustained both prolonged postmodern and modern attacks points to its distinction as “doing something different from the principles of both camps” (p. 43). She explained that, while postmodern critics have accused strong objectivity and standpoint theory of being too grounded in material experiences and furthering modernist or Enlightenment values of science, standpoint projects “advance Enlightenment goals as these makes sense for our world today” (p. 43). Harding ultimately concluded: “[D]iscussions of whether standpoint theory and its strong objectivity are too modern or too postmodern tend to be mainly confusing in the view of this observer” (p. 43).

However, not all authors have declined to comment on the modernity or postmodernity of strong objectivity and standpoint methodology or epistemology. For example, Postmodern feminists have accused Hartstock’s original standpoint theory as making universal truth-claims built on the assumed universal and naturalized experiences

of women-as-unified-category, effectively replacing one dominant hegemonic way of knowing (men's) with another (women's) (e.g., Flax, 1990, Fraser & Nicholson, 1990, Heckman, 1990). Not all feminists have agreed, however, that a feminist standpoint (or standpoints, plural) is incompatible with postmodern values of fragmented and destabilized, decentralized knowledge and truth. Nancy Hirschmann (2004), for instance, argued that, Hartstock's seminal influential feminist theory of subjugated standpoint knowledge was indeed postmodern in many ways, and can be adapted to postmodern causes in even more ways if we move beyond totalizing notions that feminist standpoint methodology absolutely captures a whole and stable standpoint constituted of universal experiences of all women. Hirschmann eloquently explained:

As a way of seeing the world, redefining knowledge, reconceptualizing social relations, and renaming experience, standpoint theory provides a powerful methodology for understanding “reality as an ongoing process. That is, the adoption of a particular feminist standpoint allows us to gain a “less partial and perverse” understanding of the world; but that does not mean we have achieved “truth.” (p. 322).

In sum, while there are certainly “un”-postmodern impulses of feminist standpoint theory and strong objectivity as depicted by many feminist and postmodernists (and in this section), I align with feminists such as Hirschmann and Harding, seeing feminist standpoints and strong objectivity and postmodernism as not necessarily at odds but rather in play in larger projects that seek to understand “reality”—including “objective” reality supposedly “discovered” under rubrics of rigorous (dominant) scientific research—not as absolute “truth,” but as experiences both constituting and constituted by

collective subjectivities and everyday lives of both subjugated and dominant (unfixed) groups.

Maternal and caring standpoints. A particular standpoint that emerged for me during the course of this project (as a theory from the literature, and from my experiences as an actual “lived” standpoint) was a maternal standpoint, prominently theorized by Sarah Ruddick (1980, 1989) in her influential volume *Maternal Thinking* written relatively proximately to Hartstock’s (1984) theory of feminist standpoints that became popular fodder for feminist scholarship. Underpinning a maternal standing is Ruddick’s (1980) belief that, “Maternal thought does...exist for all women in a radically different way than for men” (p. 346). While I might take issue with the absolute nature of that claim—I cannot speak for men, but I do think there are women, mothers, who do not necessarily experience maternal thought or connections to motherhood that Ruddick is describing—I do generally agree with the idea that there are particular experiences of motherhood for many women that distinguishes it from general parenthood or guardianship of other types of guardianship. As well, it is important to note that I do not narrowly define “mothers” or “motherhood” as applying only to biological mothers or to every biological mother, but rather to those who identify as mothers and in whatever capacity perform the caring roles and routines of motherhood as I have depicted them throughout this work.

Ruddick (1980) more specifically defined her notion of “maternal thinking”:
Maternal practice responds to the historical reality of a biological child in a particular social world. The agents of maternal practice, acting in response to the demands of their children, acquire a conceptual scheme—a vocabulary and logic

of connections—through which they order and express the facts and values of their practice. In judgments and self-reflections, they refine and concretize this scheme. Intellectual activities are distinguishable, but not separable from disciplines of feeling. There is a unity of reflection, judgment, and emotion. It is this unity I call “maternal thinking.” (p. 348)

Ruddick’s (1980, 2004) emphasis on the intellectual work (grounded in material conditions of care work) and distinction of maternal thinking is important, and an aspect of motherhood that she argues is not valued or even acknowledged in most of society.

Another aspect of maternal thought Ruddick (2004) focused on as distinctive among acts of caring and a major constituent of the maternal feminist standpoint was preservative love, or “the ongoing intellectual-practical acts of seeing children as vulnerable and responding to that vulnerability with a determination to protect rather than to abandon or assault” (p. 165).¹⁰ In a similar vein, Little (1995) wrote about the caring and affective dimensions of knowledge that strengthen moral epistemologies or ways of knowing, making them more objective in a feminist sense of the term. While Little acknowledged that affects, emotions, passions, and attachments can in some ways and in some cases eclipse “the wise person’s epistemic repertoire” (p. 118), she also argued that such attachments and interconnectedness can improve our vision and ways of knowing in feminist inquiry: “Distance does not always clarify. Sometimes truth is better revealed, the landscape more clearly seen, from a position that has been called ‘loving perception’ or ‘sympathetic thinking’” (p. 118). She continued to highlight the roles of both care—

¹⁰ I do not argue that this maternal impulse to protect one’s children is not an essential or innate instinct—I want to underscore the point again that I do not want to essentialize or naturalize motherhood here for all women and mothers, but rather describe a role, standpoint, set of routines and material circumstances and ways of knowing that inform maternal thinking as portrayed here and by Ruddick.

grounded in interconnectivity and vulnerability, and including care inherent in maternal standpoints—and affect in research and constructions of knowledge: “For affect, it turns out, is crucial to moral knowledge,” and “possessing appropriate affect turns out to be a necessary precondition for seeing the moral landscape. This need not render morality some second poor cousin to science, for affect may be revealing of truth” (p. 133). Thus, Little described how embracing care-based affect can further fairness, objectivity (in a strong objectivity sense), and morality and ethics in research that produces knowledge.

While Ruddick’s (2004) writing on maternal thinking was largely situated in the politics of peace in the face of increasing militarism, war, and violence, I argue that it is more widely applicable to other political arenas and issues. And I want to be clear that I do not want to equate the various plights of mothers involved in the vaccine debate—particularly emotional and physical suffering that comes from (fear of, perceived or actual) social stigma, discrimination, and incidents of VPDs and VAEs—with the suffering of victims of war (including mothers whose sons and daughters have been enlisted in wars), and I do not mean to depoliticize or decontextualize Ruddick’s ideas about maternal thinking as a feminist standpoint, I do see its relevance in the vaccine context and its potential to open new and more sensitive ways of understanding how mothers are impacted by childhood vaccines and the vaccine debate. I will elaborate on this further in the final chapter.

Maternal thinking about vaccine risks. One arguably essential facet of motherhood (at least as motherhood is constructed normatively in Western discourses) is “having” and being primarily responsible for the care of *children*. While caring for children, including protecting and providing sustenance for them, is not the sole domain

of mothers, Ruddick (1980, 2004) argued that mothering or motherhood carries with it a particular set of experiences that sets it apart from general parenting. The following paragraphs will discuss Casiday's (2007) and Brown's (2011) propositions of how making risk-laden decisions on behalf of children fundamentally changes how risks are perceived and acted on by those caring for children, a topic very relevant to the decisions parents and mothers in particular make on behalf of their children regarding vaccines.

Children at risk. Casiday (2007), for one, wrote about the unique dimensions of risk perception attached to parenthood (and by implication, motherhood) via responsibility for making decisions on behalf of children. Specifically, Casiday focused her study on the MMR-autism controversy in the UK in light of social theories about risk. Casiday's paper presented perspectives from parents who occupied a range of subject positions: parents who actively sought out the MMR vaccine for their children, those who passively accepted it, those who actively resisted it, and those undecided. She analyzed data using three risk theory lenses: anthropological, sociological, and psychometric. Casiday concluded that "debates about *children's* risk may need special theoretical consideration," and "Selecting between potential competing risks, making risk judgments on behalf of others, and tensions between private and public good (in the issue of 'herd immunity')" represent theoretical gaps in extant literature about risk and vaccines.

Reviewing literature about risk and the MMR vaccine from divergent theoretical lenses, Casiday (2007) explained that culture-centered anthropological studies on the issue indicate that parental decision-making involved "personal and family histories, birth experiences and related feelings of control, personal assessments of their children's health and vulnerabilities, engagement with health services and conversations within

social networks” (p. 1061). Proponents of this perspective argue that perceptions of and decisions about vaccines cannot be understood outside of the context of relationships, interactions, and the institutional and cultural contexts in which they are situated.

One dynamic that Casiday (2007) presented as influential in parents’ understandings of risks associated with vaccines was *decision-making on behalf of children*: “The choice that parents were making would have important consequences for their children, unable to decide for themselves. So getting this decision ‘right’ came to symbolise what it means to be a good parent” (p. 1065). Casiday explained that the difficulty in choosing whether to opt in or out of the MMR vaccine presented the complex problem of parents having to determine what exactly made some children susceptible to adverse reactions to MMR while others could receive it without complication. While parents seemed to understand that only a small minority of children who received the MMR vaccine had complications, they were at the same time uncertain what factors had predisposed those children to complications, and whether those factors would affect their own children. Further, some parents believed environmental and biological factors were in play that also made their children more or less vulnerable to contracting measles, mumps, and/or rubella (against which the vaccine is meant to protect), creating greater or lesser needs in some children to receive the MMR vaccine. Thus, parents had to weigh possible risks of vaccinating for MMR against the risks of not vaccinating, all of which are laden with many levels of uncertainty and ambiguity in evidence and information available to parents—and all of this in light of the fact that their decisions could ultimately, permanently alter the well-being of their children (and thus, for some, reflect their fitness as parents) (Casiday, 2007).

To further muddy the vaccine waters, parents in Casiday's (2007) study sometimes felt they had to choose between the health of their own individual children and the well-being of the community: If parents believed the MMR vaccine put their children at risk for autism or other complications, they had to make a decision about whether their children should assume that risk in order to protect others from infections preventable by the vaccine. Relatedly, they also had to weigh the risks of choosing the MMR vaccine for their children against the risks of social stigma and guilt associated with not vaccinating their children (Casiday, 2007). In short, "For parents making decisions amidst this [MMR] controversy, risk encompasses more than the relative probabilities of a child falling ill from measles or suffering autism as a result of vaccination" (Casiday, 2007, p. 1067)—it encompasses other health risks, social risks, and the tensions created by making decisions on behalf of dependent children and by the interplay between individual and collective rights. The following study by Brown (2011) also looked at risk in complex cultural contexts, this time in the United States.

Redundant risks of parents' vaccine choices. Along the same lines, Brown (2011) studied the role of parenthood in risk perceptions of MMR related to autism in the United States, especially pertaining to parents' feelings of fear and safety. She defined safety as twofold: (a) "the sense that one is protected from illness and disorders" and (b) "the sense that one's position as a citizen within a democratic society is secure" (p. 142). Following her twofold definition of safety, Brown explained how fear about vaccines also manifested in two processes: "First, a medical technology often credited with making society 'safe' from diseases becomes an object of anxiety and skepticism" (p. 142). The anxiety and skepticism draw media attention and defensive reactions by

officials from, for example, the CDC and AAP that operate to increase public fears surrounding vaccine risks. Simultaneously, fear about drops in vaccine rates and resultant increased risks of VPDs raises among more pro-vaccine groups (Brown, 2011). As depicted by Brown, the risks associated with vaccinating *and not* vaccinating are complex and manifold—and not limited to concerns about the safety or efficacy of vaccines themselves. Brown explained that parents also experience vaccine-related fear and anxiety concerning tensions between individual and community well-being, ideations of political and medical autonomy, responsible citizenship and parenthood, and stigma and backlash.

Brown (2011) explained the character of risk in the vaccine debate as “*damned if you do*”—choosing to vaccinate children may put them at risk for autism or other unknown and scary health problems caused by vaccines (at least according to many parents and vaccine vocals), not to mention risking enabling a tyrannical government—and “*damned if you don’t*”—choosing *not* to vaccinate children puts them at risk of catching the diseases they could have been vaccinated against, spreading those diseases to other children, and being stigmatized and discriminated against for not being vaccinated. Thus, there is no “out”: vaccinate (and put your children’s and societies well-being at risk), or don’t (and put your children’s and society’s well-being at risk). Brown (2011) called these types of risk situations—in which “it is possible to perceive all available courses of action as potentially hazardous”—*redundant*, “precisely because of its connotation of repetition: we are faced with surplus risks, which may lead us to become anxious, cynical, or frozen with indecision” (p. 143). However, each decision for parents or mothers is not *equally* risky. Thus, because parents are faced with such an

inescapably risky decision, and because they receive conflicting information about vaccines from so many (“official” and “unofficial”) sources of different caliber and with different (perceived) stakes in the debate, parents are faced with independently weighing the confusing information to choose the best (least risky) choice for their children.

To complicate matters further, “even if the individual’s choice turns out to be harmless, he or she is likely to feel anxiety, hopelessness, and doubt; there are no completely pleasant or satisfying decisions” (Brown, 2011, p. 143). In addition, there is much emphasis on *individual responsibility* attached to redundant risk decisions: The choice to vaccinate or not to vaccinate becomes more fraught because it pits *individual* against *community management of risk* (Brown, 2011). Brown (2011) explained that perceptions of redundant risks are often manipulated by one side of the debate by framing the other side as exceedingly risky while rhetorically neutralizing any risk attached to their own positions.

“Rational parenting” and infants as “social bundles.” Brownlie and Leith (2011) wrote about how parents, especially mothers, perceive vaccine risks and make general decisions that impact their children using several complex and interrelated lenses to understand the infant body—constructed and conceptualized in manifold ways which overlap with normative and lived relationships to state and social-cultural institutions and ideologies of “responsible motherhood” and “rational parenting.” Recapitulating what others have argued before, Brownlie and Leith wrote that, for the most part, mothers are the subjects who are more or less publicly “judged on their infants’ physical and mental well-being, and judgment [sic] with shores up...the ‘norm of responsible parenting’: the need to always act, and be seen to be acting, in the best interests of the child” (p. 199).

However, despite the arguably undue burden of responsibility placed on mothers to preserve their children's wholeness and well-being, the state (in the sense of political and dominant scientific-medical bodies of authority that participate in mandating health preventions and interventions, especially for children under the age of five)—via, for instance, mandatory vaccine policies—routinely usurps or interferes with mothers' autonomy to make informed decisions on behalf of their children and infants (Brownlie & Leith, 2011).

State intervention in healthcare for infants in children in matters such as vaccinations is categorically justified because vaccination can be seen as a communal, civic responsibility and public health matter (Brownlie & Leith, 2011). Still, tensions are ever present between, on the one hand, individual civil rights of freedom, autonomy, and choice (not just in America, but also in similarly Western democratic states such as the UK, Australia, and Canada), and communal well-being and responsibilities of citizenship on the other hand (Brown, 2011; Brownlie & Leith, 2011). Negotiating these tensions have been tenuous, at times even traumatic, for parents, especially mothers, especially considering the different standpoints, everyday experiences, knowledges, vocabularies, standards of evidence and care, and sociocultural positions generally embodied by mothers versus state and “official/expert” actors.

One particularly, strikingly violent yet ironically routine example of how mothers register the practice of childhood vaccines wholly differently than the (albeit disembodied) state and medical authorities that produce and mandate those vaccines—*and* the social scientists (e.g., communication scholars) who study vaccine issues but are not at the same time intimately involved in them—was depicted by Brownlie and Leith

(2011): “[A]s social scientists we have often shied away from what happens under the skin [i.e., vaccine injections]. Parents facing decisions about immunizations, however, do not have the choice to avert their gaze, metaphorically, and in some cases, literally” (p. 201). In other words, parents—but most often mothers, who regularly end up with the jobs (literally) of taking their infants and children to the doctor’s office to “get their shots”—are also necessarily tasked with holding down their babies’ legs and/or arms while the nurse or doctor administers the shots (and the child wails in pain, even if only for a few seconds). This very primal and embodied experience for mothers and parents has been described as “heartbreaking,” “painful,” and even “traumatic” (Brownlie & Leith, 2011)—anything but “objective.”

Further, and probably because of the very intimate and embodied relationship (normative constructions of) mothers and parents have with their children, “parents often hold radically different understandings from professionals about body interiors, particularly in relation to the nature of the immune system” (Brownlie & Leith, 2011, p. 201). To elaborate further, according to Brownlie and Leith (2011), the state and pharmaceutical and medical community actors involved in producing, regulating, marketing, and mandating vaccines for children—more often than not, men—conceptualize vaccines as a kind of intervention in infants’ bodies that enhances or *educates* (improves) their natural immune systems. However, “Unlike the state definition of immunity which is based on educating the immune system, some parents believed that their children would be better off if their immune systems were allowed to develop naturally” (p. 205).

Mothers and vaccine movements. Another area related to mothers that has fundamentally changed the vaccine debate in the past half century stemmed in part from the second wave feminist movement in the US, particularly the “women’s health movement” (Conis, 2013). According to Conis (2013), US feminist activism in the mid- and late-20th century spawned impulses among women (albeit relatively privileged and Western women with the access and resources to do so) to begin to assert medical autonomy and question advice and regulations handed down by science and medical “authorities”: “The women’s health movement... strove to democratize women’s health-related knowledge and wrest control of women’s health issues from the predominantly male medical profession” (Conis, 2013, p. 418). At the same time of the women’s health movement that grew from second wave feminism—and in fact for decades prior to it—the pro-vaccine movement on the part of health and government officials in the US appropriated a certain discourse of motherhood that appointed moms as leaders (among the general public) in not only securing vaccinations for their own children, but also disseminating pro-vaccine sentiment among other moms and the broader population (Conis, 2013). For example, in America in the 1940s and 1950s, the March of Dimes—which was founded by then-President Franklin Roosevelt in 1938 as an organization to raise awareness and funds for polio victims and polio prevention efforts, including vaccination—was made successful largely by tens of thousands of women volunteers:

It was the foundation’s countless women volunteers who raised money for polio treatment and vaccine research and helped carry out vaccine field trials in the 1940s and 1950s, imprinting upon American memory the legendary image of mothers marching en masse, collection cans in hand. (Conis, 2013, p. 411)

Women's and mothers' participation and influence in the vaccine movements of the 20th century far exceeded their roles as volunteers in the March of Dimes, as many state-sponsored vaccine campaigns similarly relied not only on women's and mothers' labor as volunteers (spreading the pro-vaccine word), but also primary moral caregivers of children who were to be vaccinated. According to Conis, the moral imperative of 20th century motherhood created a twofold responsibility for mothers regarding vaccinations:

For health officials and politicians promoting vaccinations in the 1970s, mothers were often viewed as a ready resource already dedicated to the cause of protecting their children. On the other hand, when children went unvaccinated, mothers were often held culpable and labeled thoughtless, uneducated, and irresponsible.

(Conis, 2013, p. 412)

In other words, similar to the redundant risk of vaccines as described by Brown (2011) above, mothers also faced a kind of redundant responsibility when it came to vaccines: State officials exploited mothers to promote vaccination, and when that failed, mothers were held to blame.

Arguably these impulses have not changed much, at least the latter (holding mothers responsible—or irresponsible—for individual and collective vaccination choices and practices). In these ways—discourses of both mothers as collective vaccine advocates and mothers as individually responsible for vaccinating their children—the vaccine debate, at least in the US, has been undeniably gendered (Conis, 2013). Those discourses also represent a persistent stratification in the historic pro-vaccine movement in that women and mothers have provided the (literal) manual labor of achieving certain vaccine

rates and goals, whereas government, science, and medical officials (predominantly men) have been the sources of intellectual labor and “official” knowledge regarding vaccines.

In addition to motherhood, another significant facet of the present vaccine debate is its relatively recent migration to the Internet, particularly Web 2.0 (marked largely by user-generated content and sharing of information), which the next section will elaborate in detail.

Risk and Affect in the Vaccine Debate

To reiterate from earlier, the vaccine debate is old (albeit evolved)—but the Internet is new, and many pro-vaccine authorities are alarmed by the rapid proliferation of anti-vaccine rhetoric online. Predictably, vaccine proponents call anti-vaccine discourses on the Internet misleading, harmful, sensational, and plain wrong. Bean (2011), for example, lamented: “As a new source of information, the Internet is as indiscriminate as were the earliest medieval broadsheets, and anything can be published by anyone willing to take the time to launch a website” (p. 1875). Expanding the discussion beyond the questionably veracity of information widely available on the Internet, it is also important to take a closer look at the cultures of incivility and antagonism, even violent speech, that can pervade and disrupt many online spaces often created for purposes of deliberation and community (Anderson, Brossard, Scheufele, Xenos, & Ladwig, 2014; Cammaert, 2007, 2008; Papacharissi, 2004).

Incivility and antagonism in online vaccine debates. Anderson et al. (2014) claimed: “Discussions on the Internet can take an uncivil route, with offensive comments or replies impeding the democratic ideal of healthy, heated discussion” (p. 373) (See also Papacharissi, 2004). They characterized incivility as ranging from “unrelated, rude

critiques and name-calling...to outrageous claims and incensed discussion” (p. 375).

While these statements assumes certain normative modes of discussion and constructions of what is “civil” or not, generally speaking, they reflect the sentiments expressed by countless other scholars and users of the Internet. Further, Anderson et al. concluded that incivility in online discussions influences risk perceptions, especially when readers are predisposed to align with a certain position on the topic discussed—even if the original post was “neutral” in nature—commonly acting to polarize the debate and its participants even further than they started, especially as incivility as an affective force can lead readers to make certain affective heuristics more primary in forming judgments on the issue at hand (as opposed to more balanced approaches to weighing objective information against affective, *uncivil* discourses). Thus, incivility in user-to-user communication online can be distracting and perhaps more persuasive for some readers than dry informative, educational, and/or evidence-based content about, for example, vaccines. On the other hand, this hypothesis also opens the space for *civility* and its potentialities in online discursive spaces.

Similarly, Cammaerts (2007, 2008), drawing on the political philosophy of Chantal Mouffe, described the differences between antagonistic and agonistic online discourse, ultimately relating much antagonistic discourses online to hate speech and Judith Butler’s concept of *excitable* and *injurious speech*. In short, both agonistic and antagonistic speech are marked by “passion” (Mouffe, 1999, 2014) and even debate, but antagonistic speech has the distinction of originating from parties whose ideas may be irreconcilable and whose aims are not productive. On the other hand, agonism is another form of debate where, despite disagreement, the goals and rhetorical strategies and tactics

of participants are not inherently irreconcilable and instead have the potential (perhaps even the aims) to build some level of mutual understanding and learning between opposing parties (Cammaerts, 2007, 2008; Mouffe, 1999, 2014).

Antagonistic speakers play by different rules and logics, essentially on different playing fields, while agonistic communication is on the same playing field with roughly the same rules, boundaries, and norms of what may be called “civil” discourse. Cammaerts (2007) pointed out that normative concepts of democratic speech and what is acceptable in online discussions: “Inevitably also brings into questions cultural differences in relations to...how or to what extent a balance is struck between different rights, including respect for and recognition of difference and the right not to be discriminated against” (p. 138). Cammaerts (2007) concluded that the anonymity afforded by the Internet (in his case, in the context of political hate speech—perhaps more violent and extreme than many vaccine discussions, but still arguably applicable) enables “the deeply offensive and repulsive nature of many of the comments being made online and the context in which they were produced,” which in turn make it “difficult to remain neutral here; rational detachment is not an option. Such vitriolic discourses should make any democratic person angry” (p. 148). In the online vaccine debate, antagonism and incivility confound already-confusing issues, including the sheer amount of virtually unfiltered, often conflicting information from countless sources of varying credibility and rigor.

Thus, unsettling for many scholars are findings that parents of unvaccinated children are more likely to get their vaccine-related information from the Internet than those who did vaccinate, and according to Kata (2012), those parents are also less likely

to correctly assess accuracy of the information they found. One study found that over half of participants believed that vaccination websites they viewed were, on the whole, accurate, when 55 percent of the sites were in fact inaccurate, according to the study's criteria (Kortum, Edwards, & Richards-Kortum, 2008). The same study found that over half of the participants came away from the experience with what the authors classified as significant misconceptions about vaccinations. Many scholars who study the vaccine debate have latched onto the idea that the Internet has provided not only a new medium, but also new fodder for the vaccine struggle (e.g., Bean, 2011; Betsch, 2011; Betsch et al., 2010; Davies et al., 2002; Kata, 2010, 2012; Wolfe et al., 2002; Zimmerman et al., 2005). This section will review literature about the role the Internet has played in communication in general and the vaccine debate in particular.

Web 1.0 and the vaccine debate. Research into the online vaccine debate began over a decade ago, and several successive content analyses have built on each other, purportedly showing a steady growth in both anti-vaccination content on the web and health consumers' use of the Internet as a (credible) source for medical information. Many of those content analysis studies' purposes, methods, and findings overlapped and confirmed the prior studies' findings, so I will briefly synthesize and summarize the main points below before moving on to research about vaccine movements and Web 2.0.

Bean (2011), Davies et al. (2002), Kata (2012), Wolfe et al. (2002), and Zimmerman et al. (2005) conducted content analyses of online content of the anti-vaccine movement spanning roughly the first decade of this century. As a broad overview their findings, the most prominent and enduring themes they identified in online anti-vaccine discourses spoke to issues of safety, efficacy, and need for vaccines in present society,

especially in the Western world—though vaccine critics have also made efficacy arguments about, for example, how smallpox was in decline prior to and separate from the worldwide immunization campaign; rather, they claim that improved sanitation, hygiene, and science and medicine account for the eradication of smallpox. Attacks on safety of vaccines suggest that vaccination causes vaccine-adverse events (e.g., seizures, autism, or even giving the recipient the virus against which she or he was immunized), and that too many vaccines given too soon (e.g., to young infants whose immune systems are still developing) pose extra risks to safety. Skeptics also argue that VPDs are generally mild compared to potential VAEs associated with the respective vaccines, and furthermore that getting diseases naturally boosts immunity better than vaccines do. In fact, there have also been claims that vaccines *harm* the natural immune system rather than boost it. The politics of vaccine-critical movements tend to be libertarian (valuing freedom of individual choice and autonomy from state control) and antiestablishment (marked by distrust in state, “official,” and institutionalized power and agents). Alternative approaches proposed by vaccine critics that better promote health and wellness and increased immunity to disease are typically natural, homeopathic, and holistic health, diet, and lifestyle choices. Finally, common features of vaccine-critical online texts include affective and emotional appeals in the forms of words (e.g., “tiny, fragile babies”), images (e.g., pictures of infants being stabbed with needles and held down by doctors and parents), and information shared in narrative and anecdotal formats.

Web 2.0 and the vaccine debate. As the amount and types of anti-vaccine information online have grown bigger and more complex, recent research has also become more sophisticated. Adding to the list of content analyses above, later studies

have asked not only look at content, but also how anti-vaccine information is accessed and used to influence risk perceptions and health-related decisions of parents. The following literature represents recent examples of the synthesis of research on risk, affect, the vaccine debate, and the Internet.

Risk-as-feelings and the vaccine debate. Concerned about previous findings of the growing presence of anti-vaccination Internet content, Betsch et al. (2010) conducted an experiment to test whether even short-term exposure to a vaccine-critical website would influence risk perceptions and intentions to vaccinate. They took a feelings-as-risk approach and the affect heuristic model (see also Slovic & Peters, 2006) to understand the powerful influence of affective anti-vaccine website content such as rousing photos and personal narratives of children being harmed by vaccines. As such, they conceptualized *affect* as unspecified “good” or “bad” feelings (where *threat* would be a specified bad feeling), and *emotion* was understood as even more specific and identifiable (e.g., *fear*).

Betsch et al. (2010) noted that anti-vaccine websites use a particular communication method: case-based information with emotive appeals, through which underlying mechanisms impact visitors’ perceptions and decisions. One such mechanism was *vividness*, of which affect is one factor—and the factor that the study’s authors expected to play the largest role in influencing risk judgments. Their experiment revealed that viewers of the anti-vaccine site (when compared to the control site) found it to be more emotional, threatening, personal, and informative, and less scientific and rational.¹¹

Additionally, the affective nature of anti-vaccine content decreased participants’

¹¹ Both the anti-vaccine website and the control website Betsch et al. (2010) used were in German, and I was unable to read them.

intentions to vaccinate, and that visiting anti-vaccine websites decreased risk perception of *not* vaccinating. However, Betsch et al. also found that “perceived risk to vaccinate declined in light of vaccine-critical information when people were highly experienced, whereas the perceived risk of not-vaccinating increased. Thus, experience seems to moderate the influence of vaccine-critical information and helps to discount the acquired information” (p. 451).

Betsch et al. (2010) also found that affects—defined as good or bad feelings—experienced by website viewers, specifically threat, were more influenced by and influential of risk perception than specific or discrete emotions were (e.g., fear). They explained: “the vaccine-critical site seemed to elicit non-directed, unspecific affect of threatening nature...instead of creating fear of certain illnesses or events. Threat was significantly related to changes in perceived risk to vaccinate” (p. 452).

Psychology of the vaccine debate. Many researchers of vaccines and risk have used a psychological lens to understand how and why publics seek and use information found on the Internet and resultant impacts on health decisions. Betsch (2011) found that the accuracy of information readily available regarding vaccines on the Internet varied greatly and was partly dependent upon how users searched for the information. The more specific the search terms used (e.g., “MMR vaccine” rather than “vaccination”), the more “accurate” (and pro-vaccine) the results. Further, the more educated the searchers were about vaccines, and the more complex their knowledge was about them, the more they tended to use specific search terms. Thus, according to Betsch, those Internet users already knowledgeable about vaccines tend to find more accurate and more pro-vaccine information online—and vice versa. Incidentally, parents who already have more

advanced knowledge about vaccines are less likely to search for information about vaccines online: “This means that the people with less knowledge on the topic, who are more likely to conduct searches, will do so using less complex search terms which lead to more anti-vaccination websites” (p. 2). To complicate matters further, according to Kata (2012), those with less prior knowledge about vaccines and who search for information online are not only more likely to retrieve inaccurate (read: anti-) vaccine information—they are also less likely to accurately assess the information.

Internet users are often more compelled by information in the form of narratives, images, and other affective appeals than they are by dryly presented facts, figures, and numbers (Betsch, 2011; Kata, 2012; Nan & Madden, 2012). As Betsch (2011) explained, “The more narratives of vaccine-adverse events a person reads, and the more emotional these are, the greater the person perceives potential risks of vaccinating to be” (p. 4). In turn, increased perceptions of vaccine risks also influence intentions and choices to vaccinate. As such, it might seem logical that, if narratives and emotional appeals work so well in anti-vaccine rhetoric, they would be equally effective in pro-vaccine material. Indeed, many scholars have suggested doing just that (e.g., Adil, 2008; Bean, 2011; Davies et al., 2002; Zimmerman et al., 2005). Yet, that logic may be problematic. Betsch (2011) explained that recent research has shown that fear appeals do not work the same in pro-vaccine information as they do in anti-vaccine information.

The postmodern online vaccine debate. Kata (2012) added to foregoing research about anti-vaccine web content by taking into account new dimensions presented by Web 2.0 and a postmodern paradigm of healthcare. According to Kata, Web 2.0 is characterized by interactivity and user-generated content. A large part of Web 2.0 is

social media such as YouTube, Facebook, and Twitter. According to Kata, notable proportions of user-generated social media content can be categorized as anti-vaccine (or at least vaccine-critical). Kata described the postmodern medical paradigm as marking a power shift from doctors to patients, increasing challenges to legitimacy of science, and redefining the parameters of the “expert” and expert knowledge. According to Kata, the postmodern condition of health communication on Web 2.0 has enabled users to seek and share more medical information on their own (not only via physicians and health officials), empowering patients to be more active in their own healthcare and more skeptical of the status and role of doctors as experts knowledgeable beyond reproach. Another social effect the postmodern environment and Web 2.0 have is “‘flattening’ the truth”: “Web 2.0 places carefully scrutinized evidence next to the opinions of crusaders, critics, and conspiracy theorists, potentially weakening messages from qualified experts” (p. 3779). Together, Kata argued, the new conditions created by Web 2.0 and the postmodern healthcare paradigm have not only destabilized the position of the physician as primary medical advice giver, but they have also enabled anti-vaccine activists to spread their rhetoric and bolster their credibility as never before.

In sum, Web 2.0 and a postmodern healthcare model compound several problems for vaccine advocates: Internet users have access to endless pages of vaccine-critical information, much of which is of questionable accuracy and credibility (on all sides of the debate), and users who are most likely to consult that “less credible/incorrect” information—those users who are least sure about their stance on vaccinating—are purportedly least capable of assessing accuracy of information and credibility of sources (Kata, 2012). Adding to the confusion that stems from the incapacity or failure to assess

credibility of vaccine information is the sheer amount of information now available, which overwhelms even those parents who were confident in their positions on vaccines prior to researching online (Kata, 2012).

Kata (2012) conducted a qualitative analysis for “tactics” (actions used to spread messages) and “tropes” (themes or arguments) on anti-vaccine websites. Among several tactics identified, Kata also found *shifting hypotheses* to be common, exemplified by frequent shifts in theories used by vaccine critics about the link between autism and vaccines: “The vaccine–autism hypothesis has repeatedly shrunk—first vaccines themselves were a major cause of the ‘autism epidemic,’ then specific vaccine components led to autism misdiagnoses, and then vaccines exacerbated the condition only in rare cases” (p. 3782). Another tactic was *ensorship*. Kata cited many instances in which comments posted on forums of anti-vaccine websites were removed due to their pro-vaccine content. (To be clear, the same kind of censorship is pervasive on pro-vaccine sites as well.) Finally, *attacking the opposition*, such as through litigation, was a more extreme example of an anti-vaccination tactic.

In sum, while Kata’s (2012) study did not reveal new anti-vaccine content than what was identified in previous studies (or even pre-Internet), she indicated that the postmodern condition of Web 2.0 has transformed how information and knowledge are produced and consumed in ways that have catalyzed the anti-vaccine movement. In response, she encouraged pro-vaccinationists to *not* dismiss or ignore what might seem like silly and downright wrong arguments made by vaccine skeptics, but rather to regard them very seriously as posing very real health hazards. Further, as is a hallmark of the postmodern vaccine debate, Kata argued that “illogical” anti-vaccination rhetoric cannot

be simply corrected by throwing “objective” evidence and facts into the fire, and pro-vaccine information campaigns are not effective in persuading many vaccine skeptics; in fact, she claimed, some steadfast vaccine critics simply will not be swayed period. Thus, rather than relying exclusively on traditional public information and education campaigns, Kata urged pro-vaccine activists to understand and even use to their advantage the affective tactics and tropes used by anti-vaccinationists that do not adhere to the objective/rational/ evidence-based logics that underpin traditional science and health communication. She also implied that teaching Internet users *how* to think critically and assess the accuracy, logic, and credibility of information and sources online would help those users make more informed (i.e., for Kata, pro-vaccine) decisions.

Pro-vaccine bias. An additional observation is revealed in the foregoing review and synthesis of literature mapping the (online) vaccine debate—or the *anti*-vaccine movement: It is almost exclusively and explicitly from a pro-vaccine perspective. Therefore, the same critical attention given to anti-vaccine rhetoric online has not been shared with the online pro-vaccine movement, especially the communication emerging from non-“official/expert” sources but instead from other members of “lay” publics such as parents, and especially mothers. In other words, there is a large gap in vaccine debate literature in the area of analysis or interrogation of pro-vaccine rhetoric, especially among non-“Official”/non-expert publics (e.g., most parents). The implications of this this gap in mainstream vaccine debate research will be explored in more detail in chapter five, but first I will wrap up this chapter with brief recaps and syntheses of the literature reviewed so far, making clear how they speak to the four research questions that guided this study.

Conclusion and Research Questions

To reiterate, public relations and risk communication (as a sub-field of the former) (Palenchar & Heath, 2002) cannot be divorced from affect, as affect plays a central role in how publics perceive and react to risks. The intent of this chapter was to overview literature in public relations, risk, and affect theory and situate those distinct and overlapping bodies of knowledge in relation to the childhood vaccine debate, as relevant to my study's purpose and research questions. Below, I will discuss my research questions situated in these areas of literature, but first a note about how my research questions developed over the course of this project is useful.

I started out with a project that looked at the context of the *online* vaccine debate, and as such, while my research questions were largely the same as the three below, they asked specifically about the “online vaccine debate” (for a list of the original research questions, see the Interview Protocol in Appendix A). However, after a number of recruitment and logistical issues that will be discussed in more detail in chapter three, the focus shifted away from the Internet as a particular time and place for the vaccine debate. In fact, I quickly realized that the Internet is so embedded in the vaccine debate and vice versa, at least for the population from which my participants came, that it would be difficult to isolate any facets of the vaccine debate that existed solely *offline*, completely apart from any aspect of Internet research, discussion, or influence. At the same time, as I was beginning to collect data and review more literature related to the vaccine debate and its participants, another angle became much more prominent than I anticipated: the particular roles that *mothers* and *motherhood* play in terms of mothers' influence on the vaccine debate and vice versa. Because these events—the online context taking a backseat as mothers came to the forefront in my data—unfolded gradually and emerged

holistically over the course of the project, I ultimately made the decision to change my research questions, removing “online” and adding “mothers,” at the end of the study to better reflect the data and conclusions. I also chose to drop one initial research question that asked specifically about online sources of vaccine information sought by mothers, as it did not add to the findings or conclusions considering the turn away from the online context.

Further, thanks to the inductive nature of my data analysis informed by grounded theory (Glaser & Strauss, 1967), I was able to identify several emergent themes that were not directly related to my initial research questions, nor were they covered in my literature review as previously designed: Body politics, biopower/biopolitics, postmodern assemblages (which specifically correspond to RQ1); topics related to maternal thought and motherhood, care, and compassion (prompted by increased focus on mothers and motherhood in findings, and also elaborated on in chapter three); and feminist critiques of dominant science and suppression of dissent (to be discussed further in the final chapter) were areas of literature that I reviewed in tandem with analyzing and collecting data and added to this chapter after data collection and analysis largely concluded .

Embodying feminist affect theory. Matter-of-fact and simply probabilistic information campaigns from scientists and public health officials have been underwhelming against many strategies deployed in the anti-vaccine and pro-choice movements, and researchers have spent countless resources attempting to explain why (Casiday, 2007). Some mainstream research in communication has begun to address the phenomenon of affective appeals in the vaccine debate and more generally. Affect, as a counterpart or complement to reason and objective logic and science, has taken center

stage in risk and health communication research that asks, for example, how feelings such as dread, fear, and anger influence risk perceptions and decision-making (e.g., Adil, 2008; Bean, 2011; Betsch et al., 2010; Covey, 2011; Davies et al., 2002; Finucane et al., 2000; Kata, 2010, 2012; Slovic & Peters, 2006; Spier, 2002; Wolfe et al., 2002). These researchers have taken several different approaches to understanding how lay publics perceive and act on risks, risk and health communication, and vaccines in particular—psychological and psychometric perspectives (e.g., Betsch, 2011; Fischhoff et al., 2000; Serpell & Green, 2006; Spier, 2002), cultural and social theories (e.g., Aldoory, 2010; Beck, 1992; Casiday, 2007; Douglas, 1966; Douglas & Wildavsky, 1982; Leitch & Motion, 2010b), and even feminist (e.g., Brown, 2011) and postmodern (e.g., Kata, 2010, 2012). However, as in broader public relations research, gaps exist in risk communication research and in theory surrounding the vaccine debate—especially regarding the *pro*-vaccine movement—particularly in the area of affect as understood through a feminist lens.

Brown (2011) and Brownlie and Leith (2011) explained how the vaccine debate and vaccine risks may have particular significance and meaning for mothers, who are making choices that impact not only themselves but also their children. Conis (2013) added that the issue of childhood vaccination has historically been gendered, not only discourses that still circulate socially, but also the physical and emotional labor that has gone into sustaining the movements and making individual vaccine choices that have complicated risks attached for parents and children. These things (gender and children) considered, mothers' relationships to vaccines and vaccine risks may lead them to (at least in part) constitute unique publics in the vaccine debate.

Feminist affect theory as a theoretical framework for understanding publics, such as those organized around issues of public health and risk (e.g., the vaccine debate), can contribute to both knowledge about public of the vaccine debate—for this project, mothers—and to public relations theory and practice on a larger level by staging an intervention in and adding another perspective to traditionally reductive social scientific research about affect and emotions (Bertleson & Murphie, 2010), and by adding a nuanced and critical approach to understanding affect as a political force operating in publics and through bodies that can both bond and separate communities, give or suspend agency, and transform how publics produce and consume knowledge through communication (Cvetkovich, 2012; Ngai, 2007). Further, feminist affect theory resists pathologizing “ugly” feelings in individuals or publics and instead looks to society to locate the causes or sources of those feelings, asking how and if those bigger social problem can or should be fixed (Ahmed, 2010; Berlant, 2011; Cvetkovich, 2012; Ngai, 2007). Drawing more specifically from the areas of feminist affect theory described earlier in this chapter—“passionate” politics, Public Feelings, affective logics of threat, and affective ethics—incorporates the public nature of affect and the political nature of publics (Cvetkovich, 2012; Mouffe, 2014).

Thus, in sum, feminist affect theory may be well-positioned to help build knowledge in public relations theory and practice sensitive to publics’ complex affective and political dimensions, which can be usefully illustrated in the context of the vaccine debate. Because one purpose of this study is to explore feminist affect theory’s utility for building public relations theory and practice—especially understandings of publics—my first research question broadly asks:

RQ1: How is feminist affect theory embodied by mothers in the vaccine debate?

Again, this first research question aims to explore how specific concepts in feminist affect theory (also informed by queer and postmodern theories) are enacted and experienced in the vaccine debate among mothers, who (along with fathers and other caregivers of young children) are members of publics with particularly personal and affective connections to the issue of childhood vaccination. One example in this category of embodied affect theories concerns *body politics*, such as how mothers' and their children's bodies become sites of contestation and struggle over issues of political and medical autonomy and informed choice and consent regarding vaccination. Another example of embodied affect theory is *biopower* (also *biopolitics*) wielded by state and other institutionalized authority (e.g., biomedicine and evidence-based science) via control over knowledge and technologies—including vaccines themselves and vaccine and disease information. Biopower and biopolitics can be seen when access to those technologies and information is selectively given or withheld, allowing the state and powerful institutions control over individual bodies, whole populations, and life itself. Additionally, embodied feminist theories of affect are political and deal in both personal and public realms—Public Feelings, for example, which describe affects felt publicly that can operate to bond communities (e.g., pro-choice Facebook groups, crunchy moms, pro-vaccine activists, and mothers of children with autism) as well as give or suspend agency of those publics.

Affective facts. While public relations has not embraced feminist affect theory, the same can be said in reverse: Affect theorists have published little in the areas of public relations, risk, and vaccine communication (or at least they do not explicitly

situate themselves within those theoretical fields). One near exception, though, is Brian Massumi's (2010, 1993) work on how affective facts and affective logics are implicated in public constructions of threat. To summarize, affective logics and affective facts differ from objective facts and normative, rationalistic logics in that the former are not bound by the same rules and standards of objectivity and actuality (i.e., the physical world) as the latter; while affective facts and logics may be grounded in objective reality, they need not precisely correspond to objective reality. Rather, affective facts and logics are determined by *perceptions* of objective reality—and its future—accuracy notwithstanding (Massumi, 2010). This definition of affective facts and logics corresponds to definitions of risks as perceptual, socially constructed phenomena (e.g., Aldoory, 2010). However, extant research has not asked how perceived risks associated with vaccines—for example, the link between autism and MMR—exist as affective facts (which also support affective logics) in the vaccine debate.

Facts in dominant public relations and risk theory have been widely and implicitly assumed to be absolute, unambiguous, and corresponding to objective reality, as illustrated in this excerpt from Peters et al. (2006): “The provision of more subjective interpretations may be difficult and be resisted by health professionals who prefer to provide only ‘objective facts’” (p. S144). Further, “In health communications, the goal of communication efforts is often informed choice; decisions should be based on patients’ ‘accurate’ understanding of the facts and be consistent with patient values” (Peters et al., 2006, p. S140). Fischhoff et al. (2003) also wrote about facts:

facts that are easily understood if communicated properly and that are critical to managing widely reported risks. If citizens have not learned these facts, then our

risk communication processes have somehow failed to convey them in a salient, comprehensible, credible way. (p. 255)

These and countless more statements about facts and factual information convey the understanding of facts in dominant (social) science and communication literature as uncontested and taken for granted as ontologically correct statements and true information.

Yet, many scholars have asserted that simple dissemination of facts and factual information falls flat in swaying publics in the direction of pro-vaccination because they (facts) do not always tend to the affective drives of vaccine consumers. As Serpell and Green (2006) put it, there is a “belief that if people are provided with ‘*all the facts*’ about complex health issues, they will take the optimal decision by default,” but in actuality, “There is no evidence for this and no reason whatsoever to assume that it is true, at least when applied to well-publicised vaccines such as MMR” (p. 4044, emphasis added). However, it may be worthwhile to consider whether mainstream science and communicators have failed to consider the possibility and (for some) the legitimacy or even undeniability of *affective* facts (Massumi, 2010)—particularly since the field’s reliance thus far on *objective* facts and accompanying logics has not yielded findings useful enough to challenge the anti-vaccination movement in any meaningful way. Thus, the second research question guiding my study asks:

RQ2: How do mothers understand risks as affective facts in the vaccine debate (if at all)?

As explained in the above review, affective facts are particularly real and present in conditions of unbounded uncertainty and ambiguity about potential future threats.

Operating on the premise that future threats can be understood as similar to if not synonymous with cultural constructions of risk (e.g., Aldoory, 2010; Leitch & Motion, 2010b), this research question seeks to alternative understandings of how publics, such as parents in the vaccine debate, perceive certain knowledge to be factual, especially in a risk economy of so much uncertainty and ambiguity (Serpell & Green, 2006).

Affective logics. Another suspected complication in the childhood vaccine debate is the perceived inability of general or “lay” publics to critically assess the credibility, accuracy, and overall validity of health information, especially online (e.g., Betsch, 2011; Betsch et al., 2010; Covey, 2011; Heath & O’Hair, 2010; Slovic & Peters, 2006). Scholars have recently asked if Web 2.0 has exacerbated efforts of the pro-vaccine movement in the vaccine debate and bolstered credibility or influence of vaccine-critical rhetoric, or if Web 2.0 is merely another platform for the same old arguments (e.g., Bean, 2011; Betsch et al., 2010; Kata, 2010, 2012). Yet, much research about the vaccine debate has narrowly consisted of content analyses focused on familiar tropes and tactics of anti-vaccination discourses (e.g., Bean, 2011; Davies et al., 2002; Kata, 2010, 2012; Wolfe et al., 2002; Zimmerman et al., 2005). Inasmuch as the spotlight has largely been on the anti-vaccine movement online, little research has looked more comprehensively at the (affective) discourses and rhetorics that register as logics on other levels and from other corners of the debate to constitute the bigger struggle over vaccine facts, risks, and choices. Thus, the next research question will ask:

RQ3: What affective logics are used by mothers in the vaccine debate (if any)?

The third research question is designed to not only identify affective logics at work in the vaccine debate, but also reveal how affective logics can operate in publics in broader

contexts. Further, along with RQ2, this research question ideally introduces the concept of affective facts and affective logics as theorized in the feminist and postmodern affective turns (e.g., Massumi, 2010) to public relations research.

Sources of vaccine knowledge. The final research question guiding my inquiry is designed to elicit discussion about what sources of information and evidence mothers draw on to construct knowledge about vaccines. This question in part speaks to theories of trust and perceived source credibility, but without narrowly pre-defining what is “credible” or “valid” or “legitimate.” While much of the literature reviewed above has covered the presumed legitimacy or accuracy of some sources referenced by anti-vaccine websites and advocates (e.g., Bean, 2011; Kata, 2010), the ability of online information consumers to accurately assess technical and probabilistic information about vaccines and risks (e.g., Kata, 2012), and the persuasiveness of affective appeals over more objectively framed information (e.g., Betsch et al., 2010), this research question engages a different scope of inquiry about vaccine information sources:

RQ4: What are sources of knowledge for mothers in the vaccine debate?

Rather than comparing dual efficacy of affective versus objective/rationalistic/“dry” information, or competing merits of anti-vaccine versus pro-vaccine information—or making assumptions about what type of vaccine consumer is drawn to what type of source or information—RQ4 resists dichotomizing or categorizing, for example, online vaccine content and that published by “official/mainstream” versus “alternative” sources, and instead asks more broadly where parents look for information and evidence to construct vaccine knowledges—including evidence in the form of their own experiences and those of other moms related to vaccines. Further, RQ4 does not attempt to evaluate

the accuracy or legitimacy of said sources, evidence, and information or parents' ability to accurately interpret and assess them. Rather, it seeks to learn what sources are privileged by mothers for vaccine information, and what evidence they find valuable, helpful, accessible, informative, trustworthy, and credible—or not. This final research question will contribute to understanding how mothers consume and produce vaccine knowledge.

All of the above research questions are designed to address gaps in how affect has been theorized in public relations and risk and vaccine communication literature. The next chapter details the methods I will use—online multi-sited ethnography informed by postmodern feminist epistemology and ethics—and explains how they will be particularly helpful in answering my research questions and further addressing gaps in research about the vaccine debate, risk communication, and public relations.

Chapter 3: Methods

In my feminist study of the affective facts and logics of the vaccine debate among mothers, I used qualitative methods with critical and postmodern feminist methodology and epistemology. To collect data, I used participant observation of online discussions about vaccines and one-on-one interviews with mothers recruited through snowball sampling, all conducted online or on the phone. Data analysis was guided by grounded theory (Glaser & Strauss, 1967) but modified to account for extant knowledge about the vaccine debate, risk, and affect theory that informed some more deductive codes, categories, and themes. Interview participants included mothers with at least one child under the age of seven who in some way have engaged in the online discussions about childhood vaccines, either directly or through direct participation or observation (including “lurkers”), to seek or share information. This section goes into detail about and offers rationale for my choices in methods, methodology, and epistemology, including data collection and analysis procedures, interview participant recruitment and selection, reliability in qualitative research, validity measures taken, ethical implications, and critical self reflexivity.

Methods, Methodology, and Epistemology

According to Harding (1987), the concepts of method, methodology, and epistemology are frequently confused. Harding defined a method as “a technique for (or way of proceeding in) gathering evidence” (p. 2). So, qualitative methods include research techniques such as ethnography, observation, and one-on-one interviews. Methodology, on the other hand, is more philosophically oriented, “a theory and analysis of how research does or should proceed” (p. 3). So, rather than a data-gathering

technique, methodology is a meta-study of methods that “encompasses the choice of method, the implications surrounding that choice, and how those methods are used”

(King, 1994, p. 20). Finally, Harding described epistemology as,

a theory of knowledge. It answers questions about who can be a “knower” (can women?); what tests beliefs must pass in order to be legitimated as knowledge (only tests against men's experiences and observations?); what kinds of things can be known (can “subjective truths” count as knowledge?). (p. 3)

As reviewed in detail in chapter two, postmodern feminist research is constantly critical of modernist and Enlightenment values such as reason, truth, progress, and objectivity (Collins, 2000). I chose to use qualitative research methods and postmodern feminist methodologies and epistemologies to recognize as valid the ways of knowing, or knowledges, and truths of all participants involved, preserve room for ambiguity and free discussion, and to not limit my results by assigning data to deductive categories. More specifically, my research and choices of methods are informed by a feminist maternal standpoint (Ruddick, 1980, 2004) as well as commitments to strong objectivity and reflexivity (Harding, 1993, 2015) that acknowledge my own subjectivity and situated knowledge (Haraway, 1991) constituted by my social position as well as position on vaccines. (These concepts and theories are explained in detail the previous chapter.)

In sum, conceptually rigorous, critically reflexive, and materially grounded feminist postmodern and standpoint theories, epistemologies, and methodologies—particularly as informed by affect and a maternal standpoint—that I ascribe to most often align with qualitative methods, to which I will turn now.

Qualitative Methodology

I chose to use critical and qualitative methods because they speak to my research purpose and questions and lend themselves to postmodern feminist sensibilities and ethics. Qualitative methods allow for holistic approaches to data collection and analysis, flexibility, reflexivity, ambiguity, attention to difference, and socially situated research (Hesse-Biber & Leavy, 2011). According to Hesse-Biber and Leavy (2011), “Qualitative researchers are after...social meaning people attribute to their experiences, circumstances, and situations, as well as the meanings people embed into texts and other objects” (p. 4). Qualitative research is concerned with words, meanings, texts, while quantitative research uses more numerical data (Hesse-Biber & Leavy, 2011).

Oldfather and West (1994) used a metaphor aligning qualitative research with jazz music, both of which share the characteristics of flexibility, dynamism, participation, ambiguity, uncertainty, collaboration, freedom, unpredictability, improvisation, innovation, egalitarianism, and irreverence toward traditional conceptualizations of research/music. They eloquently described the analogy made between qualitative research and jazz:

As the deep structure of jazz guides the unfolding of the music, so the epistemological principles, socially constructed values, inquiry focus, and emerging findings guide the unfolding of qualitative research processes. As jazz is collaborative and interdependent, so are the dynamics of qualitative research. As each improvisation is unique, so are the contextually bound findings within each research setting... and the peculiar adaptive methodologies of each qualitative inquiry. (p. 22)

For many of these reasons—the collaborative and socially situated nature of qualitative inquiry—qualitative research values easily align with postmodern feminist research values and epistemology (as described above).

Further, qualitative methods are useful for answering *how*, *why*, and *what* research questions (Hesse-Biber & Leavy, 2011). Thus, my research questions—*How is feminist affect theory embodied by mothers in the vaccine debate? How do mothers understand risks as affective facts in the vaccine debate (if at all)? What affective logics are used by mothers in the vaccine debate (if any)? What are sources of knowledge for mothers in the vaccine debate?*—also make a case for my choice of qualitative methodology, along with the specific research methods I used: online multisited ethnography, including online participant observation and one-on-one in-depth interviews. The next section will elaborate these choices and the procedures I engaged for each method.

Multisited online ethnography. Gatson (2011) wrote about the relatively new method (or collection of methods) that is the online ethnography, paying special attention to how the Internet-as-site(s) (where research is performed) has transformed (or not) discussions of ethics typically had around traditional ethnographic research. She described and compared and contrasted traditional ethnographic methods with online ones. In a multisited ethnography, she explained, “the goal is to situate contexts within a dialogue between theory and the field, and the micro mundane world to the macro systems that structure those worlds” (p. 514). By comparison, a researcher engages in *online multisited ethnography* “by either exploring more than one online site, by including both online and offline sites, or building a multilayered narrative that develops the larger social context of a community under study” (p. 514). My research study

fulfilled these criteria of online multisited ethnography: I explored more than one online site where the childhood vaccine debate occurs, included both online and offline sites, and built a complex narrative developing the larger social context of the online childhood vaccine debate.

While I originally intended to also use discourse analysis¹² as a method to evaluate even more online sites of the vaccine debate (e.g., pro- or anti-vaccine advocacy websites, blogs, and social media content), discourse analysis did not evolve as a “formal” method and was not as prominent or systematic as the participant observation and interviews. However, my research was still ultimately informed by the subversive and (poststructural) deconstructive impulses of discourse analysis, especially as I critically examined many of the more prominent or “standout” sources of vaccine information referenced by participants in interviews and online discussions (for a sample list of those sources I consulted and analyzed, see Appendix B). Still, this manner of critical analysis of vaccine texts online was more ancillary to the two main methods used for this project—online participant observation and interviews—and therefore the remainder of this chapter’s discussion of methods and procedure will focus mainly on those. This section will overview ethical implications associated with online multisited ethnography, as well as the methods I incorporated into my ethnography (participant observation and one-on-one interviews), including explanation of specific procedures and recruitment choices.

Ethics of online ethnography. Specifically concerned about ethics, Gatson (2011) asked how the Internet has altered power relations, boundaries drawn around identities

¹² See Fairclough (1992) and Hesse-Biber and Leavy (2011) for explanations of discourses and discourse analysis.

(e.g., researcher/participant) and field sites (e.g., from physical spaces to virtual ones), and notions of privacy and participation. She ultimately argued that, while the Internet has essentially changed some concepts and processes that are central to traditional ethnography, others remain the same, including the

basic sense of the mechanics of what it is that an ethnographer does (goes to a site, observes the location, the interactions, the boundaries, talks to or observes the inhabitants, records or transcribes all such observations and interactions reads one's transcriptions, observes or talks more, transcribes more, and finally prepares a narrative wherein theory emerges or is tested). (p. 515)

In contrast, what has changed, Gatson argued, are “the possibilities of the new *field*—in the sense of field site(s)—of online ethnography. The site of the online ethnography necessarily pushes the definitional boundaries of generally accepted concepts such as self, community, privacy, and text” (p. 515).

Gatson (2011) explained lurking in relation to what traditionally counts as participant observation and/or unobtrusive methods versus what counts as those methods online:

Lurking or reading online content *is* participant observation in a way that unobtrusive observation isn't in an offline ethnographic situation; if we're a reader of online spaces, we are already “in,” in a real way because most online content is read (interpreted), and not necessarily interacted with by adding the reader's own post. (p. 516)

This statement makes the assumption that lurking is active and counts as participation. In other words, just by the very act of entering an online space and reading the content, we

are participating in that online space. By this logic, online research I conducted during which I consciously crossed boundaries into an online discursive space or community was considered *participant observation* rather than mere unobtrusive observation.

However, Gatson also pointed out that it may be “*disguised* observation,” which is not also to say *deceptive* observation:

The contemporary publicly accessible website carries with it an expectation of being under some level and type of observation, and it is questionable whether anyone participating in such sites has a reasonable or defensible expectation of being unobserved, or indeed of being able to control the observers’ intentions or uses of such observation. (p. 516)

She continued,

The hegemonic bedrock of ethnographic ethics, however, involves both informed consent and an awareness of power differentials, both embedded in the historical excesses of human subjects research, as well as those of IRBs themselves. But, again, reading is its own form of interaction, and posting, submitting, and publishing one’s text online invites readership and an audience, if not a community. (p. 516)

Gatson ultimately argued that dominant ethical standards in place in institutional research today are either outmoded, 50-year old social scientific standards, or emerged from similarly obsolete biomedical standards of ethics (in the case of IRBs), most of which are not exceedingly appropriate for present-day online ethnographic research.

For example, it is difficult if not impossible to obtain informed consent from every participant in an online discussion forum, not least because the majority of

participants are probably lurkers (Gatson, 2011; see also Hesse-Biber & Leavy, 2011). However, Gatson proposed that informed consent is not necessarily required for ethical online ethnographic research. Continuing her argument from above that lurking constitutes participant observation in online research, Gatson mused:

But is it always participant observation for which one needs IRB permission to perform? When does reading become thinking become data gathering become data analysis? When is one a community member, a citizen, or a scholar? Does one need permission to read, or only to post or talk to others online? If, on the Internet, experience is already inscribed, already performed, and not in need of an ethnographer to validate it through scholarly revelation, we are again exposed as decision makers who arbitrate the definitions of the boundaries of appropriate interactions. (p. 516)

In this excerpt, Gatson reminds researchers of their ethical choices and obligations independent of IRB requirements. While IRB standards and safeguards are generally not without reason (even if they are sometimes inconvenient or not wholly applicable to specific research contexts), they cannot be said to be comprehensive—individual researchers must also make ethical, responsible choices about their own research that can often fall outside of IRB's purview.

This is especially true in cases such as online ethnographies, where institutional standards for ethical research have not yet caught up with real-world conditions of (Web-mediated) research (Gatson, 2011; Hesse-Biber & Leavy, 2011). For example, is it ethical for me to collect data in an online site (such as a discussion forum) without making my presence or identity as a researcher known to other participants? Hesse-Biber and Leavy

(2011) pointed out that the nature of online participation makes it logistically difficult or impossible for researchers to inform all participants of their presence—or to gain informed consent from all participants to participate in the research. As I already stated above, Gatson (2011) and others (e.g., Hesse-Biber and Leavy, 2011) have made the argument that online discussion forums are essentially public spaces, and reasonable expectation of privacy is lower (or at least more questionable) than in more private sites where traditional research sometimes takes place (e.g., behind the closed doors of a home, office, or private clubhouse).

Concerns about revealing or concealing researcher identity do not have only to do with deceptive research practices, but also with questions of power (if a participant does not know she is being observed, she has less power over what actions or words she allows the researcher to observe, and less power over how the researcher uses that information). Thus, (a) if we assume that participants in public online discussions post comments with the knowledge that they are doing so in public forums and without the same expectations of privacy that they would reasonably assume in private, offline settings (or even private online settings, where membership is restricted and privacy expectations and restrictions are made explicit)—and (b) taking into account that identifying information such as actual names, contact information, and photos are not used (or, if they are used, they are omitted from the data collection and/or presentation processes)—and (c) considering the logistical difficulties in announcing researcher presence to all participants in a forum anyway (as participants enter and leave the site at different times and read and ignore different posts), then (d) I would argue that we can

also assume that it is possible for a researcher-as-lurker to perform participant observation ethically without revealing her identity.

Beyond the ethics of online participant (lurker) observation, Gatson (2011) suggested ways that online ethnographers can attend to questions of ethics in actual online *interactions* apart from merely abiding by IRB rules, such as engaging with participants consistently throughout various data collection and analysis phases during the research project (i.e., using member checks), which includes creating accessible ways that participants can “talk back” to the researcher(s). As Gatson put it, “The talk-back made possible by the Internet takes us beyond the professional deconstruction of our ethnographic pasts” and into territory where our scholarly work is also held up to the scrutiny of research participants (p. 520). This process also strengthens what Kvale (1995) called *communicative validity* of qualitative research, which “involves testing the validity of knowledge claims in a dialogue” with not only other scholars, but also research participants and the general public (p. 30).

Creating conduits by which participants could “talk back” to me throughout the course of my research project not only took advantage of the ethical opportunities provided by the Internet as a research site and helped establish validity, it also aligned with my postmodern (Kvale, 1995) and feminist approaches to research ethics, in that facilitating talk-back helped approach transparency and heterarchy in research, as well as recognizing as valid the knowledge claims of participants. Thus, in my study of the vaccine debate, I performed member checks by way of inviting talk-back from interview participants whose words and ideas I used in my study, typically via email (for those participants who provided their email addresses) or, less often, via Facebook messages or

phone/text messages. However, because not all interview participants were reachable due to limited contact information I had for some, or because of delayed responsiveness from others (almost all interviewees were very busy, working mothers, and several told me they rarely checked their email, phone, or Facebook messages—and more than one indicated they were not interested or would not have time to read the final product when I offered to share my dissertation with them), I did not receive feedback from all participants whose data I included. As such, I attempted to include direct quotes and excerpts only from those participants who did respond to my invitations to “talk back” and agreed with my interpretations and usage of their words.

Participant observation in vaccine debate forums. According to Gatson (2011), online ethnographic research that entails being present in Internet forums where interaction among participants occurs can be defined as participant observation. I conducted participant observation in online public discussion forums where vaccine debates or discussions occurred, specifically the “community” spaces of websites related to pregnancy and parenting, including babycenter.com, whattoexpect.com, and thebump.com. I chose these forums because they were top Google results (searching for “pregnancy and parenting”), which parents and Web users in general are most likely to visit when searching for information online (Eysenbach & Kohler, 2002). I also chose these forums because they have “community” sections where users can create and participate in groups and discussions; thus, discussions are user-generated rather than created or prompted by the website designers or owners, as comments on a blog post would be. The websites are also tailored for users who are parents and, making them

more likely to be close to issues regarding childhood vaccines (as opposed to non-parents or parents of older children involved in the debate).

Further, because the websites and general community spaces on each of them are not specifically about vaccines, the discussions about vaccines attract participants (both posters and “lurkers”/readers) who range from very interested in vaccines to casually interested (e.g., users who happen upon vaccine discussions when they visit the communities or websites for other purposes, or just to browse categories). This distinguishes them from websites specifically about vaccines, because visitors of pro- or anti-vaccine websites (though those types of websites were included in my discourse analysis, detailed below) are more likely there because they were specifically seeking information about vaccines; furthermore, anti-vaccine websites likely attract anti-vaccine visitors, and vice versa, whereas parenting websites are likely to attract visitors with wider ranges of opinions, levels of knowledge, openness, and interests related to vaccines and purposes for visiting the sites. Thus, the women engaged in or reading the vaccine debate discussions on community areas of pregnancy and parenting sites may or may not have actively been seeking information about vaccinations to begin with, which represents how many parents find information about vaccines (unintentionally or tangentially).

In addition to parenting and pregnancy website community forums, I also searched for discussion about vaccines in comments sections on health-related sites to include in my participant observation, including WebMD, Kidshealth.org, MedLinePlus (a section of NIH.gov), and Mayo Center—all among top five results when searching for “children’s health” online (the other top five result was a website for a location-specific

medical center, which did not have a detectable community section and did not obviously attract or cater to parents outside of its geographical location). In some of those websites, I did not find community areas where users could independently create and join groups and discussions (e.g., MedLine, Mayo Center, Kishealth.org). WebMD did feature website- and user-created parenting communities/discussion forums, but those spaces were difficult to locate, impossible to search (the search tool came up with zero results for any term I entered, even ones that were contained in recent and past discussion and post titles and comments), and not very actively participated in—most discussions in all parenting forums on WebMD (e.g., WebMD’s own “Expert” parenting forum, which users could join, and user-generated forums such as “Parenting: 3–6 months old”) had fewer than five replies, many with zero. Therefore, because of the low active participation in parenting community members—or the lack of community spaces at all—on top health-specific websites, I did not include those forums in my participant observation data (though I did include some content in my informal discourse analysis at other stages of my research).

For participant observation in online discussion about the childhood vaccine debate on parenting website community forums on babycenter.com, thebump.com, and whattoexpect.com roughly posted or updated during the calendar year 2015, though search tools on individual sites varied in precision, and it was often unclear from glancing at search results when the discussion or post originated versus when it was last commented on or updated (for example, a discussion from 2007 may have been commented on by one person in 2015 and thus appeared in search results for the year 2015). Further, searches using the terms “vaccine”, “vaccination”, and “immunization”

resulted in tens if not hundreds of thousands pages of discussion. Therefore, because of the imprecision of search tools and the sheer amount of material, I chose to analyze select texts rather than all vaccine discussion on those websites in a particular time period. I began by analyzing the search results themselves, paying attention to salient titles, topics, and themes of posts or discussions about vaccines. This process helped me narrow down specific discussions I would use for analysis. I also analyzed *groups* formed based on vaccine decisions (e.g., pro- or anti-vaccine groups active on the sites I analyzed in 2015) that came up under the same search, including the group descriptions, “information” sections or statements, levels of participation, and members. Analyzing vaccine-related groups in community forums gave me a better idea about members’ vaccine orientations (e.g., pro-vaccine, anti-vaccine, pro-choice, vaccine-skeptical, vaccine-free, etc.) and corresponding levels of participation and discussion. For example, the larger the group membership and the longer the group had been active, the more discussions each group tended to have, and those discussions tended to have more posts or replies. However, there was a great deal of repetition among groups and discussion topics about vaccines on the websites I analyzed, thus it was necessary to subjectively choose specific discussions to observe that would constitute a reasonable amount of data to analyze for this project.

In my selection of vaccine-related discussion in community forums of babycenter.com, thebump.com, and whattoexpect.com, I considered how popular or active they were: Those with the most replies and/or the longest periods of activity tended to have the most diversity in perspectives as well as comprehensive coverage of different topics that were also covered more isolatedly in other, smaller discussions. I also sought for analysis discussions that originated in groups ranging from pro-vaccine to anti-

vaccine, including the in-between (e.g., pro-choice, vaccine-skeptical, etc.), in order to further diversify data for participant observation and analysis. Visual records of the results of searches that I conducted and discussions I observed and analyzed were stored and annotated (e.g., with memos) on Annotate.co, an online tool and site that “allows researchers to annotate or tag text and visual data, and index and organize these tags” (Davidson & di Gregorio, 2011, p. 636). Table 3.1 provides a list of the online discussions I analyzed, including the group or forum names in which they were posted and the number of comments or posts in each discussion.

Table 3.1

Online Vaccine Discussions Analyzed

Website	Thread	Group	Posts
Baby Center	“To vaccinate or not to vaccinate...”	Debate Team	271
Baby Center	“ER visit for 2 year old made me feel like shit”	None/Selected/ Delayed Vaccinations	51
Baby Center	“Getting Started: Vaccine Books and Other Resources”	None/Selected/ Delayed Vaccinations	66
Baby Center	“Chronic constipation—food allergies and vaccines”	None/Selected/ Delayed Vaccinations	80
Baby Center	“SB-277 Has Backed Me Into A Corner”	None/Selected/ Delayed Vaccinations	92
Baby Center	“Why delaying might not be a good idea...”	None/Selected/ Delayed Vaccinations	124

The Bump	“Vaccines”	April 2016 Moms	130
The Bump	“Vaccinations what are your thoughts”	3 rd Trimester	80
The Bump	“Vaccines”	Chit Chat	27
The Bump	“Love this vaccination logic!”	Parenting	5
What to Expect	“Modified vaccine schedule/delayed vaccines”	Natural Parenting	30
What to Expect	“scare tactics”	Non-vaccination	19
What to Expect	“Nonvaccinate is not antivaccinate”	Non-vaccination	15
What to Expect	“Hep b shot”	Non-vaccination	14
What to Expect	“No doctor”	Non-vaccination	5

(Online) participant observation has strengths and limitations as a qualitative research method. While Hesse-Biber and Leavy (2011) wrote that a limitation of traditional participant observation is that researcher interaction with the research site can or will change the nature of interaction and data collected, this may not be true of online participant observation, at least the kind of participant observation I conducted as a “lurker” (Gatson, 2011). By this, I mean that participant observation from the position of a lurker is basically less obtrusive than participant observation in a physical research site where the researcher is at least visibly present (and at most, actively interacting with participants). The nature of online participant observation, at least that described by Gatson (2011), leaves the option open for the researcher to remain essentially invisible to

all other participants in the research site (i.e., because I did not post in a discussion, and my presence was not immediately known, I did not likely alter the interactions by other participants, or data, in any meaningful way).¹³ However, an obvious limitation in participant-observation-without-interaction was my lack of ability to ask participants questions that would clarify or elaborate on statements they post in the forums. Thus, I supplemented participant observation with the more interactive method of qualitative one-on-one interviews, in which participants had the opportunity to “talk back” to me about their positions in the vaccine debate.

Interviews. Hesse-Biber and Leavy (2011) described the one-on-one in-depth qualitative interview as “a meaning-making endeavor embarked on as a partnership between the interviewer and his or her respondent” (p. 94). Further, “Ideally, the degree of division and hierarchy between the two collaborators is low, as the researcher and the researched are placed on the same plane” (Hesse-Biber & Leavy, 2011, p. 94). The goal of an in-depth individual interview is to gather rich and thick qualitative data from the point of view of the interviewee, which is first recorded in the form of a transcript and then refined and reduced during data analysis (Hesse-Biber & Leavy, 2011). One-on-one in-depth interviews allowed me to ask participants questions about their participation in the vaccine debate and their vaccine choices in general, as well as questions that helped answer my guiding research questions. For a list of one-on-one in-depth interview questions, see Appendix A. I conducted 29 one-on-one interviews with participants recruited through snowball sampling, two of which were in two parts because they were

¹³ This of course begs the question whether it is ethical for me to be a participant in an online discussion without making my presence or identity as a researcher known. See my discussion of the ethics of online ethnographic research above.

over two hours long and we ran out of time to get to everything each of us wanted to discuss during the initial phone calls. The first 16 interviews I conducted were with pro-vaccine mothers, and I reached saturation among pro-vaccine participants by that point and had collected enough rich data that responded to my research questions from the perspective of pro-vaccination. However, to recruit anti-vaccine or pro-parent-choice/pro-vaccine choice (“pro-choice” for short) participants, I had to reach out to several different groups and gain the trust of gatekeepers and/or potential participants, so it took more time to receive responses. Thus, while I did conduct two more interviews with pro-vaccine mothers before the end of data collection, the remaining 11 were with vaccine-critical (typically pro-choice but anti-vaccine for their own families, though at least two identified explicitly as anti-vaccine). I also reached saturation with this group by the conclusion of my data collection, and the 11 interviews with vaccine-critical mothers gave me sufficient quality data that would inform answers to my research questions.

Interviews were conducted via phone, Skype, and FaceTime, as chosen by participants, and informed consent was obtained verbally from each participant prior to interviews. I offered participants the choice of using video chat or only audio (e.g., phone, Skype without video) during interviews, because I anticipated some might feel more comfortable maintaining a level of anonymity by not revealing their faces (e.g., on video) or locations (e.g., with telephone area codes), thus feeling open to sharing more during interviews, whereas others may prefer the added intimacy of being able to see me (the interviewer) during interviews (e.g., via Skype or FaceTime with video). Technical and convenience issues were also a factor, as some participants did not have Skype accounts or Apple phones for FaceTime, and others lived in places where long distance

charges or poor cellular reception made phone calls difficult. Hesse-Biber and Leavy (2011) suggested that computer-mediated interviews (especially without video) do lose intimacy of face-to-face interviews, as well as the ability to see and assess certain nonverbal cues, and technology can always pose potential complications, but there are also advantages to conducting interviews via computers and the Internet. Most obviously, convenience and ease of access are increased when participants can engage in interviews from their homes (or wherever they prefer to be); this can also increase privacy if done as an alternative to a face-to-face interview conducted in a public place. While using computer- and Internet-mediated interviews as a method has the drawback of excluding from participant pools those who do not have access to (or command of) said technology, that limitation was unlikely to be relevant to my study, as participants were mostly recruited online—and all had Internet and phone access as far as I was aware.

Interview procedures. Questions in one-on-one interviews were informed by my research questions and extant literature in the areas of feminist affect theory, public relations and risk, online communication, and salient issues in the vaccine debate. For example, I inquired where participants go to retrieve vaccine-related information online and why, and what sources they believe to be credible or not (and why). I also asked participants to briefly tell me how they would define or describe a vaccine in order to get an idea of their individual levels of knowledge and beliefs about the issue, which varied greatly among the 29 women I interviewed. Other questions in the interview protocol inquired how participants conceptualized risk associated with vaccines and if they perceived vaccinating or not vaccinating to be risky and why. Another set of questions asked about what feelings (e.g., motherly instincts, “gut feelings”) and emotions (e.g.,

fear) they perceived to play roles in the debate (on all sides), and how much of a role they believed feelings, emotions, and instincts *should* play in parents' decisions to vaccinate or not. Many of the interviewees also chose to focus on topics not featured in the interview protocol but still related to vaccines, affect, research questions, and the purposes of this study: how their roles as mothers influenced their vaccine choices and perceptions of vaccine risks, backlash or stigma attached to vaccine-critical perspectives and how that affected their vaccine choices, distinctions between anti-vaccine and pro-choice philosophies, and lifestyle choices such as being a "crunchy mom." Because of the emergent and inductive nature of qualitative research and my grounded theory approach to data analysis (described below), as well as my commitment to privileging participants' voices and knowledges, I encouraged mothers I interviewed to take the lead in many conversations we had and choose to focus on the topics and issues that were most important to them. While some participants preferred to respond to questions while I more actively guided the discussion (i.e., asking questions from my interview protocol), which resembled more of a semi-structured interview format, others were more enthusiastic in taking lead roles in the interviews and choosing topics to talk about without my asking specific questions to prompt answers. The latter were more similar to unstructured interviews (Hesse-Biber & Leavy, 2011); however, if participants guiding unstructured interviews had not broached topics that addressed all of my research questions as we approached the conversations' ends, I did interject or follow up with specific questions from the interview protocol to elicit discussion that responded to my research questions. Interview data was transcribed and analyzed by me and stored according to IRB guidelines, interview questions were IRB-approved, and all interview

participants were sent consent forms electronically and verbally consented to the interviews and to being audio recorded, per IRB protocol.

Recruitment and participants. While I initially planned to recruit interview participants from online discussion forums that served as sites of the vaccine debate, I was consistently ignored or denied access/permission to post messages about my study in forums by community moderators, even after months of being a member of some groups and sending personalized private messages to moderators explaining my research and purpose with IRB-approved recruitment materials. A moderator at of one parenting website, for example, wished me luck in my research but told me a post to recruit interviewees would be in violation of the site's rules and regulations regarding solicitation, even though the vast majority of community guidelines about solicitation pertained mostly to corporate advertising, product and service marketing, promoting other websites for financial gain. Further, when I did post in forums without moderators, the few responses I received were not from people wanting to participate in an interview (e.g., some responded with advice about what information and sources I "should" include in my dissertation) or not fitting participant criteria.

For these reasons, and because I have a large network of friends and acquaintances who are or know mothers of young children or, I chose to amend my recruitment strategy to snowball methods. After receiving IRB approval to do so, I contacted several people I know to interview and/or to forward my information or connect me with other moms they know or are in groups with who might be interested in talking to me about vaccines and the debate. In the end, I used email and Facebook to contact and recruit participants, and I received 48 responses and conducted interviews

with 29 participants (two of the participants were interviewed twice to follow up on ideas brought up during the first conversation that I was interested to hear more about at a later time). While I personally knew three of the mothers who participated before interviewing them, the others I was connected to because they were “friends of friends” (i.e., a friend or acquaintance of mine personally introduced us via email, text, or private Facebook messages) or were members of “mom groups” (e.g., on Facebook or in local play groups) that people I knew or had interviewed were also members of and distributed my information there.

Interestingly, while I believed that snowball sampling would create a wholly different dynamic in my interviews than my original plan (to purposively sample and recruit from online discussion forums and communities) because of the lower (or no) level of anonymity associated with snowball sampling, I found this to only be true in some cases. For example, some moms who responded to my interview requests via Facebook were never “friends” with me on Facebook, so they were not known to me beyond their Facebook usernames and what they offered up in conversation, which varied—some told me more than I needed to know, while others did not disclose, for example, where they were from, their educational backgrounds, marital/partnership statuses, or how they identified regarding race, class, gender, or sexuality. Further, toward the end of my interviewing phase, I received several emails from moms whom I did not know and had not personally contacted via Facebook, email, or otherwise (and nobody that I knew or had interviewed told me that those moms would be contacting me, though a few did say they would pass my information to other moms they knew). For instance, one woman told me in an initial email that she saw my “letter floating around

FB,” but to preserve anonymity and privacy, I did not inquire further whom they got my information from. I replied to all of those emails and was pleased to be able to complete very meaningful and valuable interviews with almost all of them.

In fact, I found that anonymity was especially important for some of the mothers I spoke with, particularly those who identified as anti-vaccine or pro-choice, because of the heavy stigma and sometimes violent backlash many of them experience when their views are made public, both online and in “real life” (more on that in the next two chapters). That stigma and backlash that often automatically apply to parents who publicly (or even privately, such as with their pediatricians or partners) ask questions about vaccines are prime reasons for the high level of scrutiny and security maintained by mom groups who might identify as anything but pro-vaccine—to the extent that I was welcome to speak to some members of those groups but not invited to join or even know the names/locations of some groups. As such, some mothers I spoke with volunteered more personally identifying information than others, so the range of personal information I learned about each mother varied. Further, I did not press participants for specific demographic information, because the purpose of this project and my research questions were not primarily concerned with demographics. Thus, the personal information I gathered from mothers was more so related to their perspectives on vaccines and their families and children (e.g., children’s ages). Appendix C provides detailed information about each participant primarily lifted directly from interview transcripts and my own field notes and observations I recorded shortly after each interview in descriptive reflective memos.

To conduct analysis of data from participant observation and interviews, I used a grounded theory-inspired approach, explained next.

Data Analysis: Grounded Theory

Data from interviews (transcripts) and participant observation (my field notes in the forms of memos and visual and textual data captured from vaccine debate discussion forums) were analyzed using a process inspired by grounded analysis. All data were stored on my computer's external hard drive and/or in the qualitative transcription and analysis software programs *f5transkript* and *f4analyse*. Grounded theory was developed by Glaser and Strauss (1967) and entails inductive data analysis, constant comparison, and discovery of theory that emerges straight from the data (rather than prior knowledge about a topic). Glaser and Strauss stressed the importance of “discover of theory from data,” as theory that is closely tied to data will more closely “fit” the empirical situation, be useful for both expert researchers and laypeople, and, most importantly, “work,” or provide us with “relevant predictions, explanations, interpretations and applications” (p. 1).

While Glaser and Strauss (1967) believed that theory and most hypotheses and concepts should emerge from engagement with data, they did allow for inspiration of those ideas to be driven by extant researcher knowledge:

Generating a theory involves a process of research. By contrast, the *source* of certain ideas, or even “models,” can come from sources other than the data. The biographies of scientists are replete with stories of occasional flashes of insight, of seminal ideas, garnered from sources outside the data. But the generation of theory from such insights must then be brought into relation to the data, or there is great danger that the theory and empirical world will mismatch. (p. 6)

In other words, it is not expected in grounded theory that a researcher approaches data as a “blank slate” or with no prior knowledge of the research topic that will color her or his analysis. Rather, that prior knowledge should be checked and acknowledged so that it does not unwittingly inform the researcher’s interpretations of or conclusions about the data. This can be achieved by practicing a working self-reflexivity such as that I described earlier in this chapter, and which I engaged actively throughout this project.

Before explaining the process of coding in grounded theory, it is helpful to define some terms. A *code* is a textual representation of or label assigned to a piece of data (Corbin & Strauss, 2008; Glaser & Strauss, 1967). *Coding* “involves interacting with data (analysis) using techniques such as asking questions about data, making comparisons between data...and in doing so, deriving concepts to stand for those data, then developing those concepts in terms of their properties and dimensions” (Corbin & Strauss, 2008, p. 66). *Open coding* is initial and unrestricted coding of data (Glaser & Strauss, 1967), and *in-vivo codes* are “concepts using the actual words of research participants rather than being named by an analyst” (Corbin & Strauss, 2008, p. 65). Categories and properties are two conceptual elements of theories (Glaser & Strauss, 1967), where a category “stands by itself as a conceptual element of a theory,” and a property is a “conceptual aspect or element of a category” (p. 36). Lower-level categories emerge quickly and early on in data collection; higher level, “overriding and integrating, conceptualizations—and their properties that elaborate them—tend to come later during the joint collection, coding and analysis of the data” (Glaser & Strauss, 1967, p. 36).

As prescribed by Glaser and Strauss (1967), my data analysis process began with initial open coding, which also included in-vivo coding. This coding was unrestricted and

resulted in many initial codes and sub-codes that I later refined into fewer and more concise categories (Glaser & Strauss, 1967). This second step, the refinement process, involved integrating categories, which I accomplished using axial coding, or making connections between categories, coming up with new categories or themes that expand categories (Glaser & Strauss, 1967). Axial coding helped me refine, organize, and collapse initial categories I identified into fewer and more manageable and efficient categories. The refining second step of coding also involved dimensionalization, or teasing out key variations among categories, such as properties that existed on a continua and spanned multiple categories (Glaser & Strauss, 1967).

I used constant comparison strategies throughout the data collection and analysis processes (which happen simultaneously) (Corbin & Strauss, 2008; Glaser & Strauss, 1967). Corbin and Strauss (2008) described two kinds of constant comparisons that researchers should use: first, comparing incident with incident to tease out similarities and differences and group data thusly, and second, making theoretical comparisons that contextualize data in our broader knowledge and help us make sense of situations when we are otherwise “stuck.” The first type of comparisons were described by Corbin and Strauss (2008):

comparisons at the property and dimensional level provide persons with a way of knowing or understanding the world around them. People do not invent the world anew each day. Rather, they draw upon what they know to try to understand what they do not know. And, in this way, they discover what is similar and different about each object and thus define them. (p. 75)

Theoretical comparisons, on the other hand, involve comparing an incident within the data to our broader knowledge and experiences (and not only comparing and contrasting one incident within the data to another incident also within the data):

The specific incidents, objects, and actions that we use when making our theoretical comparisons can be derived from the literature and experience. Take note that it is not that we use literature or experience as data, but that we use the properties and dimensions derived from the comparative incident to examine the data in front of us. Just as we do not invent the world around us each day, in analysis we draw upon what we know to help us understand what we don't know.

(p. 75)

Incident-to-incident, or within-data comparisons helped me distinguish between data and group similar data together, while theoretical comparisons helped me understand data in broader contexts when properties and dimensions (and the significance of them) were not self-apparent (Corbin & Strauss, 2008). Thus, constant comparison helped contextualize and ground interview and online data both in other data and in my broader knowledge (e.g., from extant literature reviewed and my own experiences relevant to the study).

Corbin and Strauss (2008) suggested other analytical tools to assist researchers during the coding process, including thinking about alternative meanings of words, the “flip-flop technique” (thinking about the extreme opposite of a concept to bring out relevant or significant properties), drawing upon personal experience (though not going so far as imposing one's own experience on data), “waving the red flag” (checking biases and assumptions that might unduly influence interpretation of data), looking beyond surface meanings to understand how language is working in particular instances, looking

for negative cases (which also strengthens validity of qualitative research as craftsmanship [Kvale, 1995]), asking “so what?” and “what if?” questions, and looking at the structure of the narrative for how it is organized in time and place (i.e., contextualizing data in wider cultural conditions). Throughout analysis of interview and online data, I employed these strategies to more thoroughly engage and better understand the data.

Memoing is also recommended in qualitative research. Hesse-Biber and Leavy (2011) described two types of memos: reflective and analytical. I wrote reflective memos throughout data collection and analysis to record my thoughts and ideas about data collection and participants; for example, I used memos to record my thoughts and feelings about how each interview went immediately after their conclusions (Hesse-Biber & Leavy, 2011). Analysis memos serve a slightly different function and are “ideas that you write down to help you think through how you are going about your work or what something means” (Hesse-Biber & Leavy, 2011, p. 221). I used analysis memos recorded directly on data (e.g., using the “memo” tool in *f4analyse*, the data analysis I chose) (Hesse-Biber & Leavy, 2011).

In my analysis of interview and participant observation data, I used grounded theory strategies as described above and prescribed by Corbin and Strauss (2008) for interrogating data, Strauss and Corbin (1967) for coding data, and Hesse-Biber and Leavy for memoing and recording my own reactions to data. I used *f5transkript* software to transcribe and *f4analyse* software to analyze each interview transcript and online discussions (participant observation data), as well as writing and storing memos as data was collected, which happened over a period of several months: Online discussion texts

selected for participant observation were collected during the year 2015, though some discussions remained active into 2016, and interviews were conducted and transcribed during February and March of 2016. I also habitually returned to previously analyzed data and memos after conducting new interviews and online participant observation in order to strengthen my findings through constant comparison strategies and to keep all data and my reactions fresh in my mind when moving forward with future data analysis and collection.

Using both inductive and deductive analysis, I found many themes both emergent and already discussed in extant literature about communication in the vaccine debate relevant to public relations, risk, and affect. The broad themes into which I organized and refined data that were originally in the form of more specific categories and codes included (a) the vaccine debate, (b) knowledges, (c) affects, (d) mothers and motherhood, and (e) risks (these will be explained in more detail in chapter four). The various codes and categories that informed those themes were recorded in *f4analyse*, ultimately exported to Microsoft Excel, and appear in a codebook Appendix D. Related to memoing, and also to my larger epistemological and methodological claims, are issues of self-reflexivity and validity, but a discussion of reliability is also warranted.

Reliability

Reliability in qualitative research has been defined and evaluated very differently depending on the epistemological paradigm and/or institutional framework in which the research is situated. For example, qualitative research in a post-positivist tradition, or in work refereed for more methodologically conservative academic journals or grant-giving institutions, may adopt standards of reliability that more closely resemble definitions and

criteria of reliability characteristic of quantitative research versus, say, qualitative inquiry in more critical feminist or postmodern paradigms (Denzin, 2009; Webb, 1993). Reliability in (social) science research “has to do with the consistency of observations: Whether a research instrument...will yield the same results every time it is applied” (Lindlof & Taylor, 2002, p. 238). However, reliability by that definition is not particularly relevant in most qualitative research, because (a) measurements are not typically repeated (e.g., in semi- or unstructured interviews, each participant is generally not asked the same set of questions, and each interviewee is not usually asked the same question more than once), and (b) critical and interpretivist epistemological approaches dictate that positivistic constructs of reality, Truth, and objectivity are not fixed and unmediated but rather change from one person or context to the next: “If the meanings of the social world are continually changing—and the investigator’s own understandings also change in relation to the scene under study—then replication of results via independent assessments is neither practical nor possible” (Lindlof & Taylor, 2002, p. 239).

However, that is not to say that qualitative research that cannot or will not establish reliability in the traditional sense is inherently less valuable than research that does adhere to classic standards of reliability, validity, and generalizability—golden standards of positivistic, evidence-based research (Denzin, 2009). On the contrary, qualitative researchers from many epistemological homes (e.g., post-positivist, interpretivist, poststructural or postmodern, feminist, critical, etc.) have defined their own standards of rigor and value for qualitative methods and research findings (Denzin, 2009; Lindlof & Taylor, 2002). Validity, as opposed to reliability and generalizability, is one

standard that some have adapted to be more amenable to qualitative methodology (e.g,m Kvale, 1995).

Validity

Kvale (1995) defined validity as “whether a study investigates the phenomena intended to be investigated” (p. 26), or, more concretely, “going from correspondence with an objective reality to defensible knowledge claims” (p. 26). He explained that validity exists in qualitative research and can most accurately be described as in three forms: validity as craftsmanship, communicative validity, and pragmatic validity. Communicative validity, or validity achieved when researchers’ findings, interpretations, and meanings are put into dialogue with those of other experts (and this means participants, not just other scholars) (Kvale, 1995), was achieved in my study by way of member checks with individual interviewees (when possible).

Validity as craftsmanship, also according to Kvale (1995), is based on credibility, quality, and integrity of the researcher and research procedures, and it is reached by “examining the sources of invalidity, and the stronger attempts of falsification a proposition has survived, the more valid and more trustworthy the knowledge” (p. 26). Validity as craftsmanship comes from continually checking and challenging findings, something that is built into grounded theory data analysis proposed by Glaser and Strauss (1967), which I used to analyze interview data and online discussions about vaccines. Kvale listed the several tools that Glaser and Strauss’ grounded theory provides researchers for checking findings:

checking for representativeness and for researcher effects, triangulating, weighing the evidence, checking the meanings of outliers, using extreme cases, following

up surprises, looking for negative evidence, making if-then tests, ruling out spurious relations, replicating a finding, checking out rival explanations, and getting feedback from informants. (p. 27)

I made use of these tools during data analysis and simultaneous data collection to bolster the craftsmanship and, by extension, validity of my research findings.

As promised, I conclude this chapter with two self-reflexive statements about my subjectivity as researcher, mother, and feminist, as well as my position on vaccines. The following statements of positionality are intended to establish strong objectivity and clarify the situated knowledges with which I engaged this project.

Self-reflexivity/Strong Objectivity: Mother, Feminist, Researcher

Self-reflexivity, as I explained above, is a hallmark of feminist inquiry, and it also strengthens validity in qualitative research (Harding, 1993; Hesse-Biber & Leavy, 2011). Harding (1993) contended that a “strong reflexivity” is necessary for strong objectivity in qualitative research, and it requires recognition of situated knowledge. Hesse-Biber and Leavy (2011) described critical reflexivity as a recognition and “understanding of the diversity and complexity of one’s own social location” (p. 39). They also noted that internal contradictions should be not only acknowledged, but also sometimes embraced for their productive capacity to both “complicate and enrich” data analysis (p. 39). As noted above, reflexive memos are useful for researchers to record and deliberate on their social locations, replete with biases and assumptions that color data collection, analysis, and interpretations. The following paragraphs, then, act as a kind of reflexive memo in which I attempt to lay bare my social location that determines my situated knowledges, assumption, biases, and subjectivities informing my position as researcher and writer.

At the beginning of the project, I was 29 years old, pregnant, and a graduate student. I am also White, straight, and was born and raised in America. Regarding my proposed research, I thought I would be, in many ways, a cultural insider, mainly because I was pregnant and a soon-to-be mother recruiting other mothers of young children, and I would be making my own vaccine choices for my child soon. These conditions all played a significant role in my choice of research topic. On the more academic side, my epistemological positions of feminism and postmodernism led me to choose an affect theory lens through which to study the vaccine debate, ostensibly through the eyes of “lay” publics (using ethnographic data to understand how participants experience the vaccine debate online), but also from my own social location that constitutes and situates my social knowledge.

At the beginning of this project, I also believed it was necessary, for validity purposes and to establish strong objectivity, to state my position on vaccines, about which I wrote in my first reflective memo:

is complicated by my multiple subjectivities as a qualitative feminist researcher and a student and researcher in the social sciences. As a feminist and a qualitative researcher, I feel an obligatory allegiance with the women who will be this study’s participants, or at least a responsibility to respect and privilege their voices and views, heeding the authenticity of their experiences and knowledge. Yet, my limited knowledge of, but respect for, rigorous scientific inquiry tells me that some participants will necessarily be “wrong” (at least if we are measuring “right” and “wrong” by correspondence to objective facts, as most of us are prone to do [see Kvale, 1995])—and it is probably those on the anti-vaccine side of the

debate. While I am not well versed in the scientific methods used in the large-scale evidence-based trials that are considered the gold standard of vaccine research by the mainstream scientific community, I do understand and believe “experts” when they say that overwhelming, gold-standard, scientific evidence points to the safety and efficacy of vaccines.

I also wrote about my “internal contradiction—the tensions between privileging participant knowledge...and standing by my own [pro-vaccine] beliefs,” and one way I reconciled that tension was to make clear that, “while I agree that vaccines are probably good and necessary, I do not agree with how ‘experts’ have disregarded anti-vaccinationists or treated ‘lay’ publics paternalistically at times.” Concluding that first memo, I wrote about my hope that by recognizing and giving voice to my internal conflicts, I would “complicate and enrich my data analysis and interpretations, and not cause impasses or compromise the validity of my research.”

Several things have changed since I began this project. Foremost, I now have a toddler who has been through several rounds of vaccinations and more upcoming. In turn, those experiences considerably impacted every part of this project—from data collection to data analysis to my personal views on vaccines and parents who are faced with (or denied) vaccine decisions for their children—in many ways that took me entirely by surprise. Some of these transformations were easier for me to process and account for in my research than others; for example, I found that scheduling interviews with other mothers of children under school age was often done around our children’s nap schedules or after bedtime, and we all tended to be very understanding about last minute schedule changes due to family or work. Issues like these that participants and I shared were

overall constructive and worked to increase rapport with interviewees and ease of recruitment and scheduling interviews.

Other ways that my research was affected by having a child were heavier and more emotionally demanding. For example, listening to and reading stories from mothers about children, especially those close in age to my own daughter, who they believed were vaccine injured or affected by a VPD or experienced other health issues (e.g., those that contraindicated certain vaccine shots) was much more difficult, even painful, than I ever realized it could be, even as I was reading comparable stories in the course of my research before I had a child (or even when she was still a very young infant without a very noticeable personality)—during the time I was conducting interviews, my daughter had just turned a year old and began talking and walking and interacting with me on many new levels. Thus, I was able to vividly imagine the experiences some mothers described having when their children were around the same age and, for example, began exhibiting signs of autism or suddenly stopped talking or making eye contact. I could also vividly imagine myself in their positions when they described visits to the pediatrician when they felt dismissed or not listened to or belittled.

While I am fortunate enough to not have experienced my child enduring health or developmental setbacks such as what I described above, I have had plenty of interactions with her pediatrician that began to seem more and more problematic and frustrating, especially when I asked questions about the advice or treatments he gave. As it turned out, our pediatrician happened to be (an apparently rare) one who was agreeable to not vaccinating, selectively vaccinating, or delayed vaccination schedules. However, I did not become aware of that until my daughter was a few months old and we started being asked

at each visit if we were vaccinating at all or on schedule. Because I had done my own research, I never felt a need to ask his advice about vaccines, as I knew what I wanted for my daughter, but when she was 12 months he took it upon himself to choose a delayed schedule for her.

At 12 months the CDC recommends five different vaccinations, but our pediatrician chose two to give her at that appointment and said I would need to bring her back to next month to get more. When I asked him why, he frowned at me and responded, “Well I certainly don’t want to hold her down for more than two shots—*do you?*” And, even though I was completely comfortable vaccinating her on schedule and had planned on her receiving all five shots that day, I did not challenge him. At the next appointment I asked him again why he chose to give fewer shots at once, and he gave me a similar but more evasive response; at that time I told him I was writing a dissertation on the topic, and the last thing he said to me about vaccinations was: “Well that’s just something that you’ll get as many answers about as the number of people you ask.”

Still, the interactions I had with my daughter’s pediatrician were mild compared to some of the stories I read and heard from participants about their encounters with unfriendly medical staff. But even having experienced only a degree of what some of them had, I was able to gain a much better understanding and appreciation of the frustration some described and the boldness and confidence it took for those who challenged or refused professionals’ advice. Thus, while the empathy I gained throughout the course of this project, which allowed me to connect with many participants’ stories in ways that I was not aware were even possibilities before, was often difficult for me, I believe it opened ways of understanding for me as a researcher to be more sensitive to

and aware of meanings that emerged from the data, ultimately contributing to validity of my findings and conclusions.

Self-reflexivity/Strong Objectivity: My Position on Vaccines

While I believe it is possible to build strong objectivity as a researcher by acknowledging these views to myself and my participants (i.e., without disclosing them publicly), I understand why readers might demand to also be made aware of my position on vaccines before accepting the objectivity and rigor of my research methods, findings, and conclusions. However, midway through my research I began to feel growing anxiety about adopting and stating a firm position on vaccines in this paper, and I am still uncomfortable doing so—not because of any sense of betrayal to research participants, as I was as transparent as possible about my position on vaccines to those who asked. Rather, I was uncomfortable stating taking a stance on vaccines in this paper (a) because of trepidation about various readers' reactions and value judgments that might lead them to evaluate the validity of this study based on my vaccine position (and theirs) rather than the rigor of my research methods and analysis, and (b) because after extensive research about vaccines and the vaccine debate, I am now less confident and more conflicted about vaccinations than ever (whereas before I began the participant portion of the study, I was very certain that I was very pro-vaccine). Still, because of my feminist commitments to establishing strong objectivity and confidence in readers of this project to fairly evaluate my research based on its merits rather than my vaccine views, I will make every effort to lay bare my positions here.

First, I think it is important to distinguish between my knowledge about vaccines and the vaccine *debate*: As I am a scholar of communication and not immunology or

medicine, I am much more confident in my position on the latter than the former. And I believe this is an important distinction to make, because, as I have observed and experienced firsthand, failure to recognize the distinction between perceptions about vaccines on one hand and vaccine debaters on the other often leads to hasty conclusion about and stigmatization of those involved in vaccine discussions (in this case, mothers) based on their vaccine positions. Hasty conclusions about individuals based on their vaccine views inform assumptions and generalizations about the legitimacy of their knowledge and feelings more generally (e.g., ability to accurately assess vaccine information) and even their character as mothers, patients, knowers, researchers, and citizens. To put it more bluntly, “anti-vaxxers” often judge “pro-vaxxers” more harshly and often unfair, and vice versa—especially among those uncritical or unaware of their own positions, biases, and assumptions. I want to emphasize that I observed this equally on all sides of the debate, but also that it does not apply equally (or at all) to everyone; many of the mothers I spoke with and observed online took very rigorous inventories of their own positions and were thoughtful about the implications their beliefs and decisions had for themselves and the community.

In short, my perceptions of individual participants and the larger “pro” and “anti” movements (and everything in between) are not dictated by my beliefs about vaccinations. On the contrary, I perceived a great deal of variability in the legitimacy or accuracy of claims made by participants and vaccine debaters all over the pro-to-anti spectrum. In fact, my own beliefs about vaccines now—and how they changed over the course of this study—were more greatly influenced by interview participants who were passionate about vaccines and the wellbeing of their children and communities than

anything or anyone else. A big part of the process that shaped (and un-shaped) my vaccine views included not only hearing testimony of participants, but also follow-up research I did to verify or challenge or learn more about particular issues and facts that they brought up. I was often surprised to find out that some of my beliefs about vaccines were questionable, and many things I thought were falsehoods were actually founded on some degree of compelling evidence (at least by my standards).

While the statements I've made so far about vaccines may sound vague, that in part stems from my uncertainty about the specific claims made by both the anti-vaccine and the pro-vaccine and scientific communities regarding the safety and necessity of particular vaccinations for particular populations, the quality and thoroughness of research and transparency of reported findings, and the ethics of mandatory vaccine policies. I also found particularly troubling the treatment of mothers who ask questions about vaccines by healthcare providers and other so-called vaccine “experts”—and I do not mean only vaccine skeptics, but pro-vaccine mothers too, or just confused or curious ones—as well as the treatment of all moms vocal about vaccines by opposing parties.

Additionally, throughout this project, I came across many more accounts of “verified” VAEs than I expected—by which I mean adverse vaccine reactions diagnosed by physicians, as reported by participants, and even ones stipulated by “officially” recognized (e.g., by the CDC and VICP)—notably allergic reactions, fever spikes, febrile seizures, and swelling of the brain, all potentially (but fortunately rarely) deadly. I also heard vaccine injury testimonies in interviews and read in online sources that I leaned toward trusting (which was admittedly a subjective decision) about adverse events not recognized on the VICP table of compensatable VAEs yet still reportedly diagnosed by

physicians as being probably or almost certainly caused by vaccination(s), including Guillain-Barre Syndrome.

Further, this and other research has also led me to be considerably more critical about the integrity and politics of mainstream science than I was before—which aligns with a hallmark of feminist philosophies and critiques of dominant science (see Harding, 2015)—leaves me in a troublesome position: I do not believe I have the expertise and certainly not the time to consume and understand sufficient evidence-based vaccine research to the extent that I could comfortably reach an informed opinion about vaccination safety and efficacy, yet I do not trust most of the ostensibly “neutral” communities of scientists and other interested social actors in public health institutions to objectively and straightforwardly communicate knowledge about vaccines.

To add to my confliction, some mothers relayed compelling and painful stories about the anxiety and fear surrounding their vaccine decisions, including physical manifestations of those feelings (e.g., major depression, insomnia), many of which were based on medically diagnosed health conditions in their children that contraindicated certain vaccines (e.g., severe egg allergies and the flu shot) and close family histories of immune system disorders. Equally difficult to hear was testimony from mothers about drastic changes in their children that they perceived as VAEs. Further, with the impending reality of California’s SB-277 (which strictly mandates vaccines beginning summer 2016), several mothers in online discussions who had delayed or opted out of vaccines for their children up to that point described terror at the thought of having to submit their young children to what sounded like a jarring number of shots and vaccine doses at once to get them caught up to schedule by the deadline (especially terrifying for

those mothers who are afraid of vaccine risks to begin with). Online, mothers described being “paralyzed with fear” and blaming themselves for not being able to move out of state or homeschool their children indefinitely to avoid exposing them to a battery of shots that, in their minds at least, are full of toxic ingredients and very real and present danger.

While some pro-vaccine advocates may be able to justify to themselves coercing mothers into such emotionally and psychologically traumatic decisions, which those moms also believe could very well cause physical trauma for their children, for the greater good of society (assuming such a policy does promote the greater good), I cannot. While I do believe that vaccination benefits outweigh risks and are generally good for society, I am not convinced that individual family situations and several other social factors are all equally compelling in mandatory vaccine policy arguments. While I don’t claim to have a solution, I do believe that state-mandated vaccination eclipses autonomy of parents to make the vaccine decisions that are the focus of this paper, causing considerable anxiety in mothers, yet failing to offer sufficient information, communication, compassion, recognition of concerns, or other resources to help relieve that anxiety in parents who fear vaccinating their children but have no practical alternative.

If I have created any doubt about whether my positions on vaccines and vaccine policy aligns with a feminist social justice agenda, I’d also point to the fact that mothers, parents, and children most affected by mandatory vaccine policies, including in states more permissive in their vaccine mandates, are often among the most vulnerable populations in the U.S.: politically and economically oppressed, lesser privileged, with

limited access to healthcare and childcare networks, and typically less aware of vaccine options and even basic vaccine risks and benefits. This goes both ways, of course, as widespread vaccination has significantly decreased incidences of diseases (I do believe that claim) that are costly and dangerous and disproportionately impact those vulnerable groups such as the uninsured and single mothers who cannot afford to take unpaid days off of work to care for sick children. However, assuming that is in fact true, an ethical question remains: Are those same mothers (those who perhaps benefit most from social vaccination programs) with fewer resources including time and literacy to independently gather and assess vaccine information not entitled to equal information as, for example, mothers in my study whose privilege (time, advanced education, money to pay for medical alternative healthcare not covered by insurance, etc.) effectively gave them access to more vaccine information and knowledge? To put the question another way, are all mothers equally entitled to informed consent and informed choice in vaccine information regardless of privilege, and are informed choice and consent, medical and political autonomy, and respect social justice issues? Further, mothers like those who participated in my study, a pretty homogeneous group of women of relative privilege and access in society, more often have the option to, for example, home school, choose to stay at home with young children rather than use daycare, or elect private school or take other routes to avoid mandatory vaccines required for public school enrollment. These issues bring up not only barriers to access or privileges less available to some moms than others (like this study's participants), it also raises questions of informed consent and informed decision making regarding vaccines (especially if a lack of formal education or non-fluency in English).

In sum, to again briefly state my subjectivity in order to craft stronger objectivity (Harding, 2015), I think vaccines are generally very good, but my major purpose of this dissertation is to focus on a certain public (mothers) and the communication and affective politics and logics that characterize the vaccine debate rather than the technical issues of vaccine efficacy, safety, and need. I also argue the kind of strong objectivity described by Harding (2015) and to which I subscribe marks an absence in dominant paradigm research across disciplines directed at the vaccine debate, as illustrating in the grouping of articles included in my literature review that analyzed the online anti-vaccine debate. Finally, because my expertise is not in medicine or vaccine-related science but in communication and social science, in this work I resist making judgments or totalizing claims about the efficacy and safety of vaccines and the epidemiological implications of vaccination programs and uptake; instead, I reserve my critical commentary for the communicative and affective dimensions of the vaccine debate that are the scope of this project and the ethical, practical, theoretical, and social justice implications attached.

A final note: I want to propose that this approach of divorcing the research problem of vaccine efficacy/safety/need from the people and bodies intimately affected by vaccines—for example, thinking about mothers who resist or question vaccines in terms of more than simply “anti-vaxxers” and dangers to society—is rarely seen, perhaps because being “pro-vaccine” is more than simply taking a stance on vaccines or a commitment to the greater good and social justice: It is the politics of a dominant standpoint making the assumption that all other concerns related to vaccination (e.g., some mothers’ anxiety about vaccines and VAEs, and even the ostensibly rare subject afflicted with VAEs) must be subsumed under the rubric of the “greater good.” It is my

argument that this is not the case, that we can recognize, at least in social science, the legitimacy of mothers' feelings, anxieties, and questions about vaccines without capitulating to a an anti-vaccination movement that is detrimental to society at large and the most vulnerable global populations.

Chapter 4: Results

This chapter overviews results from grounded theory analysis of data collected during qualitative one-on-one interviews and participant observation of online discussion forums about childhood vaccines. I conducted interviews with 29 mothers whom I recruited online and via interpersonal networks using snowball sampling methods. For an overview of interview participants (who have been assigned pseudonyms for anonymity), see table 3.2. Online discussions I observed and analyzed took place in community spaces of three parenting-oriented websites: babycenter.com, thebump.com, and whattoexpect.com (see table 3.1 for a more detailed list of specific discussions analyzed).

As data collection and analysis progressed, many findings emerged that both reinforced and challenged extant academic knowledge and literature about the online childhood vaccine debate, as well as “new” ideas that present alternative lenses for scholars to engage with and understand mothers’ ways of knowing in the vaccine debate, specifically as related to feminist and postmodern affect theories. I ultimately identified eight broad themes that encompassed and helped organize my data to help answer my final research questions: (a) *maternal thinking*, (b) *science and knowledge*, (c) *individual versus greater good*, (d) *fear*, (e) *bodies*, (f) *privilege, access, and choice*, (g) *silence, shame, and stigma*, and (h) *affect in publics*. Categories, codes, sub-codes, and examples from the data that informed these themes are included in Appendix D and inform the discussions and conclusions presented in chapter five.

To illustrate these findings, this chapter presents data from one-on-one interviews with mothers close to the vaccine debate and online conversations among moms in community spaces and discussion forums of parenting website (babycenter.com,

thebump.com, and whattoexpect.com) in the form of quotes, paraphrased excerpts, and screen-captured images of posts or comments in online forums. I chose to display some online data using screen-captured images (represented as figures) because some discussion thread posts were formatted in a way that was difficult to convey by re-typing it into the text of this chapter, or the content was more visual than text and could not be typed out (e.g., a word cloud). To preserve anonymity, I removed screen names or user names and other identifying information from images of online comments, and I assigned aliases and removed further personally identifying information from interview data.

While all of these results and themes contributed to answering one or more of my research questions, both the questions and themes overlapped to the extent that to organize this chapter neatly around each research question one-by-one was not feasible. However, the results are loosely clustered around one or more research questions, the connections and implications of which will be further explicated in chapter five, where I will also elaborate on each of the eight themes listed above. The following paragraphs will lay out the organization of findings around research questions and offer a short explanation of terms, labels, and categories used to identify participants.

Organization of Chapter and Findings

Findings presented in this chapter are roughly organized around my research questions:

RQ1: How is feminist affect theory embodied by mothers in the vaccine debate?

RQ2: How do mothers understand risks as affective facts in the vaccine debate (if at all)?

RQ3: What affective logics are used by mothers in the vaccine debate (if any)?

RQ4: What are sources of knowledge for mothers in the vaccine debate?

Because there was often more overlap than distinction among research questions and data responding to them, evidence will be presented in three sections. (The issue of research questions in qualitative inquiry is discussed further in chapter five.) First, the section entitled *embodied affect theory* includes evidence corresponding to RQ1—in other words, evidence of how affects of the vaccine debate registered on mothers' bodies or the bodies of their children. This manifested in several ways and on many levels that speak to feminist and postmodern theories of bodily affects: body politics, biopower and biopolitics, assemblages, and Public Feelings, including themes of community and agency. (For brevity I will not go into depth again to explain each of those theories, but for a recap, see my explanation of research questions that concluded chapter two).

The second section, *affective facts and logics*, contains evidence and data relevant to RQ2 and RQ3. Because affective facts and affective logics often work to support and reproduce each other, it is more useful to consider evidence together that speak to one or both of those questions than it is to attempt to parse out the affective facts of the vaccine debate from the affective logics. To briefly reiterate, affective facts do not necessarily correspond to objective reality and are commonly conceived in high-risk and highly emotional environments of much uncertainty and ambiguity, such as in the face of potentially imminent yet unknown threats. Affective logics operate much like normative, rationalistic logics, but they are not bound by the same rules. Thus, evidence presented in this section will illustrate affective facts common in the vaccine debate, particularly concerning uncertain and ambiguous risk, and/or affective logics that are commonly used by mothers to reach conclusions about vaccines and their risks.

The third and final section of results presented in this chapter, *sources of knowledge*, responds to my fourth research question about online sources mothers consult for vaccine information. This section includes straightforward answer from mothers in response to questions I asked such as, “What sources of vaccine information to you find credible (or not) online?” It also presents evidence that elaborates on the nature of vaccine information—for example, statements about “too much” or conflicting information widely available about vaccines, perceived biases or gaps in vaccine-related research and information, and how accessible vaccine information is to general (non-scientist) publics. After results are presented here, the next chapter will more comprehensively analyze, synthesize, and contextualize the findings in existing literature and discuss theoretical and practical implications. But first, a discussion about labels and categories in the vaccine debate is needed.

The next section will begin the presentation of results corresponding to my first research question, *How is feminist affect theory embodied by mothers in the vaccine debate?*

Embodied Affect Theory

To reiterate, “affect” in this study is conceptualized as feelings, emotions, moods, affective states and forces that can move people to action or can immobilize them and create impasses, that inform meanings and knowledge, and that form relations between people and objects. This section includes evidence from interviews and vaccine discussions that illustrate several feminist and postmodern affect theories concerning how affect is embodied—how affect is grounded in and registers on bodies (e.g., depression manifesting with physical symptoms such as insomnia or weight loss), moves or

immobilizes bodies (affects agency for individuals and en masse), and can bond together and politicize (public) bodies such as by forming communities of resistance.

Body politics. Data in this section represents instances of bodies becoming sites of contestation over issues of autonomy, choice, and informed consent between parents (on behalf of children) and state (and state-allied institutions or agents). One issue that has been a mainstay in the vaccine debate since its inception concerns the tensions and conflicts between individual and community well-being, civil liberty versus civic responsibility. Consequently, a major theme in the anti-vaccine and pro-choice camps in this study was concern for the preservation of individual choice and (political and medical) autonomy—or freedom from compulsory immunization of children—which has become especially relevant against the backdrop of (proposed) policy reforms in the US in favor of mandatory vaccines. In fact, in California, new legislation is unrolling (and will be official as of July 2016) that removes many exemptions previously available for parents to elect to not vaccinate their children based on personal beliefs. In effect, the bill (SB-277) will more stringently require vaccination for children to enroll in public as well as private schools and daycares. Vaccine advocates in other states have proposed similar reforms that would principally make vaccination more mandatory for most children.

Several pro-choice and anti-vaccine parents online and in interviews expressed concern or alarm over this trend that would, from their perspectives, truncate their civil rights of choice and autonomy, and freedom from government intervention in how parents raise their children and what goes into their children's bodies. As one mom, Tabitha, said in an interview: "I still feel that there's absolutely no role for government or any other power to tell us what decisions we need to make for ourselves or for our

children.” On the other hand, one pro-vaccine mother I interviewed, Lisa, interpreted the conflict this way: “I have spoken to people who have had measles and mumps, and it was miserable from all accounts...I don't think that we need to see a resurgence of those things under the guise of parental choice.”

Biopower and biopolitics. The following evidence illustrates (perceived) control over individual bodies and populations (i.e., mass bodies) by dominant state and institutional powers via provision or barriers to information and technologies that have bearing on (embodied) biological processes and life itself. An example of biopower in the vaccine debate includes mandatory vaccination policies for participation in public services and education. Biopower in this sense can be disproportionately felt by parents of less privilege or access to resources such as healthcare, time (e.g., to research vaccine choices, to stay at home to care for young children as an alternative to daycare, even to homeschool), and information. Mothers I interviewed and observed online often commented on how those barriers personally impacted them or other parents they knew who were not in the social or financial positions to seek ways to overcome them. However, the situation played out in two different ways: (a) parents were not aware of vaccine choices (e.g., exemptions) in part because they did not have the time, awareness, access (e.g., Internet), education, literacy (in reading, writing, computers, or medical language), fluency, money, or other capital that parents of relative privilege *did* have that allowed them to make vaccine choices (e.g., opt out or opt to delay or selectively vaccinate); or (b) parents lacked the physical and geographical access to healthcare and vaccine providers to the extent that they did not vaccinate their children, not out of choice, but rather *lack* of choice.

In the end, both of these scenarios hinged on choice—the first group vaccinated because they were not made aware of other choices, while the second group did not vaccinate because they could not choose to—and both had potentially significant impacts on both parents and children. For children who were unvaccinated (not by parental choice, but because they lacked access to a doctor who provided vaccines), ramifications ranged from not being able to attend daycare or school (thus also causing parents to miss days of work) to being infected with and spreading VPDs. However, this scenario was rare and only reported by one interviewee as affecting other parents who she knew personally (because of aggressive pro-vaccine initiatives, it appears to be much more difficult to remain unwillingly unvaccinated in the US than it is to be unwillingly vaccinated); largely, restricted parental choice resulted in children being vaccinated because their parents were not informed of other options or possible risks associated with vaccines. In fact, one interview participant relayed how both of these scenarios played out for herself and for other parents in her community.

Hannah, who recently moved to a relatively poor beach community on a small island, told me she had missed one or two rounds of vaccines because she “got confused on the months,” and she found out that her daughter’s regular (and the only) pediatrician on the island had recently stopped offering vaccines. Hannah described the predicament for other parents on the island:

the people here just don’t go to the doctor or dentist, or give [their kids] haircuts or baths...And the closest doctor that gives vaccines is 45 minutes away—off the island. And a lot of people here don’t have a car, so I don’t see how they *could* get vaccinated.

On the other hand, Hannah and her family had moved to the island recently to open a business, so they occupied a position of relative privilege there. Though Hannah was a part business owner, college educated, and had spent most of her life in higher-income urban areas, she was still unaware of vaccine policies and vaccine choices in her state—not uncommon for many mothers who do not have the free time (and have not had a motivating enough reason to “find the time”) to research vaccine options; exemptions are not widely publicized by CDC or other official agents. She described one of her more memorable experiences with vaccination:

They sent a nurse in or whatever. The shot lady. I asked them if we had to get all four [vaccinations] that day, and they said yes. I don't know if maybe I didn't really have to, or if I caused a problem [by asking]... I just felt bad for her having to get four at once.

Later, Hannah had to drive 45 minutes to the nearest vaccine provider to update her daughter's vaccination record for daycare enrollment. During the interview, she asked me if I knew whether her daughter was indeed required to have all vaccines to enter daycare, and if she was in fact required by law to receive all four vaccines at the one appointment she described above (I explained some of the state's vaccine policies and options but could not answer her question about daycare.)

Further, even for the parents who were privileged with the choice to not vaccinate their children, there were still ramifications perpetuated by state and policy that were commonly perceived as discriminatory and even punitive by pro-choice, anti-vaccine, and even some pro-vaccine mothers. The material implications of choosing to opt out of state-recommended or mandated vaccines could be seen in several online discussions,

especially responding to SB-277 in California. For example, in one thread titled “SB-277 Has Backed Me Into A Corner,” a mother wrote:

I don't have the option to homeschool or leave the state. My only option is to comply with the bill and begin vaccinating my daughter and get my son caught up on his. I have until January 2016 to complete the schedule and I absolutely can not wait any longer and 'hope this bill goes away. I'm terrified about letting my kids, especially my daughter, receive that many injections in such a short amount of time. I'm even more terrified of waiting and having her injected with all of them in a span of a couple of months...I'm mad that [the state] is backing me and my family into a corner and to be honest, I'm mad at myself for inadvertently setting my kids up for this. I feel that by trying to protect my kids, I've failed them. My heart is broken. (LantanaLove, 2015)

While depictions such as these of state control of individual and mass bodies via biopower and biopolitics highlighted dominating power from above, the next embodied affect theme, assemblages, reflects how parents also exert power, not only through individual acts of resistance (e.g., individual choices to refuse/select/delay vaccination) but also through *assemblages* of mothers and knowledge.

Assemblages. This section contains data illustrating assemblages of bodies and information, such as mothers sharing vaccine resources and experiences online, especially working to build emergent knowledge, or “lines of flight” from traditional/“official” knowledge. For example, For example, Carley told me about how she collected and disseminated research resources and vaccine information in several different public and private Facebook groups, some created explicitly for that purpose (to

discuss vaccines) and some formed around other topics more or less related to vaccines. Carley relayed how she began aggressively researching vaccine risks after her son experienced a reaction—diagnosed as likely to be sensory processing disorder—two hours after receiving vaccinations. She began by asking one of her closest Facebook groups of mothers “where to even start,” as she found the amount of information about vaccines and sources offering information to be confusing and intimidating.

However, the Facebook group of mothers, Carley reported, gave her a wealth of specific sources and references to pursue that was more *focused* in one sense—it reduced the amount of information Carley would have to comb through to begin to grasp the issues surround vaccine risks—but at the same not *narrow* in scope: Sources the group recommended to her spanned the gamut of natural/alternative news blogs to the CDC and pharmaceutical company published vaccine content:

See I printed all the handouts [VISs] out when my son was born, and I thought those were legit. Like that's good info. [Laughs] But then my friend Jessica—she's super smart. She has *binders* and *binders full* of stuff. I didn't understand it at first. It all comes straight from the CDC—she likes to have info from both sides—and she gave it to me and was like, “It's all there for you to see.”

Carley told me that her friend eventually spent countless hours over months explaining some very technical scientific and medical information that otherwise probably would not have been accessible or even known to Carley (according to Carley). And in addition to the wealth of “official” scientific information about vaccines, Carley also used that and similar Facebook groups and networks of moms to gather anecdotal evidence of vaccine injuries (which her friend Jessica has reportedly been documenting for years now) and

advice, for example, about exemptions and vaccine-friendly pediatricians and other care providers in local areas.

Carley was only one of many, many mothers, especially those who were pro-choice or anti-vaccine, as well as particularly passionate pro-vaccine parents, who reported similar activities of assembling mothers' experiences, backgrounds, education, information, and other resources to grow knowledge about vaccines that in part emerged from "official" sources and simultaneously "took flight" from "official" positions on vaccination. The next topic in feminist and postmodern embodied affect theories, *Public Feelings*, is closely related to the idea of assemblages, specifically the communal and agentic aspects.

Public Feelings. This section contains results that fall under the rubric of *Public Feelings* in two parts: First, data is provided that shows how agency was either given or suspended by affect and feelings, and second, evidence is offered to indicate the bonding or communal properties of affect.

Agency. The following interview and online discussion excerpts show evidence of how affect is agentic—how feelings can propel bodies or immobilize them. Two very obvious instances of agency from affect told by interviewees involved public (not limited to online) advocacy and activism for their respective causes. One mother, Lisa, was active in the movement in California to pass SB-277. Lisa recounted hearing stories from her in-laws (who grew up in Europe) about VPDs they suffered, including mumps and measles, and remembered being "horrified" by their experiences. She also lived in an area of California that was affected by a measles outbreak that originated at Disney theme parks in late 2014 and affected hundreds of children for several months thereafter. At the

time of the outbreak, Lisa and her husband (unaware of the outbreak) took their older child to Disneyland to celebrate her birthday. They also had a 2-month-old son at the time—too young to be vaccinated for measles (part of the MMR combination vaccine). Because measles is highly contagious, they “restricted activities” and “lived in fear for a long time” that their infant son would contract the virus. Lisa described that period of their life: “It was a very scary time living in Southern California.”

Another mother I interviewed, Sandy—who converted from pro-vaccine to pro-choice/anti-vaccine for her family after her son began developing signs of autism soon after receiving vaccinations (he was eventually diagnosed as “classically autistic”)—was moved to participate in conferences and nonprofit groups supported vaccine education and vaccine choice. She also joined in the efforts of an activist organization that started as a Facebook group and grew into a sizeable political action committee—“focused on advocacy and education, which takes the form of fighting against patient discrimination and holding public and private entities accountable for accurately representing vaccine laws and exemption rights”—in response to proposed legislation in her state that would remove options for philosophical and religion exemptions. Sandy and Lisa represent two examples of mothers who were moved by emotional experiences to engage in advocacy for their vaccine positions and choices, effectively harnessing agency produced by affect. On the other hand, affective experiences and Public Feelings can work to suspend agency and immobilize individuals and publics.

One common example of affect suspending agency reported by mothers I interviewed can be more or less described as silence. On the less extreme end, many mothers reported personal stories or friends’ stories of feeling very “passionate” about

their vaccine choices and views, yet, because of direct emotional confrontations they endured or fear of attacks (usually online but also interpersonally, such as from family members, friends with children, or physicians), they withdrew from any public and sometimes even private discussion about vaccinations. On the more extreme end, some mothers reported feeling suspended agency that went beyond simply shunning vaccine discussions—they actually felt immobilized or powerless when it came to exercising their choices and autonomy as parents.

This kind of paralysis described by some moms I interviewed, but more commonly online, usually stemmed from emotional experiences they endured directly, or from fears of backlash—for example, the prospect of their children encountering discrimination from schools, public officials, doctors’ offices, play groups, birthday parties, and other public services and areas (e.g., organized sports teams), as well as being ostracized by family and friends (especially those with young children)—due to their (parents’) vaccine choices. This immobilization or suspended agency that came from fear of public stigma, backlash, or shame was reported exclusively by pro-choice and anti-vaccine mothers, both in interviews and in the online discussions I observed. (While some pro-vaccine mothers I interviewed did acknowledge this anti-vaccine stigma or backlash as a real and legitimate worry and risk for vaccine-critical parents, most pro-vaccine mothers in online discussions did not mention it, and many even justified it.) Perhaps the most acute manifestation of suspended agency described here was reported by mothers who did not want their children to be vaccinated or receive certain other medical treatments or care, but they (the mothers) were too afraid to speak up and resist,

or they felt the efforts would be useless and cause more emotional damage—and their children would still end up vaccinated.

For most interviewees who described these feelings of paralysis or helplessness, suspended agency in the form of silence, it ended when they left the immediate situation, such as the pediatrician’s office. In these instances, especially in the context of doctor visits, most did not end up “consenting” to their children receiving a vaccination without actually wanting it—rather, they stayed silent just long enough to delay the decision, or said just enough to assure the doctor that they would return for vaccinations at a later time. For example, Sandy described her interactions with more than one doctor who encouraged vaccinations for her children: “I just looked at them and I nodded and I smiled because I’m non-confrontational and I’m like ‘okay, okay...’ And then I don’t do it [vaccinate].” The experience and behavior described by Sandy here—and by numerous other mothers online and during interviews—may be interpreted as powerful acts of resistance—*agency*.

However, similar parent-doctor interactions described by Sandy and several others were not always so uneventful and did not always end in acts of resistance and agency, at least not immediately (if anything, they usually ended in regret). For instance, Sandy described her experience with one pediatrician who “actively pushed” vaccination for her infant son, which occurred immediately before she became more passionately anti-vaccine for her own family (pro-choice for others): “I looked at [the doctor] and I said ‘Okay.’ And then she did the round of vaccinations that day. Then we went back for the two-month vaccinations, and that night [my son] stayed screaming up all night.” For Sandy, in this instance, it was her husband’s (surprising, according to Sandy) reaction

that spurred her to begin exercising her agency through silence in order to both avoid confrontation (the thought of which gave her anxiety) and to avoid vaccinating her children without ado. Sandy said of her husband (who said she was “pro-vaccine” prior to this, when her two-month-old was up crying all night):

[My husband] stayed up with me that entire night. He didn't sleep, I didn't sleep...And he looked at me next morning at 7am and said, “We're not doing that anymore.” I said, “What do we do about the pediatrician situation?” And he goes, “Find one that will allow us not to.” I said okay.”

The feelings of shame, fear, and stigma like those described by mothers on this topic illustrate the feminist and queer affective theory of “ugly” feelings, which, similar to other concepts covered in this section, have immense power to suspend agency and create silence and feelings of paralysis. While indeed very public by nature (as vaccination is an inherently public and very political issue), “ugly” feelings often remain invisible at the public level and are experienced privately by individuals, in this case mothers.

A slightly different example of and reason for suspended agency could be seen in the example described above by Hannah, who asked her child's nurse if her daughter was required to receive four vaccines in one appointment (which she was not, but Hannah was told otherwise). Hannah's account of the interaction suggested she doubted the nurse's answer but did not feel comfortable pushing the issue or inquiring further into it, because she did not want to “cause trouble.” Accounts of everyday, routine, and mundane experiences of suspended agency were very frequently reported by mothers who were anything other than very pro-vaccine, and the more (potentially) consequential examples such as Sandy's (when her son received a medical intervention that she did not want but

did not feel comfortable refusing or even questioning) were also common among many mothers online and a few I interviewed. However, the bonding and community-nurturing property of Public Feelings brings back the more hopeful side of the political and agency-giving potential of Public Feelings and feminist affect theory.

Bonding. Examples of participants' statements here illustrate the ability of affect to bond people together to form affective communities or communities of feeling. Several of the examples already described above depict how communities of mothers and parents have come together and bonded over shared affects and Public Feelings—Carley's network of moms on Facebook who helped her become active in anti-vaccine/pro-choice online advocacy and intensive research on the subject, as well as find her own agency to resist vaccination demands of both her children's physicians *and* her own husband and family, is a prime one.

In fact, for more than half of interviewees and the majority of online discussants who wrote about this topic, a major source of information, advice, companionship, and support for mothers was their network of relationships with other moms. Most mothers I spoke to, especially those with younger children and/or children with distinctive conditions such as autism or seizure disorders, relayed positive experiences they've had with networks of moms with similar values and/or circumstances. Sandy, for instance, who has a son with autism, found comfort and support with moms in similar positions and shared emotional experiences who she met both online and in person at conferences geared toward parents of children with autism. She even described trying to convince her husband to attend the next year's conference with her:

His friends don't have to deal with the things that we have to deal with, so it's hard for him to open up and talk to any of his guy friends about this...I just think it would be beneficial for him to meet other dads who experience things that we experience versus his friends now—they don't typically have to experience anything like what we go through every day.

Shared affective experiences, such as being a mother of a child with autism, encouraged many moms to engage in communities of parents with similar experiences. However, the political nature of Public Feelings—the agentic property—also led many mothers to be more engaged in activities such as advocacy, as we saw above in the cases of Lisa (who worked to get SB-277 passed in California) and Sandy (who contributed to efforts of the political action committee in her state to opposed similar legislation during the following election cycle).

Until now, I have shown data and provided evidence of some of the many ways the vaccine debate embodies feminist affect theory. The findings presented above that demonstrate those theories from the feminist and postmodern affective turn have in common a focus on the body—bodies being brought together physically or virtually (e.g., communities of Public Feelings, assemblages); bodies—including their biological processes, health and wellness, and life itself—being subjected to some level of control by state and institutional powers and knowledges (biopower and biopolitics); bodies (figuratively) paralyzed by shame and fear (suspended agency, “ugly” feelings); and bodies being the site of political struggle over autonomy and informed choice and consent, especially between mothers and pro-vaccine “officials,” both state and otherwise institutional.

One other theme related to embodied affect stood out in interview data but did not fall squarely under one of the above-listed feminist and postmodern affect theories: Three mothers I interviewed reported being so driven and passionate about vaccine research that they suffered physical symptoms from almost compulsive and nonstop searching for and consuming vaccine information—a passion that appeared to be driven by anxieties and fears about their children’s well-being, uncertainty of risks and ambiguity of information, and a “crazy” and “obsessive” need to learn more and more about vaccines and the discourses, institutions, and industries through which they circulate. Those three moms (who did not appear to be acquainted) shared common experiences that led to intensive research about vaccines, which ended in physical and emotional discomfort and sometimes more severe and longer-lasting symptoms. Specifically, they each had a personal vaccine injury story that involved witnessing drastic, sudden, and very frightening and jarring (and lasting) transformations in their children’s personalities or demeanors within hours or days of receiving multiple vaccines.

Research spurred by the very emotional experiences of seeing their children change so unexpectedly resulted in, for example, insomnia, fatigue, “going crazy,” being “unable to function during the day” (when all three had some kind of obligations during the day, whether family, house, education, career, or a combination) because they stayed up all night reading Internet sites and databases of vaccine information—and this continued for weeks if not months on end for all three mothers. One mother, Sandy, described her struggle to overcome the physical and psychological effects that came from researching vaccines and the affective dimensions of it: She eventually became unable to sleep.

I would lay my head down and...every thought that you could have about every single thing going wrong was everything that I thought while I was trying to sleep. And then, I had to go to the doctor and the doctor put me on medicine to try to help me sleep, and then finally I had to go to a therapist who put me through my own round of cognitive behavioral therapy to get me to learn how to put myself to sleep again.

Granted, this is an extreme example of how extreme affects circulating in the vaccine debate and individual vaccine choices and experiences register on bodies in very physiological, psychological, and otherwise traumatic ways. However, given that three out of 29 interviewees I spoke with reported similar activities and reactions, this may not be all that uncommon among mothers who are newly and passionately pro-choice or anti-vaccine—especially those with Internet access and (night)time to spare.

To recap, this section illustrated feminist and postmodern affective concepts of of body politics, biopower and biopolitics, assemblages, and Public Feelings, including agency and community bonding. The section immediately following will turn the focus a bit away from how affect registers on physical and biological bodies to how affect operates in the *minds* of individuals and publics—not that I am proposing any kind of mind-body dualism, but rather referring to more cognitive processes rather than biological ones, or substances of the body, that interact with vaccines in very different ways from affective reasoning.

Affective Facts and Affective Logics

In response to RQ2 and RQ3—*How do mothers understand risks as affective facts in the vaccine debate (if at all)? What affective logics are used by mothers in the*

vaccine debate (if any)?—this section offers evidence of affective facts and logics characteristic of the childhood vaccine debate and salient among participants in this study. Once again, affective facts can stand in as “facts” or certainties in the presence of uncertainty or ambiguity, especially pertaining to fear and unknown future risks or threats. Thus, for example, on the condition that science has not definitively proven that vaccines absolutely do not lead to, say, autism—it has only failed to find that link—is for some parents an affective fact that autism is a plausible risk of vaccination. Indeed, by almost all accounts, the most prominent and obvious (what one interviewee even called “cliché”) affective fact of the vaccine debate was the autism-MMR or autism-vaccine link, especially in online discussions but also among several moms I interviewed.

The affective fact of the matter: Autism and vaccines. The affective fact of an autism-vaccine link, however, appears to have taken very peculiar turns (or “lines of flight” perhaps, to reference the above-discussed concept of assemblages) in recent online discussions, some of which was also reflected in interview data. The original MMR-autism link argument that popularly stemmed from media attention on vaccine critics, such as Andrew Wakefield and Jenny McCarthy, has now expanded to include more vaccines, vaccine-related issues, vaccine ingredients, broader environmental toxins, and genetic markers as being linked to autism. For example, one mother online started this thread in one online forum, followed by posting a series lengthy explanations of complicated scientific concepts (which are included a little further down in this section) as follow ups to this original post:

Well, here it is, the thread that I've been meaning to do. I'll admit that I haven't done as much research as I originally wanted to before doing this post, but I think I better do this sooner rather than later, otherwise my thoughts could get lost over time.

DISCLAIMER: this is by no means proof of anything, rather, it is a line of thinking that has enabled me to understand what things are associated to autism, why they are associated to autism, and how vaccines may be implicit in all of this.

THIS IS GOING TO BE VERY SCIENCE HEAVY

This post is going to be broken down into several sections, I'll be making blank posts for them and I'll fill them as I go along.

- 1) Why current studies are inadequate to prove that vaccines are not associated to autism**
- 2) Learning about the methionine cycle and the transulfuration pathway**
- 3) Learning about the biomarkers of autism**
- 4) Environmental or biological/genetic factors that are associated with autism**

Point number 4 may be very long, as there are many environmental factors that have been implicated in autism. That section may be broken up into many posts.

If you have questions along this journey of my thread, feel free to ask.

(whyser, 2016)

Figure 4.1. Discussion post 1 in thread “Vaccines and Autism” on babycenter.com.

The above post reflects the increasingly strong scientific/biological impulse in the autism-vaccine discussion, which often engages highly specialized medical knowledge (e.g., in areas of immunology, genetics, and the digestive system—or the “GUT”), especially concerning genetic markers and mutations that some theorize increase the risk of autism being triggered by vaccination. A trending topic and practice of the MTHFR gene mutation and testing applies here.

MTHFR. Frequent mentions in online discussion posts and interviewee references of MTHFR gene mutation and testing indicate its growing popularity among mothers seeking alternative approaches to vaccine choices and medicine/healthcare. As explained by participants and in other resources consulted online, those with the relatively common MTHFR gene mutation could theoretically be more vulnerable to an array of health conditions and VAEs, particularly autism. According to MTHFR.net, the self-proclaimed “leading resource for unbiased, researched information strictly about the MTHFR mutation,” “the MTHFR gene mutation is a highly significant public health problem that is completely ignored. Yet, millions are suffering from pulmonary embolisms, addictions, fibromyalgia, miscarriages, schizophrenia, severe depression, cancer and autism to name a few” (<http://mthfr.net>). Many online and interview participants believed that testing children for this genetic mutation, among other preexisting conditions, prior to vaccinating can illuminate—and possibly eliminate—certain heightened risks for autism and other VAEs present in some individuals. In fact, some interviewees even expressed dismay that MTHFR and other genetic (also allergy, pH levels, vitamin deficiencies, presence of heavy metals, etc.) testing is not routinely done for every child before any vaccines are given.

Sally, one of the four interview participants who reported having their children and sometimes themselves tested for MTHFR mutations (mutations were identified in all of those tested), was the first to explain MTHFR to me: “It’s actually pretty common in the United States, but not many people know about it...If people knew they have it—those mutations can be an indicator that, say, you might be more susceptible to a reaction from a vaccine.” Sally’s statement points to the sentiment expressed by many advocates

of genetic/MTHFR testing that such tests eliminate a great deal of uncertainty regarding both risks of VAEs and autism. Thus, for some mothers, testing for MTHFR and other genetic preconditions was done to redress the affective fact/future threat/uncertain risk of autism from vaccination. As I will explain in the following paragraphs, MTHFR testing, then, acts as a preemptive action taken to reduce the affective fact/future threat (which may or may not *actually* have ever existed) of autism or other VAEs.

However, there is another side to MTHFR testing that critics claim is problematic for several reasons. First, skeptics claim that there is no remotely convincing evidence that testing for MTHFR mutations is worthwhile, that costly treatments for the mutation are needed, or that MTHFR mutation is actually linked to any or all of the diseases it is purported to indicate. Second, critics have accused practitioners (doctors, naturopaths, immunologists, integrative specialists, etc.) who administer MTHFR testing of doing so for the profit. Once a battery of tests is conducted and analyzed (which typically costs in the thousands of dollars), participants and online sources suggested that is routine for the practitioners who administered the tests to then try to sell multiple supplements, vitamins, detoxes, and other products to make up for whatever deficiencies were detected. From what participants who have experience with MTHFR testing reported, mostly online, those products are not inexpensive, not one-time purchases, and not covered by medical insurance. All things considered, while MTHFR testing might reduce fear and anxiety that arise from uncertainty and ambiguity surrounding the affective fact/future threat of autism or other VAEs, one interview participant who described her experience, Sandy, was conflicted about the benefits (e.g., decreasing uncertainty) of the testing and efficacy

of the nutritional supplements versus the costs and lack of evidence supporting MTHFR testing.

First, Sandy described the process of testing as somewhat invasive and uncomfortable at best, for both mom and child, but she also juxtaposed the painful experience to the benefits she perceived from the testing and supplements:

She has an entire program set up where she does blood work, allergy tests, skin tests, and all kinds of stuff on him. They made me hold him down to get to the blood work, then we had to do urine test and we did fecal test... I will say all of the tests that she ran was kind of eye-opening for me, and when we implemented the diet changes and the supplements and all of that, that's when we did see him start to return back to full little boy I've seen before the regression...

However, two other parts of the process bothered her. For one, after explaining that her son and she were tested for MTHFR and other conditions, she mused: "I've been told there's a genetic predisposition to having specific issues with vaccination... I don't know why—it bugs me to this day—I cannot find any specific or a broad range of specific studies that show that linkage." While Sandy witnessed improvement in her son (who had been diagnosed as autistic) after starting supplements, she still questioned the relationships between MTHFR, supplements, vaccines, and autism, at least to the extent that she sought studies about them and found none.

Still, though, another issue was more salient for Sandy during our interview—cost. At the end of the battery of tests and being prescribed a protocol of supplements to give her son, she was charged \$2200, which would have been prohibitive for her family to afford, and she was demanded to pay it right then (presumably if she wanted to keep

the supplements she was given for her son). She described the ordeal more than once, but this sums it up:

My husband almost killed me when I called him over the phone and said, “Give me the credit card number, I don’t have the credit card on me.” He was like, “Have you lost your mind? I’m not doing that!” And I was like, “Yeah, we are!” But I really didn’t realize until afterwards that it was going to be that much at the end!

Sandy later told me, when I asked about whether she was able to obtain medical exemptions for her children from vaccinations. (She herself got one after experiencing a very severe reaction to a vaccine as an adult due to a condition that may be genetic, which was one major reason for choosing not to vaccinate her children.) Sandy told me that she heard the doctor that did her son’s MTHFR testing would write medical exemptions for MTHFR mutations—but presumably only after \$2200 worth of testing, per child. That was a price Sandy was not willing or able to pay (for a second time, and this time for two children).

Similar stories—and worse—have been relayed in online discussion forums and blog comment sections, and indeed the evidence backing MTHFR testing does appear ambiguous at best (though it is beyond my scope to make a definitive assessment about that), which begs the question: Is MTHFR testing, presented as an answer to the affective fact/future threat/uncertain risk of autism and other VAEs, exploiting the affective fact of the autism-vaccine link and the fears and anxieties of parents of children with autism who seek to reduce the uncertainty and risks attached to vaccines? This question, or

accusation, has been posed in many online forums, but not so explicitly in the discussion threads I selected for analysis.

Relatedly, there appears to be a growing emphasis on highly scientific and technical data, language, research, and hypotheses about causes of autism that might extend beyond vaccines. The images below are examples of comments written by a poster in Babycenter.com's community discussion forum about vaccines, the author of which did not claim any science background or medical training.

Breakdown of cycle

Any breakdown or mutations that affect this cycle negatively, along with any environmental assault or infectious diseases can result in things such as

- *thyroid dysfunction*
- *diabetes*
- *cardiovascular disease*
- *decreased ability to repair tissue damage*
- *neurological inflammation*
- *neurotransmitter imbalances*
- *improper immune function (which can lead to chronic viral infection)*
- *cancer*
- *neurodegenerate diseases (schizophrenia, multiple sclerosis, ADD, ADHD, Alzheimer's, **Autism**, Parkinson's disease, Huntington's disease)*

Important Steps in Cycle

I won't go over the cycle with you in detail, but I will go over a few important steps (refer to the chart above when looking at these steps, I will talk about why it's important to know it):

Methionine -> SAM (S-Adenosyl Methionine) - This step requires the use of an energy molecule, ATP. **The reason why I point this is out is because if we are metabolically impaired (such as having mitochondrial dysfunction), we produce a low amount of ATP, which means that this cycle is impaired.**

SAM (S-Adenosyl Methionine) -> SAH (S-Adenosyl Homocysteine) - donation of the methyl group (CH₃) to any numerous biological functions as stated above

Homocysteine -> Methionine - this step re-adds the methyl group (CH₃) onto homocysteine to create methionine. **The reason why I mention this is because the methyl group comes from Methyl-THF, which was converted to that state using MTHFR enzyme. What this means is that if you have a mutation in MTHFR, you have an impaired ability to convert homocysteine back into methionine.** Look above again to see what happens when you have a breakdown in this cycle.

(whyser, 2016)

Figure 4.2. Discussion post 2 in thread "Vaccines and Autism" on babycenter.com.

Environmental Factors

Vaccines

How do vaccines (aside from overloading a person's ability to detoxify) can contribute to the biomarkers of autism. I guess the question would now be, can vaccines affect the methionine/folate cycles and affect glutathione production?

One of the most common ingredients in vaccines is aluminum, because it's cytotoxic nature is required to "stimulate" the immune system. Does aluminum affect these things we've talked about so far?

Aluminum decreases the glutathione regeneration by the inhibition of NADP-isocitrate dehydrogenase in mitochondria.

www.ncbi.nlm.nih.gov/pubmed/15486972

Aluminum can cause oxidative damage on cellular biological processes by inhibiting glutathione regeneration through the inhibition of NADPH supply in mitochondria, but only a little inhibitory effect on the glutathione generation in cytosol.

Effect of aluminium metal on glutathione (GSH) level in plasma and cytosolic fraction of human blood.

www.pjps.pk/wp-content/uploads/pdfs...

As the time passed from 0 minute interval to 150 minutes, **after mixing the whole blood with a specific concentration of Aluminium, it was seen that the normal level of GSH in plasma was reduced** with time where as the blank mixtures of plasma showed the little variation of thiol status with each interval of time.

Aluminum-Induced Entropy in Biological Systems: Implications for Neurological Disease

(whyser, 2016)

Figure 4.3. Discussion post 3 in thread "Vaccines and Autism" on babycenter.com.

This thread generated close to 30 comments, many equally scientifically engaged, in the first few hours of posting. While this kind of language and discussion is not representative of most conversations about vaccines and autism in the parenting website forums I observed, the acute scientific angle is not that uncommon. My observations of these online discussions, along with conversations I had with three different interviewees about the autism-vaccine link, suggest that some mothers (from varying education and professional backgrounds) are actively seeking objective scientific evidence for causal links to explain away uncertainty and verify the affective fact—either for their own benefit (as in Sandy’s case, for example) and/or to convince skeptics and pro-vaccine parents that the link is real or at least plausible.

However, also judging by comments online and several pro-vaccine interviewees’ statements, these efforts to rationalize and provide scientific evidence for a “real” (opposed to affective fact) link between autism and vaccines has largely not worked on pro-vaccinationists. This online comment in a discussion about MMR and autism is typical of the (more civil) responses from pro-vaccine parents:

Ok first of all, correlation \neq causation. Second of all, there are many things that have a higher correlation with autism than vaccines. Third, the only study that found a link was debunked, the author of the study admitted to falsifying data and has since lost his license. (carellbaby, 2015)

Further, many pro-vaccine parents expressed somewhat narrow, condescending, stereotypical, or outdated views about how and why vaccine-critical parents still believe the MMR-autism link. Disproportionately more pro-vaccine interviewees, for example, mentioned Jenny McCarthy and Andrew Wakefield than vaccine-critical interviewees

did. For example, pro-vaccine mother Cindy stated: “There’s only the one study where the MMR vaccine supposedly caused autism, and it came out that the guy doctored his information.” Pro-vaccine mom Kristen mused, “I think if they heard like that Jenny McCarthy interview with Oprah, yes, I think a lot of mothers made decisions to not vaccinate, and that was based on emotion.”

VAEs as affective facts of vaccines. In addition to autism, and using the same logics of fear and future threat that solidify autism as an affective fact, most other VAEs (even those yet unknown) can stand in for autism as an affective fact in the vaccination debate. As one mom, Eileen (pro-choice/anti-vaccine), put it (when I shared with her that my own daughter had not had any adverse reactions to vaccines): “Well here’s the thing: You don’t really know if she’s had any reaction to vaccines. Because with [my daughter] we didn’t know she had any reactions to vaccines. We didn’t have any fevers or other signs...” Eileen’s statement constructed for my daughter and for me a (future) threat and unknown risk of vaccines that we may never know was ever “real” or not.

As evidenced by data in this sections, affective facts do not often exist alone as simple or stable pieces of truth—they are implicated in and evolve along the lines of various affective logics, cultural lenses, and socially constructed environments of risk and evidence.

Affective logics of vaccines. This section presents some affective logics at work in the vaccine debate, including *preemptive logics*—derived from extant affect theory literature and bound up in affective facts of future threats/risks—as well as “novel” affective logics I identified through grounded theory analysis as: “*worst case scenario*”

logic (related to preemptive logic), “*I won’t set myself on fire to keep you warm*” logic, a “*bubble logic of immunity*,” and “*give them an inch...*” logic.

Preemptive and operative logics. In short, *preemptive logic* reasons: “This bad thing *could* happen”—regardless of whether it *actually could* ever happen (which we cannot know until it actually happens, and if it does not ever happen, it will always exist as an affective fact/threats)—“so I will take preemptive action to prevent the bad thing that might be able to happen someday.” Examples of preemptive logic in interview and online data were abundant. For example, choosing to *not* vaccinate in order to preempt (perceived) VAEs sometimes constitute affective preemptive logic—that is, for those VAEs that exist as affective facts, such as autism. However, choices to not vaccinate to preempt VAEs widely understood to be “actual” or “objective” facts (e.g., people with egg allergies declining the flu vaccine because it contains egg, which was the case of one interviewee, Carol) would arguably not be an affective logic, at least as defined in the literature cited in chapter two.

“*What if/worst case scenario logic.*” One specific iteration of the preemptive affective logic in the vaccine debate related to the idea of the “futuraity of threat”—that threat always exists in the future—is a “what if/worst case scenario” logic. Because future threat or risk is incalculable and intangible, essentially unknowable, there is infinite potential to imagine a threat as big or small as the imagination can stretch it. Thus, for example, autism, once put out there as a potential threat posed by vaccination, will never disappear as a real potential threat or risk of vaccines.

Samantha, pro-choice, and pro-vaccine for her own family, articulated the affective/future threat logic of “what if/worst case scenario” that was also common among other moms in interviews and online:

As a parent, you’re always worried about “what if,” right? Like, and the worst case scenarios and I guess with vaccines, what comes up, because it seems so invasive is the worst case scenario like, what if this doesn’t end up as being good for my child, right? So, I can totally see that. That it’s... that you would trust your feeling towards it even more than you would trust, you know, a medical professional telling you what to do.

Samantha’s last sentence in that excerpt points to the power of affective logics and affective facts in influencing mothers’ and (and people’s in general) vaccine choices, knowledges, and risk perception.

“I won’t set myself on fire to keep you warm logic.” This logic is especially relevant to the conflict parents face in weighing risks (and values) and choosing between the well being of their own children versus society. The name of this logic came from an excerpt of an interview with Tabitha, who was pro-choice but anti-vaccine for her family:

We all had chickenpox and we never heard about somebody getting serious complications and dying from it. Now, I know that there are immune-compromised children and it could be a real danger for them. However, that’s the same about the common cold... So, while I feel for them and I have a great deal of sympathy, and I certainly I would do anything I could to protect them you know, just like by handwashing and staying in when we’re ill...I feel like asking someone to vaccinate their child when they’ve already decided not to kind of goes

beyond what's accepted in our social code...I'm saying, I am not going to set myself on fire just to keep you warm.

To put it another way, “I’m not going to put my child at risk of VAEs for a minor discomfort disease just to protect your child from potentially severe or deadly effects from the same disease. But I’ll take other preventative, non-risky (for my child) measure to help protect your child and the community.” This is logic played out time and again in pro-choice/anti-vaccine parents’ vaccine choices as described in interviews and online discussions, but not as prominently in pro-vaccine choices, who ostensibly are either willing to set themselves on fire to keep others warm, or they don’t think it is cold enough in the first place to lead to anyone being set afire (i.e., pro-vaccine parents did not employ this logic as much because not many of them perceived vaccines or VAEs to pose considerable risks to their own children—for them, vaccines are win-win).

“Bubble logic of immunity.” In one interview, pro-choice/anti-vaccine-leaning Eileen provided a vocabulary for the affective logics surrounding confusing and conflicting constructions of immunity and the immune system in the vaccine debate:

The ones who choose to vaccinate think they are protecting their children and that the vaccinations are safe. They think, “Okay, I am going to give him this vaccination, there is an invisible bubble protecting my kid”... And then the ones who choose not to vaccinate believe that vaccinations are harmful instead of creating a protective bubble around the kid. The person who chooses not to vaccinate believes that we all have this protective bubble—or that nobody has it [naturally], but we give it to our children by breastfeeding and so on and so forth—and vaccination actually pops the bubble.

The bubble metaphor provides a useful metaphor for understanding how opposing sides in the debate construct immunity: For pro-vaccine, “Vaccines gave my child a bubble (of immunity to disease),” or, for vaccine critics: “My child has a natural bubble and I’m not going to ruin it with a vaccine.” Stating these logics in non-bubble terms can get even more confusing, especially because not everybody uses the same vocabularies (or facts or definitions) of immunity and disease.

For example, many pro-vaccine parents in online discussions, as well as a few I interviewed, expressed discomfort with the prospect of their vaccinated children playing with unvaccinated children. While this seems to make sense on the surface (for those who state it) and does not need further explanation, some vaccine-critical mothers counter with their own logics and facts (affective or otherwise), such as this statement by one pro-choice/anti-vaccine interviewee, Nancy, about parents who do not want unvaccinated children around their own vaccinated ones: “What are they afraid of that makes them not want to let an unvaxxed baby around their kid if the kid is vaccinated—if they truly believe the vaccines work?” The facts of all varieties concerning immunity and the immune system are complicated and thus will not be dwelled on here, but (contested) issues such as herd immunity and “shedding” are often deployed in debates of conflicting immunity logics.

“Give them an inch logic.” A final logic of the vaccine debate I will discuss is the “give them an inch logic” used by pro-vaccine advocates, even “experts” and public health officials. This is not unique to the issue of vaccines, but it was apparent from pro-vaccine discussions online and in interviews that the affective logic of “give them an inch (and they’ll take a mile)” is pervasive and informs many stances, persuasion and

education campaigns, and policy decisions made by, for example, dominant communities of scientists, medical doctors, and public health officials. In the vaccine context, this logic dictates that parents are largely less informed than “experts” are about vaccines, and parents who are misinformed or have misplaced concerns about vaccine risks, if given the opportunity to delay or selectively vaccinate, may take that liberty too far and end up choosing not to vaccinate at all.

Parents in interviews and online at times exhibited this mindset (especially those in favor of stricter compulsory vaccination policies), but it was more boldly seen illustrated in participants’ accounts of, for example, interactions with pro-vaccine doctors or other medical providers. For instance, when vaccine advocates, such as doctors who are pro-vaccine (as reported in both interview and online data), make easily accessible only the minimum of evidence-based information and positive or neutral messages to parents needed to constitute (at least the perception of) informed consent and choice, but, if viewed more objectively or critically, it becomes clear that the information offered operates to profess the benefits of vaccines while downplaying or omitting associated risks—which easily ends up curtailing autonomy and informed consent from parents (because they are not fully informed, unless they have done extensive research independently as well), and also seems to have mixed results as to vaccine choices of parents. On the one hand, some interviewees reported “not knowing any better” about vaccine risks or options when they allowed their children to be vaccinated in the past but ended up regretting (and resenting) vaccinating once they learned more information or experienced a VAE. So, in that scenario, “give them an inch” logic worked at least initially to increase vaccine uptakes. In another scenario, though, parents in interviews

and online described interactions with physicians who effectively (as the participants saw it) attempted to limit parents' vaccine choices (to pro-vaccine) by not informing parents of all vaccine options or balanced information. At least four mothers I interviewed reported leaving an appointment without vaccinating because they perceived a “give them an inch” logic at work and felt manipulated, ignored, and dismissed. “Give them an inch” logic provides a convenient segue to the next section of evidence concerning sources of vaccine knowledge for mothers.

Sources of Knowledge

Finally, this section contains data from interviews and online vaccine discussions that speak to RQ4: *What are sources of knowledge for mothers in the vaccine debate?*

Evidence is given that illustrates how “official” sources of vaccine information—stereotypically objective, rational, and (scientific) evidence-based—are used and regarded compared with more “unofficial” or “lay” sources and genres of information (e.g., anecdotal evidence, vaccine injury stories shared by mothers, “folk” knowledge, celebrities, and “gut feeling” knowledge based on instincts or intuition). I will review findings about specific and prominent sources named by participants, including both “official/expert” knowledge and less “official” knowledge, such as from natural and alternative media, celebrities, friends and family, and other mothers.

Sources of vaccine information included both the originators and conveyors of information, including different media outlets, science and health institutions and associations, government agencies, nonprofits and advocacy groups and websites, the pharmaceutical industry, and blogs and social media. Almost all of vaccine information from these types of organizations was accessed online by participants (though a few

mentioned reading books and watching documentaries as well). Most other sources were individuals, and information was communicated either online or interpersonally. Individual sources of vaccine information included celebrities, friends and family, and healthcare providers. Further, most of the sources mentioned could be roughly categorized as either (a) “mainstream” and “pro-vaccine” or (b) “alternative” (non-mainstream, natural, holistic, etc.) and vaccine-critical. The following excerpts of data include examples of many of these sources used by mothers to explore vaccines and vaccine risks, along with how they characterized the sources as mainstream, alternative, or other.

“Official” and institutional sources. Dominant science and health institutions mentioned during interviews and online as sources of vaccine information were categorized as “mainstream science,” “biomedical medicine,” pharmaceutical companies, and included associations and organizations such as CDC, AAP, NIH, FDA, and WHO, and the Mayo Clinic. By far, though, the CDC was most widely identified among interview participants, and referenced by online discussants, as a consistent and mostly ostensibly credible source of vaccine information, by vaccine proponents and opponents alike (with only a couple exceptions). According to one pro-vaccine mother, Cindy, “What I go to when I have a questions is, number one, the CDC [website].”

CDC. Interestingly, some moms explained that they used the CDC as a strategic source for information due to its perceived credibility among *others* and not necessarily because they themselves had utmost faith in CDC as a source for vaccine information. According to anti-vaccine/pro-choice mom Nancy, for example, “Basically if I'm repeating any information, I use the CDC.gov's information. I don't ever repeat anything

that's not of that website because I feel like everybody knows that that's legit website.”

However, when I asked Nancy if she considered the CDC website as a legitimate and credible source of vaccine information, she replied, “I think it covers what they want you to know but they have to say, they have to put it out there.” Another vaccine-critical mom told me,

I do go to the CDC website. I don't know if it's credible but, you know, my husband and I have slightly opposing views on vaccines. You know he's quite pro-vaccine. I mean he comes from a family who is, you know, all medically trained. Um, so I like to use resources that I think he will find credible. (Carol, pro-choice/anti-vaccine)

Some moms I spoke with said they viewed the CDC as having “all the information there that you need. You just have to dig and read.” For many moms, especially vaccine-critical ones, this meant going beyond reading the readily accessible pages, posts, and articles intended for parent and other non-science visitors to the site; content available at CDC.gov beyond that for general audiences includes linked academic research articles, statistics, epidemiology reports, pharmacology information, and databases of vaccine information. This higher level content is delivered through certain CDC documents and databases including vaccine package inserts, vaccine information statements, and the Vaccine Adverse Event Reporting System (VAERS).

VIS. Vaccine information statements (VIS) are relatively digestible and succinct (one-page) documents overviewing main takeaways that parents need to know (according to the CDC, at least) about vaccine benefits and risks. Vaccine providers (e.g.,

pediatricians) are required by law to supply VIS to patients or their guardians prior to administering any vaccine dose. According to CDC.gov,

Q: Are VISs "informed consent" forms?

A: No. People sometimes use the term “informed consent” loosely when referring to VISs. VISs are written to fulfill the information requirements of the National Childhood Vaccine Injury Act, not as informed consent forms. But because they cover both benefits and risks associated with vaccinations, they provide enough information that anyone reading them should be adequately informed.

Q: Why is it recommended that the patient be given a copy of the VIS to take away following vaccination?

A: In addition to information about the vaccine’s risks and benefits, VISs contain information that may be useful later (e.g., information about what to do in the case of an adverse reaction, and where to find additional information about the disease or vaccine). Patients may choose not to take the VIS, but the provider should offer them the opportunity. (Centers for Disease Control and Prevention, 2015)

While VIS are explicitly intended for parent audiences, but the other platforms of information produced or managed by the CDC—VAERS, inserts, and *The Pink Book*—are designed less accessible to general audiences and intended (implicitly or explicitly) for use by healthcare professionals and other readers with similar scientific/medical background and training.

VAERS. Another source of vaccine risk information accessed by many anti-vaccine-leaning mothers I interviewed or observed online was the Vaccine Adverse

Event Reporting System (VAERS). According to the homepage of its website, VAERS “is a national vaccine safety surveillance program” co-sponsored by the CDC and FDA, and “a post-marketing safety surveillance program, collecting information about adverse events (possible side effects) that occur after the administration of vaccines licensed for use in the United States” (<https://vaers.hhs.gov/index>). Before accessing the actual VAERS database, the website requires users to acknowledge reading and understanding several disclaimers, such as:

VAERS is a passive reporting system, meaning that reports about adverse events are not automatically collected, but require a report to be filed to VAERS. VAERS reports can be submitted voluntarily by anyone, including healthcare providers, patients, or family members. Reports vary in quality and completeness. They often lack details and sometimes can have information that contains errors.

"Underreporting" is one of the main limitations of passive surveillance systems, including VAERS...As an example, a great many of the millions of vaccinations administered each year by injection cause soreness, but relatively few of these episodes lead to a VAERS report...On the other hand, more serious and unexpected medical events are probably more likely to be reported than minor ones, especially when they occur soon after vaccination, even if they may be coincidental and related to other causes.

A report to VAERS generally does not prove that the identified vaccine(s) caused the adverse event described. It only confirms that the reported event occurred sometime after vaccine was given. No proof that the event was caused by the

vaccine is required in order for VAERS to accept the report. VAERS accepts all reports without judging whether the event was caused by the vaccine. (Vaccine Adverse Event Reporting System, n.d.)

Once acknowledging reading and acknowledging those statements, users are taken to another page where they can download VAERS data in CSV (comma-separated value) format to then import into a personal spreadsheet or database applications (which is not an intuitive process for most computer users), or they can use the CDC WONDER online search tool, “an easy-to-use, menu-driven system requiring no computer expertise or special software” (<https://vaers.hhs.gov/data/data>). After electing the CDC WONDER option for viewing vaccine and epidemiological data, users arrive at another page (with the same disclaimer as that quoted above), where they must locate the correct link to enter the database search tool. All of this is to say that the process of simply getting to the site where users can search the VAERS database in itself is not simple.

On top of being somewhat tedious to locate, the task of navigating the “easy-to-use” search tool is not exactly easy to use, at least in my own experience and according to every mom I interviewed who accessed it. The site does provide a series of videos and a nine-page PDF tutorial instructing users how to use the CDC WONDER search tool to access and view vaccine data, but the language used in search options and the data retrieved is highly technical, dense, and certainly not easily accessible to most general audiences. According to those moms who used VAERS (and my own attempts to do so), the platform and interface are also not particularly intuitive or user-friendly. Thus, VAERS, considered in vaccine circles (as told by mothers I interviewed and those online) as perhaps the most comprehensive go-to source for viewing vaccine injury data, is

effectively inaccessible for (I would venture to say) the vast majority of mothers who have to make vaccine choices for their children. Still, four moms I interviewed—all anti-vaccine/pro-choice—had reportedly successfully used the VAERS database in their vaccine research (arguably a testament to not only their dedication to collecting as much information as possible about vaccines and risks, but also the time they have to do so).

Carley (anti-vaccine), for example, described her first experience with VAERS:

Have you been on the VAERS website? Have you gone to the database and looked up deaths? It's really hard to navigate! So when I first went to it, I was like WHOAA. I got frustrated at first... It's a lot a lot of different things to do. And it's scary! It's so scary! And I wanted to know how many, what percentage of reactions are getting reported. And it's very—it's 10% or something? 10 or 15%? So it's not even all there.

Inserts. Another common source of vaccine information referenced by many vaccine critical moms online and in interviews were the package inserts (“inserts” for short) that accompany all Nancygs including vaccines. Inserts are lengthy—often 20-40+ pages—documents of small, dense print and technical language presumably not accessible or known to a large part of the vaccinating population (especially worldwide). As one interviewee, Eileen (pro-choice/anti-vaccine), described it, “they use very obtuse language in the package inserts that is very scientific so that nobody in their right mind can make sense of it.” Further, while VIS are required to be given to every patient/guardian by healthcare providers before administering any vaccine, inserts are not actively publicized to general audiences, though they are readily available online (e.g., at CDC.gov) for those who have resources and knowledge to access and read them.

At least five anti-vaccine or pro-choice mothers I interviewed brought up inserts when I asked about their go-to sources of vaccine information. For one, Carley (anti-vaccine) told me that, when someone new to vaccine research asks her where to start, “I always tell them to read the inserts. Go online and read the inserts and go to the VAERS website. Start there because I don't like to overload them.” As to her own experiences with inserts and VAERS, she described feeling overwhelmed by the task of diligently reading and understanding all of the information provided. Further, when I asked her if the dense, technical language and length of the documents might be prohibitive or inaccessible for some mothers to thoroughly read and comprehend, she answered:

Yeah. But you read an insert from any medication that you get, and it's pretty long. Print is small, you know? But you gotta read every word. And if you don't understand a word, you gotta Google it. And if you still don't understand it, you gotta look for another sentence it's used in. It's hard. But I think it's hard for a reason. Especially the VAERS site. I'm not a moron, but that was like a little difficult for me to navigate through.

Jill, another vaccine-critical mom, also referred to inserts as essential reading for any parent with questions about vaccines:

Honestly, I think if a lot of parents actually took the time to read the insert and the ingredients in their vaccine. I think a lot of parents would choose to delay, and at least not follow the schedule and try and delay them. If not be more selective with what they give their children, because it's kinda scary, the stuff they put in there.

Thus, for vaccine-critical moms I interviewed, and for many moms I observed online, CDC.gov resources like VAERS and inserts were considered essential reading—and

ostensibly accessible and comprehensible for “lay” audiences if they work hard enough to access, read, and understand the information they contain.

Additionally, in online discussions including vaccine-critical moms, vaccine inserts were frequently cited as seemingly definitive sources of vaccine information that all moms considering vaccines (or any medication) for their children should thoroughly read. On the other hand, the popularity among vaccine-critical parents of inserts as decisive sources of vaccine information has caught the attention of the pro-vaccine community, some of whom have been a little more than critical, doubting the average parents’ abilities to accurately interpret all of in information in inserts and the contexts and purposes for which inserts are produced¹⁴).

Mothers as sources of knowledge. Often situated opposite, and even opposed to, the CDC and other “official” and institutionalized forms of knowledge were mothers themselves. Networks of mothers online and off provided ample vaccine information to each other in many forms: anecdotes, experiences, professional and educational knowledge, local and specialized advice, and references to other online information and sources. However, mothers as significant sources of vaccine information were usually found among vaccine-critical participants rather than pro-vaccine, who almost all named pediatricians or family doctors and official sources such as the CDC as their go-to sources of information—ostensibly because those official and ubiquitous sources of information aligned with and fulfilled the information needs of mothers who are pro-vaccine. Mothers under the vaccine-critical umbrella, though, drew heavily from “mom knowledge” and often distrusted mainstream doctors, science, and “official” sources.

¹⁴ For an particularly cynical example of criticism of vaccine-critics’ use of inserts, see <http://www.skepticalraptor.com/skepticalraptorblog.php/vaccine-package-inserts-debunking-myths/>

Distrust of institutionalized and “official” knowledge is elaborate on below (in the section headed “Source credibility), and discussions of mothers’ interactions with healthcare providers appear in several sections in this chapter, but I will provide some more evidence of those parent-provider relationships and interactions here as well as how mom knowledge has been constructed (or has constructed itself) in opposition to “official”/institutional knowledge. Finally, I’ll spend more time and show more data illustrating the networks of mothers that come together to produce, consume, and circulate mom knowledges, which is similar to the idea of assemblages broached earlier in the chapter.

“*Mother knows best.*” Most interview participants, when asked where they go to do research on vaccines, and whether they relied on their own instincts or feelings apart from scientific knowledge, reported consulting both scientific research and “mom knowledge”—knowledge produced, consumed, acted on, and legitimized by mothers based on instincts or intuition, “I know my child best” logics, and often shared in the form of anecdotal evidence, testimony and narratives, especially among mom networks online and in person). Many moms online and in interviews described feelings of superiority in their own specialized knowledge of their children’s specific biologies, health, bodies, and behavior, especially when weighed against doctors’ and science’s knowledge of individual children.

Many of the feelings of superiority of their own knowledge of their children and their bodies were based in affects or feelings including identified as intuition, instincts, gut feelings, and “mother knows best” logics. Instincts, intuition, and “gut feelings” were among the most frequently mentioned affects and often sources of knowledge among

moms. For the most part, mothers recognized value in paying attention to their instincts in their roles as mothers and decision making for their children, though to varying extents. Anti-vaccine mom Carley, whose son's behavior changed drastically within two hours of receiving a vaccination (he became violent a "wild, wild child" and was kicked out of his school for possibly having sensory processing disorder), put a lot of weight on intuition as a way of knowing for mothers regarding what is best for their children: "I totally think it's accurate to say that we ignore intuition way too often—and it's really, really tragic. It is. It can lead to awful things. I wish I would've listened to mine earlier. But I didn't." Most mothers I interviewed, though, had more tempered views of how intuition or instincts should factor into vaccine choices.

When asked if instincts, intuition, or "gut feelings" do or should play a part in vaccine choices, most suggested that mothers should listen to their instincts as far as that involves doing more research and thinking more critically about vaccinating their children (if their instincts are saying "no"), but that reliance on instincts alone would not be the responsible route. Usually, mothers who placed importance on parents' assessing vaccine risks for their children as individuals (e.g., "if you want to vaccinate, great, but it's not right for my child") agreed that instincts should and would (or did) drive them to learn more about the topic rather than make a rash decision based solely on their feelings.

On the pro-vaccine side, though, some moms thought that being influenced by intuition or "gut feelings" was a bad idea regarding vaccines, because, they reasoned, vaccines work no matter what someone's gut feelings tell them. On the pro-vaccine side, for example, Kristen explained, "I mean, the debate on whether or not a vaccine works,

whether or not you should prevent your child getting this terrible, preventable diseases shouldn't be, you know, a gut feeling.”

However, as I learned from many mothers in interviews and online, most mothers did put some trust in their “gut,” and often those gut feelings clashed with what doctors and other medical “experts” told them—and sometimes mothers’ instincts were right, not necessarily about vaccines directly, but more often about changes or conditions in their children that they believed were either caused by vaccines or were cause to not continue vaccines. For example, pro-choice/anti-vaccine mom Sandy saw changes in one of her sons after he was six months old, and by 12 months he had stopped speaking, but her pediatrician repeatedly assured her that it was “normal.” Soon after, he was diagnosed as “classically autistic” by other specialists. Vaccine-critical mom Penny told me in an interview that she noticed changes in her twin girls’ development—growth slowed, behavior changed, and blood began to appear in their stool—but their doctor maintained that “it’s normal” for twins to be small. Another doctor advised her to stop eating dairy and eggs while nursing the twins, and Penny saw immediate changes. Now 6 years old, “one daughter is anaphylactic to dairy and egg. The other one seems to have grown out of dairy and we haven't given her any eggs.” (Of note, the routine flu shot contains egg, though severity of an egg allergy determines whether or not the flu shot would be contraindicated; however, there are other flu vaccines available without egg as an ingredient.)

Another pro-choice mom Tabitha relayed a story told by another mom she co-testified with at their State House to oppose removing the philosophical exemption for vaccines in her area. The mother testified that her daughter received the flu shot and later

complained of soreness in her arm, debilitating headaches, and double vision. The mother called the doctor twice because she felt something was wrong but was told that those symptoms were either “normal” or unrelated to the flu vaccine and advised rest and fluids. During the night, the daughter woke up unable to breathe, and her mother, who lived in a rural area, drove her to the nearest hospital. Her daughter died en route while her mother drove. The parents submitted her body for autopsy to learn the cause of death, and flu vaccine was listed as a contributing factor. Reactions from officials at the time of the girl’s death and members of the panel who heard this testimony five years later were described by Tabitha as “dismissive and unkind” and appeared most concerned with downplaying any likelihood that the flu vaccine may have contributed to the girl’s death. (The panel voted to remove the philosophical exemption option.)

While some of these accounts, especially the latter, are of the more severe anecdotes of VAEs I heard and read throughout my study, it is accurate to say that the vaccine injury stories by mothers (posted around the web, circulate through social media and email, and told over the phone or face to face) as forms of vaccine knowledge largely produced and consumed by mothers are overall deeply and intensely affective and compelling—and anecdotal. And while I cannot say with absolute certainty that any or all of them are factual, that they precisely reflect what happened, or that they accurately interpret the relationship between vaccination and injury or VAE, I did hear enough details and context from several mothers whom I interviewed and from various other sources (even “official” ones) to believe that the knowledge of many mothers about their own children’s bodies and personalities was more correct and more grounded in “actual” or “objective” reality than some of the healthcare professionals and “experts” they

consulted and ultimately deferred to or clashed with. Thus, “mom knowledge” is often affective and instinctual, may draw from a variety of sources and voices (e.g., analyzing CDC data side-by-side with anecdotal evidence of vaccine injury stories; mainstream news sources versus alternative health and news media), and is ultimately communal, which aligns with the earlier discussion about assemblages.

Moms versus science. In vaccine-skeptical circles, scientific knowledge and evidence is often supplemented with or overshadowed by the more anecdotal, subjective evidence (e.g., of VAEs) put forth by parents, such as personal vaccine injury stories, usually as endured by their own children or other children they know. As an example, I asked Eileen (pro-choice/anti-vaccine) how she weighed the risks of specific vaccines: “I look at all of the research out there, all of the positive and negative things that could happen. And then I listen. I ask other moms. I’m so blessed to have the network of moms that I do.”

Vaccine proponents address this issue by arguing that scientists and doctors, as highly educated and specially trained professionals, are the more legitimate experts in the realms of epidemiology, pharmacology, pediatric, immunology, and other areas that give them more expertise than the general public has in matters of vaccine risk, safety, and efficacy. As pro-vaccine interviewee Eloise put it: “I think you have to rely very heavily on [doctors' advice]. That's not my expertise. I wouldn't ask them how to fix my toilet, but that's because that's not what they're trained in.”

Science as vaccine knowledge. At the same time, a common sentiment from many vaccine critics in interviews and online was a distrust in the transparency and legitimacy (sometimes described in terms of reliability and validity) of science and

medical research on vaccines. For instance, many moms told me that, while they considered CDC as a mostly credible source of vaccine information, they also believed that much data is left out of scientific research, especially in the US, about VAEs because of the nature of risk and ethics involved in such research, leaving significant gaps in scientific knowledge about vaccines and their risks. Eileen, a holistic dentist and pro-choice/anti-vaccine interviewee, told me she tried to use credible sources such as PubMed to find credible scientific articles and studies, but she encountered significant gaps in the bodies of literature and knowledge available there: “For example, comparing the vaccinated versus the non-vaccinated population, because that kind of research is not found on PubMed, that makes it very difficult to trust that PubMed is as comprehensive as it should be.”

These gaps in scientific data perceived by many moms eroded their trust in scientific evidence about vaccine risks and efficacy—and many moms described attempting to fill those gaps in data with evidence from moms in the form of vaccine injury stories and anecdotes about VAEs, such as those posted by moms in online groups. Carley (pro-choice/anti-vaccine) described one of her first immersions into an online group about parenting and vaccines:

One time this guy posted in this vaccine education group—he was collecting stories for something—and he said, “I want to know your stories.” And comment after comment after comment—there were deaths in there! Oh my god, I couldn't even read it. But I did go back through the group's history and found so so much info.

Vaccine-critical mothers were full of stories about how they engaged with and privileged mom knowledge in a very meaningful way.

Interestingly, while most vaccine-critical moms agreed on the merits of mom knowledge, they did *not* all agree on the adequacy, legitimacy, or validity of science and evidence-based sources of information. Some embraced the CDC website and its resources (as demonstrated above), while others rejected most mainstream science—the institution, the discipline, the methods, and the ethics—and one anti-vaccine interviewee, Aubrey, went so far as to claim, “All science is evil.” Other things she said during the interview indicated that she did not in fact believe all science was evil (even though I challenged her to reflect on and explain that statement further, and she maintained her stance), but rather than she aligned “science” very closely with mainstream institutionalized science, biomedicine, pharmaceutical industry researchers, and others revolving around vaccines, medicine, and genetically modified organisms (GMOs)—and manufacturers of products or knowledge in general that were rejected by her strict crunchy mom values. While most vaccine-critical and crunchy moms were overall critical of the iterations of institutionalized science and biomedical paradigms named in this paragraph, most were not as definitive about it as Aubrey. Theories among this group that affected how they perceived sources as credible or not are explained later in this chapter. On the other hand, many vaccine-critical moms, crunchy or not, did embrace the CDC and other official sources of information as having comprehensive data, even if in raw form, and as being a generally accepted source among most groups of people for credible vaccine information.

Non-CDC sources of knowledge. Individuals were the second most frequently referenced type of sources of information about vaccines and associated risks by interview participants—and online discussions about vaccines very commonly serve the very purpose of eliciting and sharing vaccine information among individuals. Thus, individual people (and not only organizations, associations, and institutions) were influential in mothers’ vaccination choices and risk perceptions.

Some of the most influential sources of information for many parents I interviewed were medical and healthcare providers. For pro-vaccine mothers, these largely included pediatricians and family physicians who were typically “traditional” and pro-vaccine; several also had closer friends, family members, or partners who were doctors, nurses, or otherwise trained in an area related to vaccines. For vaccine-critical parents, especially crunchy moms, those healthcare providers tended to fall more into “alternative medicine” categories such as homeopaths, holistic doctors, naturopaths, integrative physicians, chiropractors, and immunologists. Some parents with children with uncommon medical conditions, such as seizure disorders, severe allergies, or autism spectrum disorders, also relied on specialists in those areas to deliver vaccine information tailored to their children’s specific needs. As I discussed earlier, providers of MTHFR testing (who seemed to occupy a range of specialties, degrees, licenses to practice, etc.) were also helpful and valued sources of vaccine information by a handful of participants who used them (all were vaccine-critical among interviewees).

Non-celebrity, less “official” individuals who operated as sources of vaccine information for moms interviewed and observed online included people within mothers’ personal networks: other moms, family, friends, and partners in childcare (e.g., fathers,

spouses). One mom, Cindy (pro-vaccine), remarked: “My husband is a doctor, so I mean, it’s not my experience, but it is a pretty hot topic in our house. [Laughs] We’re *very pro-vaccine*.”

Additionally, celebrities—in entertainment and popular culture (e.g., Jenny McCarthy), as well as those famous primarily within vaccine circles (e.g., Andrew Wakefield, Bob Sears, Joseph Mercola, Paul Offit, and Barbara Loe Fisher)—were mentioned by several participants in both critical and positive lights. One mother I interviewed shared a particularly compelling story about celebrity influence. Pro-choice/anti-vaccine mom Sandy, who has a son with autism, shared her story involving celebrity mom and (infamous in some circles) vaccine skeptic Jenny McCarthy. Sandy told me that noticed changes in her son’s speech and behavior when he was six months old but could not identify the reason for them until she heard McCarthy describe her own son’s autistic behaviors in an appearance on television:

It was honestly one of those situations where I could have not been in the room and he wouldn’t have noticed. My gut was telling me that there was something wrong and I heard Jenny McCarthy say the symptoms and I was just like, that’s what it must be. I don’t know. The pediatricians are not giving me any answers so what else could this be.

Sandy’s “gut” feeling was confirmed soon after by medical specialists. It is worth noting that Jenny McCarthy is not only a “celebrity” source of information—she is also a mom.

Perceptions of knowledge from the “other” side. Pro-vaccine commenters online and in interviews had several things to say about the perceived rejection of

scientific evidence by anti-vaccine and vaccine-critical moms, many of whom privilege mom knowledge above or on level with science and doctor knowledge, especially when it came to their and their children's individual bodies and needs. Pro-vaccine responses typically address the capacity of non-science-trained audiences to accurately understand the "nature" of scientific research or interpret data, evidence, and conclusions—along with occasional blanket statements about the superiority of science over all other ways of knowing, such as these remarks by pro-vaccine interviewee Cindy:

I honestly don't understand why, when presented with scientific data, people go the other way. Science is the *only* thing—the only *belief system* if that's what you want to call it—in the whole world that *begs* to be proven wrong. If you can actually *prove* it *wrong*, then science *changes*. That's what's so *great* about it! It's not just believing something because it's always been done that way; it's believing something because it's a proven *fact*. And if you prove that it's *not* a proven fact—that it's *disproven*—then the science *changes*. It *evolves*. So I don't understand people that don't believe things that are *proven*.

Curiously, pro-vaccine parents were critiqued by vaccine-critical parents probably at least as often for not having done their (pro-vaccine) own due diligence in researching vaccines and vaccine risks with intellectual rigor—or not researching or understand information at all. Pro-choice/anti-vaccine mother Nancy told me during one interview:

I think a lot of parents [who vaccine] don't really care one way or the other. I think a lot of people just do it because that's what you have to do. I did have one friend say that she thought moms are stupid for not vaccinating, because she was like, "The measles kill you!" And was like, "The measles don't kill you!"

[Laughs] She's actually missing point. She just didn't research. She did what her doctor told her to do.

In all, the orientation of parents to vaccine choices (from pro-vaccine to pro-choice to anti-vaccine) did not necessarily correspond with their time spent researching, “accurate” comprehension of technical and scientific information and data, or other markers of intellectual rigor and curiosity; instead, the level of passion moms felt about vaccines from whatever perspective was more indicative of the intensity and thoroughness of online research activity.

Labeling sources. Participants commonly distinguished sources based on “mainstream” versus “alternative” (“natural”/“holistic”/“crunchy”/“homeopathic”/“anti-vaccine”/“pro-choice”/“vaccine-free”/etc.) orientations to healthcare and broader lifestyle choices. Typically, the sources of information brought up by moms in interviews and online either explicitly identified as a certain vaccine orientation, or the nature of their messages and content made it easy to draw conclusions about their orientations. For example, many mothers who questioned vaccines mentioned drawing from NVIC.org (National Vaccine Information Center) for vaccine information. NVIC is an established source in the pro-choice movement, and its “About” page and mission statement clearly reflect its values, purposes, and orientation (at least judging by what is on the surface):

OUR MISSION: The National Vaccine Information Center (NVIC) is dedicated to the prevention of vaccine injuries and deaths through public education and to defending the informed consent ethic in medicine

...NVIC does not advocate for or against the use of vaccines. We support the availability of all preventive health care options, including vaccines, and the right

A pro-choice mom, Carol, explained: “I think when you start trying to be middle of the ground, you just come off as being anti-vaccine which is unnecessarily true.”

Source credibility. Participants and online discussants made frequent mentions of how credible they perceived different sources of vaccine information to be, and why. They also described how trust in (and perceived credibility of) sources of vaccine information influenced their beliefs about vaccine-related risks. For example, Eileen (pro-choice/anti-vaccine) explained that she did not trust mainstream sources of scientific and health information including FDA and PubMed because they do not include studies that, for example, compare vaccinated versus unvaccinated populations on a large scale. She also explained at length her distrust in information from pharmaceutical companies that manufacture vaccines due to their strategic, deliberate use of propaganda and marketing research to manipulate emotions of certain demographics in order to turn profit: “They are doing the market research and finding specific buzzwords to use to elicit the most effective targeted emotional response that will get the sales they want. And they are very deliberative about it.” Profit-obsessed pharmaceutical executives also caused Eileen to not trust that their motives were driven by care or concern for consumers, workers—the “little people”—or safety of their products: “they don't care about the safety of anything. That's not what they are driven by, they are driven by profit only and that is the US, they call it capitalism.”

Another interview participant, Tabitha (pro-choice/anti-vaccine) described a common source of distrust in vaccine research and information produced and disseminated by the government (and in a kind of collaboration with pharmaceutical industry). She and several other vaccine-critical mothers in interviews and many more

online accused the pharmaceutical industry of funding the research and trials on their own products, creating an essential conflict of interest. As she described it, “Science is largely funded by people who benefit from the results. So we are not getting a lot of info or data because they are looking for data that says vaccines are safe.”

Summary of Results

This chapter reviewed results of grounded analysis of interview and online data that I ultimately grouped into eight major themes: (a) *maternal thinking*, (b) *science and knowledge*, (c) *individual versus greater good*, (d) *fear*, (e) *bodies*, (f) *privilege, access, and choice*, (g) *silence, shame, and stigma*, and (h) *affect in publics*. Data under each theme contributed to answering one or more of my research questions, as displayed in this chapter. The next chapter will discuss theoretical and practical implications of these findings for public relations and the feminist affective turn.

Chapter 5: Discussion

While results of this study supported much scholarly and practical knowledge in public relations, risk, the feminist affective turn, postmodern feminist theories and critiques of knowledge, and the vaccine debate, they also challenged many assumptions in extant literature as well as building on existing theory and offering points of departure for future research. A publics-centered approach and a feminist affective lens in this project opened up space for new ways of understanding publics as embodied, affective, and political, with implications for both theoretical and applied wisdom in public relations. I found several ideas and trajectories that have emerged from the feminist affective turn and, as I will elaborate on below, have potential for a re-envisioned affective theory of publics in public relations research—that is, publics as passionate, political, and embodied. Additionally, affective logics and politics of care and fear were central to all interview participants (and most if not all online vaccine discussants), which contributed significantly to mothers' ideas about and prioritizing of individual versus collective greater good as related to their own and others' vaccine choices.

The inductive nature of this study rendered visible findings unanticipated, including a pervasive silence in academe and science surrounding the vaccine debate specifically, but that can also be relevant in broader public relations work that is bound up in the (re-) production and competition of hegemonic social orders. On the other hand, sites of privilege that enabled or hampered mothers' access to informed consent, informed choice, and autonomy in vaccine choices became obvious, as well as assumptions about privilege, choice, and access that some participants universalized to all other mothers who make vaccine decisions. Additionally, I found that a loosely shared

maternal standpoint was salient in most participants' thinking and communicating about vaccines. This chapter will lay out these findings, situating data presented in the previous chapter in conversation with literature reviewed in chapter two, particularly in response to my research questions: *How is feminist affect theory embodied by mothers in the vaccine debate? How do mothers understand risks as affective facts in the vaccine debate (if at all)? What affective logics are used by mothers in the vaccine debate (if any)? What are sources of knowledge for mothers in the vaccine debate?* First, though, a note about research questions and answers in qualitative inquiry is useful here.

“Answering” Qualitative Research Questions

Koro-Ljungberg and Barko (2012) began their essay, which problematized normative traditions of research questions and answers in qualitative inquiry, by asking: “What Does a Question Want?” (p. 256). (The answer, of course, is an answer.) Koro-Ljungberg and Barko found fault in the question-and-answer process of qualitative research that operates to generate straightforward and presumably definitive answers to complex and ongoing research problems, arguing that such answers are typically “taken for granted and assumed to provide essential and evidence-based knowledge” and “treated as an endpoint for research indicating a closure and the end of a text, interpretation, and dialogue” (p. 256). In other words, they argued that, “‘Corporative science’ calls for truth and generalizable answers that are not to be interpreted, deciphered, or translated” due to impulses to gain “increased control of knowledge and research practice” (p. 256).

The problem with convenient answers (to research questions) is that those answers are too often assumed to be definitive, correct, and stable (Koro-Ljungberg &

Barko, 2012). Koro-Ljungberg and Barko (2012) did not suggest doing away with research questions themselves in qualitative inquiry, but rather offered an alternative way of conceptualizing such answers—as *assemblages*. They proposed how answers-as-assemblages would look in the context of qualitative research, describing an

assemblage as an anti-structural concept that permits the researcher to speak of emergence, heterogeneity, the decentered, and the ephemeral in nonetheless ordered social life. Assemblage is opposed to modernist accounts of structured and ordered life or societal explanations related to grand narratives framing the appropriate uses of answers. (p. 258)

Thus, Koro-Ljungberg and Barko problematized both questions and answers—the traditional deployment of research questions (especially in qualitative research) in the service of producing authoritative answers used to affirm or produce instrumental knowledge in modern and neoliberal iterations of scientific inquiry.

Again, Koro-Ljungberg and Barco (2012) did not propose abdicating research questions that guide qualitative research, but rather argued that the purpose or expectations of research questions should not be the generation of neat and categorical answers to “messy” problems and questions. In the same vein, my research questions did not—and were not meant to—produce simple and conclusive answers; on the contrary, they were designed to open and explore new ways of understanding publics and affect in public relations research. This purpose of research questions can be seen in the previous chapter, where, for example, the findings corresponding to RQ2 and RQ3 could not believably be divided into two sets of answers to two different questions. The discussions and conclusions drawn in this chapter intend to further reflect the open and contentious

nature of “answers” I found in this study by leaving open opportunities for alternative interpretations and ultimately bringing forward even more questions than answers.

Organization of Chapter

I will begin the discussion by briefly reviewing basic concepts in risk and affective facts and logics in the context of my findings. The remainder of this chapter’s main discussion is organized around six themes grounded in the data: First, I will propose how the vaccine debate embodies feminist affect theory, especially in areas of Public Feelings, community and agency, body politics, biopower and biopolitics, and publics as passionate, political, and postmodern assemblages, ultimately proposing a (postmodern) feminist affective theory of publics for public relations. I will then turn to a discussion about maternal thinking and feminist standpoints in this example of publics-centered public relations and risk research. Next, I will explain affective logics related to fear and care that inform ideas about individual versus collective wellbeing related to vaccines—and problematize that popular dichotomy. Following will be a discussion of the roles of dominant science in the vaccine debate, interrogating assumptions and claims (which exist implicitly if not explicitly in much dominant public relations literature) about the epistemic authority of science versus “other” ways of knowing. Finally, I will explore the culture of silence I encountered and learned about in the vaccine debate that is at least partly (re)produced through processes of shame, stigma, and threats of backlash or discrimination—which, I will argue, is in fact *not* particular to the vaccine debate, but to more global institutionalized knowledge, especially emerging from dominant science and academic research communities. I conclude with a brief summary discussion of practical

and theoretical applications of feminist affect theory in public relations, followed by limitations of the present study and future research directions.

Affective Logics and Facts

Affective logics are ways of thinking or cognitive rationalizations that are intrinsically (sometimes invisibly) tied to feelings, emotions, moods, and affects and deviate from formal Aristotelian logics. They are often situation- and mood-specific and thus do not follow linear patterns of thought and cannot be too precisely defined or predicted, but they operate in the everyday and mundane routines and encounters with other people, concepts, events, and objects. Further, because they are tied to moods and certain situations, there is a degree of predictability in affective logics—not in the scientific probability sense, but in the sense that we can at least loosely identify a “logic of fear,” for example, that might likely be engaged by people when they are afraid. Understanding and identifying affective logics linked with certain issues and objects can be useful to public relations practitioners and researchers to better understand publics’ reactions and perceptions of, for example, risk. Affective facts, though, might be more difficult to pin down.

Taken alone, the part of Massumi’s (2010) definition of an affective fact as one that does not necessarily correspond with “actual” reality, it is easy to classify any inaccurate or “wrong” statement uttered as if “true” as an affective fact. However, not every “wrong statement” necessarily constitutes an affective fact under Massumi’s definition of affective facts as an uncertain but maybe possible future threat. The most obvious examples of affective facts on the “pro-vaccine” side were VPDs and outbreaks, while affective facts on the “anti-vaccine” and vaccine-critical side were typically

VAEs—both threats that may or may not manifest if vaccination does or does not occur, but we will never know for sure, at least in most cases, because preemptive action has been taken to (probably) forever preempt them from manifesting. For example, on the pro-vaccine side, an affective fact is the threat of, say, measles returning to the US in full force, years after rates of incidence have declined so significantly that “outbreaks” of 100 cases or so can create media frenzies (when in the past it was as common as, say, chickenpox was during my own childhood—yet even chickenpox is much more rare now thanks to varicella vaccines). The threat of measles returning with vengeance to the US in the absence of widespread vaccination against it (in the form of the MMR vaccine) is an affective fact because, as long as vaccine rates remain relatively high and measles outbreaks and incidences remain relatively low, we will not know if a very significant drop in MMR vaccines would lead to resurgence of measles—yet the threat of it (measles returning if vaccination rates drop) still exists and always will for the foreseeable future. Along the same line of reasoning, we cannot say with any certainty if a child who did receive MMR would have gotten measles if she or he had not been vaccinated. The same logic of affective threat as fact can be extended for most or all VPDs, and the same goes for VAEs: We do not and cannot know if individual children who do not receive, for example, MMR would have been adversely affected (say, by autism or other VAEs) if they *had* been exposed to the shot.

I would argue that an affective threat as affective fact, according to Massumi (2010), is ontologically different from an objective fact or other types of risks not conceived out of fear of unknown potential of future threats that are so politicized as vaccines and related public health and environmental issues. Climate change and GMOs

are two issues that political and anatomically resemble vaccines as affective facts in that perceptions of associated risks are conceived as posing unknown future threats and are very politically driven. Research in public relations might probe further to ask whether affective facts are more or less compelling or influential for publics when compared to less politicized, affective, and public risks not based in fear of uncertain and unknowable future threats.

Risk Communication

Conceptual areas in risk and risk communication research overlapped my findings. Several risk communication scholars wrote about cultural and critical approaches to risk communication research that are grounded in specific social contexts and discourses (e.g., Casiday, 2007; Demetrious, 2006; Leitch & Motion, 2010b). Specifically, Casiday (2007) argued that risk is not neutral or culture-free, but rather bound up in norms, beliefs, and values embedded in social discourses. For example, at least in the case of vaccines in the US, risk perceptions are informed by Western and neoliberal values of individuality and autonomy versus community and discourses of citizenship (Casiday, 2007). Interview participants and vaccine discussants often tangled over philosophical and practical tensions between individual right to choose regarding vaccines, and responsibilities of citizenship and duty to the community and societal well-being. In another critical take on risk and “active publics” in public relations, Demetrious (2006) proposed the marriage of risk society and network society has substantively changed the landscape in which publics perceive and make decisions about risks, at least in the Western world. Her definitions of risk as “something hazardous, global in scale, insidious, and perhaps slowly incubating to threaten in different times and places” (p.

105) and network society as “fueled by the decentralisation of media power through the Internet and the creation of powerful and articulate online communities” (p. 106) speak to how risk—as global hazard of uncertain future potential and threat—and the Internet have converged in the vaccine debate. Further, Demetrious’ definition of risk in risk and network society aligns with Massumi’s (2010) postmodern definition of unknown future threat as affective fact, indicating that an affective lens—feminist and/or postmodern—might open up new ways of understanding how risks operate in the context of risk+network society.

A Feminist Affective Theory of Publics

This final section of discussion highlights how a feminist affective turn in public relations can contribute to theoretical and applied knowledge. Specific trajectories of feminist affect theory to be discussed in the following pages in relation to public relations are (a) conceptualizations of publics as passionate, political, and assemblages; (b) Public Feelings, “ugly” feelings and implications for agency and community; (b) postmodern feminist theories of body politics and biopower; (c) affective facts and logics, especially in the context of risk, including “what if/worst case scenario logic,” “I won’t set myself on fire to keep you warm logic,” “bubble logic of immunity,” and “give them an inch logic”; and (d) affective ethics in public relations praxis and scholarship.

An affect theory of publics. Affect theories engaged in this project and reviewed in chapter two have value for how publics are theorized and understood in public relations. As I explained in chapter two, feminist affect theory is not necessary postmodern, and vice versa, but the feminist impulse to be political and the critical sensibilities of postmodernism can be selectively combined for strategic purposes in both

theory and praxis—or not (if it does not make sense to incorporate one or the other for a certain project or purpose). Below I will explicate a feminist affect theory of publics and a postmodern theory of publics, which, as I will explain below, can be taken together or separately to broaden and deepen public relations theory.

Politics and passion: A feminist affect theory of publics. Motion and Leitch (2010a) called for adding *context* to public relations theories. In the same vein, feminist affect theorists emphasize the importance of considering the political nature of social contexts in which publics exist to better understand publics themselves. Political philosopher Mouffe (1999, 2014) has developed a theory of passionate politics that recognizes the affective dimension of political identification (e.g., the process of identifying as pro-vaccine, pro-vaccine-choice, crunchy, etc.), acknowledges the divided and divisive nature of social orders (i.e., collective sociopolitical identities, at least in democracies, are always staked on a “we/they” regime), and envisages how adversarial collectives (political and social) can be brought into conversation with each other in public spheres in ways that allow the expression of irreconcilable passions. These theoretical “passionate” public spheres would not necessarily guarantee the inclusion of all voices or claims—and in fact, Mouffe (2014) argued that we need consider the question, “must all positions be considered legitimate and must they be granted a place inside the agonistic public sphere?” (p. 153). The vaccine debate is a prime context to use to illustrate how this question would play out in a public relations context. For example, it is necessary to critically reflect on whether—if the science does indeed stand behind vaccines as strongly as it is interpreted to us by prevailing “authorities” on the matter (e.g., CDC, mainstream science and medicine, WHO)—whether the anti-vaccine and/or

pro-choice collectives should be considered “legitimate” political adversaries welcome to engage in open dialogues in public spheres with the prevailing hegemonic pro-vaccine voices, or whether their modes of discourse and communication and the nature of their claims are so outside the realms of what would be considered “legitimate” in democratic deliberation that they should be excluded on the basis that a fair debate or dialogue is not a possibility.

On the other hand, it is also important to recognize the hegemonic nature of the pro-vaccine movement in the sense that “The social is constituted by sedimented hegemonic practices...practices that conceal the originary acts of their contingent political institution and that appear to proceed from a natural order...Social order is therefore hegemonic in nature, and its origin in political” (p. 151). Thus, public relations, when deployed in the service of dominant social institutions *or* opposing ones (e.g., in activist public relations) is implicated in the reinforcement of established hegemonies or the establishment of new ones. While a few public relations scholars have interrogated the practice’s relationship to social hegemonies (e.g., Roper, 2005), more public relations theory should continue to reflect on the roles that public relations plays in hegemonic social orders and the practical implications that has on publics and organizations.

Mouffe (2014) advocated for “passionate pluralism” and passionate discourse that does not exclude affects from normative constructions of public spheres and deliberation; indeed, according to Mouffe, affect is inherent in any political and social identity, collectivity, and subjectivity. Thus, following Mouffe’s logic, it is not only the anti-vaccine and pro-choice movements that are highly emotional or affective—we must also consider how the pro-vaccine movement not only uses affect strategically, such as in

persuasion campaigns, but also has affective logics and political motivations structuring and underlying all aspects of the movement. And this does not only apply to the vaccine debate—all social movements and social orders are essentially affective (Mouffe, 2014). Feminist affect theory is a lens for public relations to interrogate and reveal affective processes in publics, organizations, and relationships. The next section will shift the focus from the vaccine debate as context to the feminist affective turn as it is embodied in the experiences shared by participants in this study (and in the vaccine debate), with an eye to how feminist affect theory can be deployed in public relations research and practice to open new ways of understanding publics and using that knowledge ethically to improve public relations knowledge, practice, and, ideally, society.

Assemblages: A postmodern affect theory of publics. Another useful theory deployed in postmodern feminist affective turns is the Deleuzian concept of *assemblages*. Explained in more detail in chapter two, the idea of assemblages in postmodern affect theory replaces notions of fixed structures or substances of people, organizations, and other objects, and instead focuses on the *relations* between people, objects, information, environment, and other matter. Assemblages are processes, in motion or “in flight,” and tend to be unpredictable, self-organizing, and constantly reassembling in different ways in response to external and internal stimuli (Deleuze & Guattari, 1988). According to Fox and Alldred (2013), “Within an assemblage, any relation or combination of relations may affect, or be affected by another element in the network” (p. 773). If some of these properties of assemblages sound familiar, it might be because of the connection to chaos and complexity theories, or postmodern systems theories, which has been used in crisis literature in public relations (Gilpin & Murphy, 2008; Sellnow & Seeger, 2013). But

unlike extant work on complexity and chaos theories in crisis or public relations, Deleuzian postmodern theory of assemblages adds an affective dimension by conceptualizing affect as the driving force behind assemblages' organization, trajectories, disassembling, and even periodic stasis (Deleuze & Guattari, 1988). To put it another way, affect replaces traditional notions of agency in Deleuzian theory (Fox & Alldred, 2013). Imagining publics as assemblages, then, privileges affect in considerations of how and why publics organize and act; however, it also *complicates* conventional notions of affect in the social sciences, including public relations, in that Deleuzian affect theory (the same that inspired Massumi's work and definitions of affect) renders affect essentially unidentifiable—and un-measurable, un-operationalizable, un-qualifiable, and the like.

Passionate assemblages: A postmodern feminist theory of publics? This discussion explained theoretical implications of both passionate politics and postmodern assemblages for public relations' theories of public, but also takes into consideration the practical limitations of (especially) postmodern theories of affect (including assemblages) for use in praxis and in social science research. As such, I propose that a feminist affect theory of passionate politics and publics (Mouffe, 2014) and a postmodern affect theory of publics as assemblages (Deleuze & Guattari, 1988) can be combined to politicize publics while complicating traditional theories of affect (e.g., as emotion)—or used singularly, for example in quantitative research that does not allow for postmodern definitions of affect, but in which feminist politics of publics may still be workable and useful.

Public feelings, ugly feelings, agency, and community. *Public Feelings*, as described by Cvetkovich (2012) and in chapter two, is not exactly a theory, but more of a queer, feminist, political project, a collaboration or movement of academics, artists, and activists with an emphasis on de-pathologizing “negative” feelings (e.g., depression) and reconceptualizing them as sites of publicity and visibility, political struggle and agency: political depression (opposed to clinical depression) is a site of agency for those politically depressed, rather than a psychological condition that can be almost paralyzing and create permanent impasses—something like suspended agency. In other words, *Public Feelings* de-pathologizes negative feelings or affects and turns them into sources of agency and politics with enormous community-forming capacities. Feminist affect theory projects such as *Public Feelings* and related works (see Ahmed, 2010; Berlant, 2011; Ngai, 2007), rather than focus on “fixing” bad feelings, look to the *sources* of those feelings.

For instance, instead of assuming that depression is the root problem that needs to be “fixed,” feminist and queer affect theorists look to society for what is causing that depression—failure to live up to impossible standards of happiness, consumption, and leisure all at once in an impossibly demanding neoliberal economy of labor and new consumer culture (e.g., Ahmed, 2010; Berlant, 2011)? Impossible demands for productivity of graduate students, adjuncts, and junior scholars that lead to social isolation, fierce competitiveness, not enough time, and even less money (Cvetkovich, 2012)? These social sources of what may be termed “ugly feelings” (e.g., anxiety, paranoia, envy, disgust; see Ngai, 2007) can also be located in the vaccine debate for many mothers I observed and talked to: *anxiety* about vaccine choice or stigma; *paranoia*

about conspiracies between Big Pharma and the government and doctors; *guilt* or *regret* about making the wrong vaccine choices for children; *fear* of needles, vaccines, diseases, stigmas, asking questions, and causing children to suffer vaccine injuries; *disgust* at vaccine ingredients; *heartbreak* over images and anecdotes of children suffering from VPDs and VAEs (or the momentary pain of a needle injecting a vaccine); *anger* and *frustration* and *vulnerability* and *shame*—to name a few.

All of the affects listed above and many more (including “prettier” ones) were mentioned explicitly by interview participants and in online discussions. Resisting the urge to assuage these negative affects or avoid them altogether using various communication “best practices,” feminist affect theory de-problematizes those feelings in mothers and re-problematizes the processes and norms in society that cause such widespread experiences of those feelings. This shift in focus from researching to find ways to fix a problematic feeling experienced by a public (or several members of a public or publics), to examining society to find the problematic source of the public feeling (if it *is* problematic), has practical and theoretical implications for public relations, risk communication, and the vaccine debate.

Take, for example, *shame* as a negative affect that most communication researchers (depending on their field) might feel compelled to assuage. They might find that incivility and rhetorics in the vaccine debate online creates cultures of shame that make some vaccine-critical moms feel publicly shamed; they might make recommendations to practitioners to take steps to foster more civil debate online. Assuming that were accomplishable by communication practitioners (or anyone else), would making online debate more civil fix the problem of shame among vaccine-critical

moms? (And is that even a goal they desire?) A feminist affect approach would look beyond the shaming that occurs at the online debate level and instead, perhaps, end up at the suppression of dissent that occurs on a much more global level and trickles down to other areas of society and debate as a possible source of shame.

Of course “fixing” the suppression of dissent problem in the institution of dominant science and mainstream medicine is an optimistic goal, but the process of getting there reveals the many layers of communication, power, and politics that are implicated in the suppression of dissent at the top levels of scientific research that ultimately may be contributing to shame felt by individual mothers for their vaccine choices—not to mention fear, anxiety, paranoia, guilt, vulnerability, and so forth. (And, if it is the case that suppression of dissent from high-level sources and “authorities” such as CDC contributes to prevalence in feelings like shame and anxiety among mothers, it would be ironic given how much science has invested to distance itself from emotion, feelings, subjectivity, and politics). Thus, an organization-centered public relations approach to addressing feelings of shame among mothers who, for example, are socially isolated (self-induced or not), suffer sometimes-traumatic attacks on their parenting choices, and/or falsify children’s medical records to avoid telling healthcare professionals they are not fully vaccinated, practical suggestions would include fostering dialogue and boundary spanning between different subjects and institutions within and with a relationship to mainstream science and medical communities.

Further, from a publics-affect-centered perspective, public relations scholars and practitioners can use feminist affect theories like public feelings to gain insight into what moves publics, bonds communities, and drives political agency (as anger often does) or

suspends agency (as in the case of shame)—not instrumentally in the service of accomplishing certain organizational goals, especially if they are for profit and not in the primary interest of publics or society, but to gain knowledge about publics that will be a point of departure for ethical, care-centered, and social justice-oriented communication practices.

Feminist affective ethics for publics-centered research. Bertleson and Murphie (2010) set forth an affective philosophy of ethics grounded in Felix Guattari's postmodern concept of a "logic of affects," especially as put to work in the current struggles over affective distribution at the core of political and everyday life...to a letting go of 'archaic attachments' to often hierarchical 'cultural traditions'...in favor of a 'subjective pluralism'" (p. 139). Guattarian affective ethics rejects rationalistic and social-scientific impulses to "capture and control" or "micro-colonize" everyday affects (or "little affective events") among publics in the service of a "rational(ist) elite" (e.g., scientists); Guattari critiqued social scientists of "attempts to mobilize affect, only in the service of its subsequent capture in a reductive and elitist 'logic of delimited sets'" (Bertleson & Murphie, 2010, pp. 140-141). To put it another way, Guattari's postmodern affective ethics rejects social science's impulses to study and understand social phenomena such as affect in reductive ways that often end up operationalized, categorized, and parsed into tables and typologies. Affect according to Guattari and fellow postmodern affect theorists is too complex, too immanent to render into a table or typology, and to do so limits its potential for publics. Adding another ethical dimension, Guattari rejected the appropriation of affective knowledge of publics for instrumental use by those in power, which would also include dominant institutions (e.g., science,

medicine), capitalistic organizations and industries (and their executives), and government authority. Listing prominent social figures in the past who have been accused of “colonizing affects” of publics to wield in manipulation or propaganda campaigns, Bertleson and Murphie named Edward Bernays and Walter Lipmann, two seminal figures in U.S. public relations.

Indeed there are obvious connections between both social science (the major tradition of public relations research) and public relations practice, and the reductive and instrumental uses of affect that Guattari rejects as unethical. While Guattari’s affective ethics is arguably not universally practical for public relations practice or research (similar to the infeasibility of the theory of assemblages for much of the same research, as I suggested in the above discussion of publics), there is the possibility of opening up spaces where his postmodern ethics might be theoretically and even practically useful for the field. For example, if affect is understood in the sense of Public Feelings—political, communal, and giving or suspending agency (see the subsection above)—an affective ethical approach to studying public affects would recognize the complexity and plurality of those affects and affective subjects (i.e., people) and choose flexible and inductive methodological approaches that accommodate rather than reduce those pluralities into operationalized categories of feeling or emotion. Perhaps more primary for an affective ethics of public relations, though, is Guattari’s plea to not use knowledge gained about publics’ affects in the service of dominant social institutions or organizations, but in the sincere interest of the publics. While this might clash with public relations’ capitalistic agendas and purposes, especially when practiced for for-profit organizations, there are

other opportunities to deploy a postmodern affective ethics in public relations practice and research.

Publics-centered research in areas of public relations apart from the corporate and for-profit—such as risk and health communication, some crisis and disaster communication, development work, activism and advocacy, and some nonprofit practices—which (potentially or ideally) operate in the service of publics rather than capitalistic institutions and corporations. While there is certainly still potential in those areas of practice to colonize public affect for the advancement of organizational goals that do not align with the publics' interests, there are also opportunities to do public relations for publics' wellbeing and safety and for social justice goals. This study is one example of a publics-centered approach to public relations research that deploys an affective ethics as described above (excepting the inclusion of a table or two) that also offers practical implications for the field as well as theoretical and ethical.

Maternal Thinking About Vaccine Risks

Discussions of vaccines online and in interviews explicitly and implicitly exhibited the force of maternal thinking (Ruddick, 1980, 2004) in mothers' perceptions of risks associated with vaccinating (or not). Issues related to informed consent and choice (such as that on the part of infants who cannot give consent but are also at the most vulnerable ages for many vaccine-preventable diseases) can create anxiety, conflict, guilt, feelings of “being stuck,” or other “ugly feelings” (Ngai, 2007) or affects that can impact mothers (as well as other guardians and caregivers) emotionally in ways that are difficult or not impossible to resolve.

Further, public communication about vaccines as part of the vaccine debate can exacerbate these tensions, intentionally or not, such as pro-vaccine campaigns that target mothers with fear-based emotional appeals. Such campaigns may aim to augment fear about the risks of *not* vaccinating in order to persuade more mothers to follow official recommendations for vaccinate their children, thereby increasing overall vaccination rates and herd immunity that is presumed to work in the interest of the greater good. However, whether intentional or not, there are other consequences that may be more traumatic to mothers than what the designers of those campaigns recognize. For example, public health communication that creates fear of VPDs in mothers who are also genuinely afraid of VAEs makes those mothers' vaccine choices doubly fraught with anxiety—what Brown (2011) described as redundant risk. One mother of a 7-month-old, who she decided to put on a delayed vaccine schedule after she began to research vaccine risks in anticipation of his 2-month appointment where he would be required per the CDC schedule to receive several shots, described this sensation in an online post about feeling intense fear of both VPDs and VAEs:

I decided to start researching and I really freaked myself out. I know there are risks with every medication, but when I started reading about anaphylactic reactions and the risk of SIDS and encephalitis, I cancelled the appointment with his pediatrician... That was nearly 5 months ago and he has yet to get a vaccine. I always back out at every well baby check up. Even though I feel better knowing that once he starts getting vaccinated he will only receive one shot per month, I'm still so scared that he's going to have a life threatening reaction. In the mean time, I have turned into a complete germaphobe [sic] in fear of him catching a vaccine

preventable disease...I hate taking him out in public, I try my hardest to keep anyone from getting in his face and touching his hands...[H]e wants to grab everything and put stuff in his mouth which is totally normal, but I get so freaked out that he's going to get sick from it. There have been times that we've been at a restaurant, and he has grabbed the table and then put his hands in his mouth, and I had to excuse myself from the table so I can go to the car and cry because the anxiety is so overwhelming...I just don't feel ok either way. Getting him vaccinated terrifies me, and him not being vaccinated also terrifies me.

(kathrynhill, 2015)

Another version of this kind of fear occurs in mothers who, for example, live in California with its recent policy change to more strictly enforce childhood vaccinations (SB-277) or find themselves in other situations where vaccinating their children on schedule is the most or only viable option (e.g., working and/or single mothers who do not have the option to homeschool and/or are not aware of or do not have access to vaccine exemptions). This position was exemplified in the comment of one mother whose online discussion post I included in chapter four but will repeat here:

I don't have the option to homeschool or leave the state. My only option is to comply with the bill and begin vaccinating my daughter and get my son caught up on his. I have until January 2016 to complete the schedule and I absolutely can not wait any longer and 'hope this bill goes away. I'm terrified about letting my kids, especially my daughter, receive that many injections in such a short amount of time. I'm even more terrified of waiting and having her injected with all of them in a span of a couple of months...I'm mad that [the state] is backing me and

my family into a corner and to be honest, I'm mad at myself for inadvertently setting my kids up for this. I feel that by trying to protect my kids, I've failed them. My heart is broken. (LantanaLove, 2015)

Relatedly, communication that increases public fear of VPDs can implicitly or explicitly suggest those VPDs are spread by unvaccinated subjects (usually children), and by extension, fear of unvaccinated children (much more so than adults for whatever reasons) that can easily become a pervasive public feeling or affective logic resulting in actions such as stigma and discrimination (e.g., excluding unvaccinated children from public or private communal services such as school, sports teams, and play groups). While most children at the ages when most vaccines are recommended (before 2 years) are not aware of or do not remember these potential adverse social implications of not being vaccinated, it is not uncommon for their mothers to experience a great deal of anxiety weighing the risks of stigma, backlash, discrimination, public shaming, isolation, and the surveillance that comes from and leads to those reverberations from being unvaccinated—and these social risks sometimes even outweigh for many parents the health-related risks of vaccinating or not. (In fact, it appeared that mothers in the relatively privileged positions of participants in this study were affected by the prospect or actuality of social repercussions of opting out of vaccines more often than they were affected by VPDs.) A mother articulated this position in an online discussion:

You know what? If I really examine what makes me most uncomfortable about not vaxing, it's not the fear of the disease. It's actually the fear that society will condemn me and I will condemn myself if my [daughter] were to—God forbid, please—contract a so-called VPD. Of course I worry about VPDs and

nonVPDs—I'm kind of a germaphobe. I don't think I'm going to be able to explain this well, but I guess I'm much more susceptible to the extreme social pressure to vaccinate than I would have thought...But saying I don't vaccinate is like telling people I joined the flat earth society, and it makes me so incredibly uncomfortable. I'm secure in my reasons. I informed myself about the issue. I can usually debate or just converse any topic with relative calm and coherence. But when it comes to no vaccines, I feel like I must hide it. It should stay silent. I can't stand for the hate to come at me and the censure from my family and friends. And I've never been treated poorly over it...So I'm shocked that going against the grain makes me so uncomfortable. But no way can I vaccinate. No way. God help me, I can't do it. (KMB119, 2016)

To take the discussion even further, beyond potentially creating manifold sources and levels of anxiety about risks of choosing to *not* vaccinate on schedule, official pro-vaccine communication (e.g., fear-based persuasion and information campaigns about vaccinations by the CDC) offer little in the way of easing or even recognizing as valid or real the anxieties of mothers who experience very real fear at the thought of adverse social and health consequences of vaccinating their children.

While it could be the case (though I frankly would not argue for or against it based on my research) that creating such anxiety in mothers who are genuinely afraid of the adverse health implications of vaccinating and/or the adverse social implications of *not* vaccinating ultimately does the most good for the greatest number of people, I have not seen the issue framed in this way—questioning the ethics or fairness of campaigns that might increase vaccine uptake, but at the expense of mothers' emotional wellbeing

who have very real fears about what harms vaccines can cause for their individual children—in scientific research about vaccines or, perhaps of more relevance, academic literature about vaccine risk communication. By this I mean to suggest that perhaps vaccine science research (e.g., in immunology) that tests the efficacy and safety of vaccines and works to produce new vaccines abating devastating diseases in global populations should be considered at least somewhat apart from *social* science research about vaccine communication and the vaccine debate. After all, even if we do agree that vaccination in fact lives up to the oft-repeated reputation as one of the greatest advancements in medicine of the last century or more, that “fact” has not eased the concerns of some mothers (including many who participated in this study) about vaccine risks, nor have most scholars or practitioners of vaccine communication treated those concerns as significant or potentially valid (i.e., “really” felt by those mothers with those feelings).

Feminist bioethics. Perhaps one reproach to this lack of sensitivity in vaccine communication research—the failure to treat mothers’ fears about VAEs as meaningful—could draw from feminist approaches to bioethics. Rawlinson (2001) described traditional normative moral philosophies and bioethics in particular as grounded in the assumption of “man” as the universal subject from which all experiences and moral ideals can be abstracted: “‘Man’ asserts himself as if he were the whole story. ‘Woman’ is a variation, an object within the story, or a supporting character. This invisible gendering of the universal renders the other gender and invisible and silent” (p. 407). Rawlinson defined an alternative vision in a *feminist* bioethics: “A feminist bioethics investigates the links between this invisible gendering of the universal and the actual experience of real human

bodies” (p. 407). She continued by defining feminist bioethics as “beginning from women’s experiences and bodies in formulating the problems, principles, and concepts of ethics” (p. 413). (For additional perspectives on feminist approaches to bioethics see Donchin, 2001; Ells, 2001; Williamson, 2008).

Additionally, seriously considering maternal thinking and maternal standpoints as “intellectual work” as defined by Ruddick (1980, 2004), and as I described in more detail in chapter two, might lead scientific and academic “experts” whose research significantly influences the vaccine debate and mothers involved could go far in helping such official “expert” knowledge, findings, practical recommendations, and policy outcomes be more encompassing of the maternal knowledge on and experiences of the same topic—childhood vaccines and risks that extend far beyond VPDs.

Feminist politics of compassion. Another reproach to society- and policy-level problems that I argue can grow from delegitimizing maternal thinking about vaccines, at least in the US and similar Western contexts, might draw inspiration from Porter’s (2006) suggestion for a *politics of compassion*, which extends feminist ethics of care, usually directed at a “specific known person” (p. 99), to apply more universally to people who require care but are unknown to us personally. As Porter put it, a politics of compassion “links the universal and the particular in that it assumes a shared humanity of interconnected, vulnerable people and requires emotions and practical, particular responses to different expressions of vulnerability” (p. 100). In other words, politics of compassion takes care ethics from “personal” to “political”—or rather razes the personal/political divide or at least attempts to render it as less of a barrier to practicing care and compassion in social justice projects. Porter argued that, “compassion is needed

in personal relationships and in global politics; compassionate justice is possible; and that we have obligations to be compassionate whenever possible” (p. 104).

Thus, for Porter (2006), a politics of compassion makes urgent the need to recognize the suffering in individuals (which, admittedly, might be relatively minor in the case of many vaccine-critical mothers that I am talking about specifically in this project when compared to the needs and suffering of individuals worldwide; however, I have addressed that elsewhere in this chapter and earlier and will not repeat myself here) while also being attentive to practical and ethical agendas for social justice. Porter addresses this caveat for compassionate politics and compassionate justice: “[To] move beyond empathy, we must also address claims for justice and equality...[W]ithout the compassionate drive that is prompted by visualizing the pain of injustice, we will not feel people’s anguish, or bother to consider what they need” (p. 108). Thus, aligning with Porter, I argue that attending to the needs and suffering of mothers who, for example, are frightened and anxious about or already affected by VAEs that may befall or have afflicted their children is not in direct opposition to working under a social justice rubric of vaccination programs and communication.

Logics of redundant risks: Individual versus community? Relatedly, relatively few academic texts about the vaccine debate take a feminist approach or focus critically on discourses and roles of gender and motherhood despite the historical significance and women and mothers in vaccine movements (exceptions, though, include Brown, 2011; Brownlie & Leith, 2011; Casiday, 2007; and Conis, 2013). Research in this regard places particular emphasis on *context*, something that Leitch and Motion (2010a) argued is missing from dominant public relations theories of and research on publics. Feminist

research on risk, especially about risks related to mothers' and children's bodies and wellbeing, can provide new insight into how and why mothers make particular choices about vaccines. This proposition is exemplified in Brown's (2011) scholarship on the concept of redundant risk, as discussed next.

The weighing of personal choice and autonomy against greater community good was an especially prevalent theme among both pro-vaccine and vaccine-critical mothers, as was poignantly illustrated the affective logic of "I won't set myself on fire to keep you warm," which dictates an individualistic sensibility that reflects not only neoliberal discourses of individualism associated do with consumerism and market consciousness that valorize choice and competition (Blume, 2006; Brown, 2011), but also the feminist impulses of medical, bodily, and political autonomy for women that stemmed from second-wave feminism (Conis, 2013).

In the latter—the feminist logic of individualism underwritten by politics of medical and bodily autonomy—the ideals of informed consent and choice appear vividly in the logics of risk-laden vaccine choices by mothers (on behalf of children), as illustrated by commentary from participants in interviews and online discussions, and as studied by Casiday (2007) in her research on the MMR controversy among mothers. Casiday proposed that risk decisions for children adds even more weight to the dilemma parents face of navigating between making choices they believe are in the best interest of their children versus in the interests of the community (if those interests are indeed opposed). One dimension of parental decision making takes into account the subjectivity and issues of informed consent in children and infants who are too young to understand the risks and choices or to express their consent or wishes (Casiday, 2007). In fact, a

couple participants discussed their concern about making irreversible vaccine decisions on behalf of infants or young children because they (infants and young children) could not meaningfully consent to the proposed medical interventions on their bodies. One parent interviewed, Ana, brought up this issue, which gave her pause when considering vaccinations:

As a mother, I'm responsible to make decision on behalf of my children, which is obvious. But I'm concerned about making any interventions—doing anything invasive to my children's bodies without them understanding it or consenting to it. Especially something you can't take back, like vaccines. And I know vaccines are important for both individual and community reasons. But [my children's consent] is definitely something I'm concerned about too.

The magnitude and complexity of informed consent and informed choice in vaccine-critical mothers' choices are rarely acknowledged as legitimate—and rarely acknowledged at all—in dominant theory and praxis. As Casiday (2007) pointed out, these issues are under-explored in theory yet might have important implications for children and parents, and Ruddick (1980, 2004) might suggest mothers in particular, as well as the larger community (or “*the public*”).

Put forth by Brown (2011), *redundant risks* implicit in vaccine decisions can be described as a “damned if you do, damned if you don't” logic: the problem of not having a risk-free option to choose, such as in vaccination, where there is inherent risk for children in both being vaccinated (VAEs) and being unvaccinated (VPDs, not to mention stigma and discrimination from participation in certain public services and less formal communal activities such as play groups and birthday parties). The dilemma of redundant

risk weighed heavily on mothers who did perceive risks in both options (vaccinating or not), though there were a handful of moms interviewed who did not perceive vaccinating to be risky, and another handful who reportedly believed *not* vaccinating was unrisky—or at least they believed the risks attached to one option or the other was so minimal in comparison that they were not bothered by the idea of redundant risk.

Redundant risk also refers to risks surrounding vaccination that are not tied directly to the vaccines themselves (i.e., risks other than VAEs or VPDs): stigma and backlash against unvaccinated children and their parents was reported by many participants as common when non-vaccination statuses were made known to people outside of like-minded groups. The risks of stigma, discrimination, and shaming are considerations primarily unique to parents who choose against vaccinating; pro-vaccine mothers, being in the majority and of the same opinion as most doctors and “experts” in health, did not face the same risk in their vaccine choices. Therefore, for vaccine-critical mothers, the risk is multiplied, and many are acutely aware of and self-conscious about it. Some mothers in interviews and online, for example, expressed concern that, on top of knowing they were putting their children at risk of getting VPDs (which they assessed as less risky than VAEs), they were putting themselves and their families at risk of backlash from other parents, doctors, and community officials. This double risk scenario caused many vaccine-critical mothers to even withdraw from familiar social circles and lose friends over their vaccine choices, which put even more importance on their vaccine decisions for their children. For the most part, choices to not vaccinate among mothers I interviewed were not made lightly and did not have light consequences—on the contrary, many mothers sacrificed relationships, experienced tension with their partners, and

suffered condescending and callous treatment by pediatricians and other healthcare providers, friends, family, and teachers because of the choices they made that they believed strongly enough were the best choices for their children. As such, it was particularly stinging for some mothers online and in interviews who put that much thought and sacrifice into their vaccine choices for the sake of what they considered to be the best interests of their children, and then personally endured backlash or are identified as being part of a group (“anti-vaxxers,” as if that is a homogenous category) that is routinely publicly chastised and called “irresponsible,” “ignorant,” and “bad parents.”

Another site of redundant risk is the choice mothers face between making decisions that are in the best interest of their children or for the community. Again, stigma is disproportionately attached in this regard to parents who choose to not vaccinate or not fully vaccinate, because they are regularly constructed as putting society at risk for selfish and baseless reasons (operating on the assumption that their personal vaccine choice was unjustified). But even beyond or before the risk of public stigma is imminent, many mothers expressed truly feeling torn between protecting their children versus the community, especially when it came to VPDs deemed “milder” such as chickenpox (the vaccine for which is relatively new and thus not as comprehensively tested for possible long term adverse effects as others) and even measles (the vaccine for which is the infamous MMR with a whole host of perceived risks attached). Some also reported feeling guilty about decisions they made in either direction—guilty for risking their child’s well-being if they vaccinated and feared VAEs, or guilty for putting other children in the community at risk of contracting a VPD if they chose to not vaccinate their own.

On the other hand, parents who were confident in their pro-vaccine position and choices, or who were apathetic and vaccinated because they made a habit of following the schedule and recommendations of their pediatricians, did not report feeling torn, guilty, or worried about stigma or backlash; the most common feeling pro-vaccine moms had regarding the issue of individual versus public good was frustration, anger, or indignation at moms who chose not to vaccinate and, by extension, put the rest of the community at risk for outbreaks of VPDs. Exacerbating their angry feelings were usually the assumptions that parents who chose to not vaccinate did so thoughtlessly or because they were uneducated, did not want to watch their children receive shots, or paid too much attention to Jenny McCarthy. While these assumptions are admittedly accurate in some cases, the experiences shared especially by mothers I interviewed (and a few online who went into detail about their choices) made it clear that those common stereotypes of moms who choose to not vaccinate are by no mean universally correct—including the assumption that their decisions were motivated by senses of individualism and self-interest unique to “anti-vaccine” positions.

One area for interrogation that arose from this project and significantly aligning with the idea of redundant risks of vaccination concerned assumptions pervasive in academic and popular literature about individualism versus concern for the greater good in the context of childhood vaccines. Broadly speaking, mothers who opt to vaccinate fully and on schedule are viewed as contributing to the greater good and simultaneously making certain (potential) sacrifices by risking their own children’s safety—if we agree that no vaccine is absolutely risk-free. On the other hand, parents who opt out of some or all vaccines are generally perceived and as being of a more individualistic mindset,

(misguidedly and unfoundedly) privileging the wellbeing of their own children over that of the community's, especially the most vulnerable populations of very young infants and immune-compromised children (and adults, though adults almost always come second or last in these discussions) who cannot receive vaccines for “legitimate” medical reasons and are at high risk of contracting VPDs. A popular framing of this argument is that “anti-vaccine” parents are compromising herd immunity.

While these contentions could be objectively accurate on some levels, I argue that it is problematic to equate the “sacrifices” pro-vaccine mothers make in vaccinating their children to the “sacrifices” vaccine-critical mothers make or would make by taking the same actions. In other words, mothers who identify as pro-vaccine, at least in this study, overall were not overly concerned with the risks attached to vaccinating—they did not usually believe VAEs constituted a significant or even small risk to their children or the vast majority of other children. On the other hand, most mothers who were skeptical of vaccines were so because they had concerns about their safety—they perceived VAEs to be a much larger and more looming risk to their children (and, in many cases, other children) compared to most pro-vaccine mothers. Therefore, asking mothers who feel that giving their children vaccines could very plausibly lead to myriad adverse reactions— allergies, brain swelling, fevers, SIDS, autism, etc.—would logically constitute a larger sacrifice on their part than on the part of mothers who effectively did not perceive those VAEs to be legitimate risks for their children.

The differential of risk perception in the risk-benefit analysis between “pro-vaccine” and vaccine-critical (or vaccine-afraid?) mothers grows even larger when pro-vaccine mothers perceive VPDs as much more pressing and real risks than do vaccine-

critical mothers. To put this another way, consider asking a mother who feels, believes, sometimes knows—such as in the case of at least two interview participants who had children with contraindications to certain vaccines (validated by mainstream physicians), including severe allergies and recent history of vaccine reactions—that giving her child a certain shot can lead to real and frightening complications, even life-threatening or lethal. That mother may stay awake all day and night for 72 hours watching her infant and hoping she or he does not have a fever spike leading to febrile seizures, does not stop speaking suddenly—as in the case of several participants who described what they believe were VAEs that eventually manifested as developmental delays such as autism spectrum disorders—or does not stop breathing due to SIDS or anaphylaxis.

That kind of fearful reaction to vaccines on the part of mothers was not unheard of in the data I analyzed. In contrast, the vast majority of pro-vaccine mothers reported no such anxiety about potential reactions in their children or changes in their physical routines to monitor for such reactions. Another important point here is that almost every mother interviewed reported believing that mothers, regardless of their pro- or anti-leaning views, make vaccine decisions that they believe are in the best interest of their own children—that every mother is ultimately trying to do what’s best for and to protect her child.

If the conclusion that every mother makes decisions that she believes are best in the best interest of her own child(ren), whether that decision is opting for or against vaccines, is that not individualistic? Further, if “pro-vaccine” mothers who do not believe they are significantly risking their children’s wellbeing by vaccinating, and in the same vein do not believe they are risking the wellbeing of most other children by asking for

them to be vaccinated as well, is their commitment to acting in the interest of the community really tested? Indeed, several interviewees who identified as pro-vaccine even told me that, if they encountered an adverse reaction to vaccines in their own children or other children they knew, they would probably be of the opposite opinion regarding vaccinations. Additionally, most pro-vaccine-identifying mothers believed VPDs were at least a greater risk than VAEs, so their own decisions to vaccinate plus asking almost all other mothers to make the same decisions are ultimately in the interest of their own children.

I am not challenging pro-vaccine mothers' commitments to making decisions for the greater good of society, and am certainly not suggesting their commitments to the greater good be tested in any way (if that were even possible)—and in fact, no significant majority of any group of mothers thoughtfully reflected on or emphasized the idea of acting in the best interest of the “greater good,” with the exception of about four interviewees who had differing views of vaccine safety and efficacy but ultimately privileged parental choice rather than being “all the way” pro- or anti-vaccine. Rather, I am pointing out that a pro-vaccine position—whether taken by mothers, other caregivers, medical practitioners, scientific and academic “experts,” or other concerned parties—does not automatically constitute a “greater good” or collectivist/communal logic. I also argue that the assumption that pro-vaccinationism is inherently less individualistic, and vaccine resistance more individualistic (read: selfish), adds to the problems of stigma, shame, and silence as discussed in the following section.

In my research with mothers on all sides of the issue, I did not perceive a pervading lack of empathy for mothers of “other” or opposing views on vaccines, though

there were definite gaps in understanding that sometimes led to hasty assumptions and generalizations and sometimes harsh words, particularly online. These were perhaps more symptomatic of the pervasive culture of incivility that plagues many vaccine discussions online that makes open and healthy discussion about vaccines often difficult if not impossible, as well as discouraging many if not most mothers from engaging in discussion across value-lines at all. Communication scholars and practitioners in the service of facilitating open, two-way, and healthy public dialogue about sensitive issues such as vaccines should see this virtual deadlock as a learning experience about how risks that are often invisible to the dominant majority of society—risks of stigma and public shame that come from sometimes inaccurate assumptions that go uncorrected—can suppress dialogue and create cultures of silence or silos of like-minded individuals. Public relations practitioners and scholars who ostensibly operate under the rubrics of facilitating dialogue, fully functioning societies, two-way communication, and equal opportunity and access in public spheres of deliberation have ethical obligations to at least acknowledge and ideally critically reflect on the issues as important as vaccination, children’s health, and community well-being.

To be clear, in invoking concepts such as public sphere, deliberation, and dialogue, I am not suggesting removing emotion, feelings, and affective language and logics in favor of rational discourses—I am making an attempt at imagining ways to render valid and *visible* the feelings and affective registers of public communication and all parties to it, including science. However, it is not only overt emotionality that is excluded from “valid” and “objective” scientific methods and communities—dissent and questions are also at risk of being ignored or even squashed. The following sections will

both raise questions about vaccine science and the larger practices, norms, claims, and institutions of dominant science itself.

Questioning Vaccine Science

As I will establish further in the later section about silence in discussions about vaccines, there is a generally strong pro-vaccine and pro-science bias in most traditional dominant academic and public health research on the topic. While I do not believe that vaccine research and science is not in itself wrong or “bad”—on the contrary, as I explained earlier, I believe advancements in global vaccination programs have been of great benefit to society at large—I do argue that there should be room made for both questioning vaccine science and (re)considering validity of “other,” non-science-based evidence and ways of knowing about vaccines. To wit, I came across many stories about mothers who were more knowledgeable about, for example, vaccine schedules than doctors or practitioners administering vaccines. And while common sense dictates that not all of these stories, usually told by the mothers themselves, are completely accurate, I did not find reason to doubt that it’s not uncommon to find a mother more informed about (CDC-produced) vaccine schedules and other information than healthcare professionals. I also heard and read many claims made by mothers in support of vaccines, stated as scientific facts, that were in fact not accurate according to “official” knowledge (e.g., CDC publications). However, questions or skepticism about vaccines that I observed in this project were often regarded as “pseudoscience,” “junk science,” “Jenny McCarthyism,” “uninformed,” “uneducated,” “irrational,” and/or “just plain wrong.”

On the other hand, among vaccine skeptics, the opposite extreme at times prevails: at the extreme, accusations of conspiracies, lies, “pure evil,” and so forth being

rampant in any and all (vaccine) science. Further, mothers passionate about vaccines that approached the issue from all angles (anti-, pro-, and in-between) very often used the same scientific evidence, including epidemiological data and statistics from the CDC and global health associations such as WHO, to come to opposite (often compelling) conclusions about vaccine safety and efficacy. Logically, one of those opposite conclusions—“vaccines are safe”/“vaccines are not safe,” or “vaccines are linked to autism”/“there is not link between vaccines and autism”—reached from the same set of data must be wrong. (This is where affective logics come in, which I will return to shortly.)

Relatedly, any evidence offered by vaccine-skeptical mothers in the form personal testimony about (at least perceived) vaccine injuries, *as well as* news and social media stories about (at least perceived) outbreaks or relatively rare but extreme cases of vaccine-preventable diseases sometimes even resulting in death, especially in children, are decried as being “anecdotal” (the former by pro-vacciners, the latter by vaccine critics) and therefore invalid compared to large-scale scientific-study-based evidence. At the same time, as discussed above, the majority of mothers interviewed felt that some degree of trust in “mother’s intuition” or “gut instincts” was wise in making decisions for their children, and many even acknowledged that if they had their own personal VAE or VPD experience (which all too quickly turns into an “anecdote”), they might be very inclined to change their positions on vaccines. Thus it appeared that, for the most part, while science was usually elevated as constituting superior (sometimes exclusively valid) vaccine knowledge, mothers also generally regarded maternal thinking (Ruddick, 1980, 2004)— intellectual work of being mothers and providing care and protection for

children—as comparably (if not more) valid and valuable.

Harding (2015), Rawlinson (2001), and many more have remarked on the fiscal dimensions of scientific research that belie its claims to objectivity (or value neutrality) and pure commitments to advancing knowledge for universal good. Relatedly, many vaccine critics have commented on how pharmaceutical manufacturers’ funding of research to test safety and efficacy of their own vaccine products has compromised the integrity of the scientific research process—ultimately invalidating findings upholding safety and efficacy of vaccines. In response, many vaccine defenders have argued that one-time-use, widely-distributed vaccines are in fact not money-making products for pharmaceutical companies (especially when compared to other products such as high-cost drugs for rare diseases or cancers, and drugs for chronic ailments that consumers pay for on a monthly basis for entire lifetimes).

I am certainly not an expert on pharmaceutical industry accounting or the price of manufacturing vaccines for global distribution, so I do not want to appear as if I’m making any determinations on this matter. However, on the basis of the extensive reading I’ve done on this matter throughout this project—including financial statements published by pharmaceutical companies going back several years and making predictions for future years, academic journal articles questioning or justifying drug companies’ rights to profit from vaccines, as well as recent articles in more popular outlets such as the *Atlantic* and *New York Times* (Lam, 2015; Rosenthal, 2014)—I am comfortable suggesting that it might be worth considering whether “Big Pharma” is (perhaps newly) making efforts to capitalize on vaccines. Whereas historically it does appear that vaccine manufacturing has been relatively unprofitable for drug companies, especially before the

establishment of the NCVIA that effectively disallowed vaccine injury liability lawsuits filed against the vaccine manufacturers (claims against vaccines are now settled and paid out in a federal court specifically for that purpose), the proliferation of the number of vaccines projected to be on the market in the coming years for diseases of varying severity and risk to certain populations does seem to make the question of profit motives in vaccination programs not entirely irrelevant. Inasmuch, it would appear that asking questions about vaccine manufacturers' involvement in the testing of their own products for safety and efficacy, as well as the political and financial ties many companies and their executives have with public officials and legislators, might not be so radical.

While there is consensus among dominant scientific communities that falls on the side of pro-vaccine, Harding (2015) and other prominent philosophers and sociologists of science and technology (e.g., Kuhn, 2012) have noted the tendencies of science and research communities to be somewhat insular, self-affirming, and resistant to (and even easily offended by) challenges to their own claims to objectivity and authority in knowledge and reliable findings. As such, it makes sense that the scientific communities that study vaccines would be very adamant about the efficacy and safety of those vaccines, and indeed vaccine research has (I believe) bolstered great strides in global vaccination programs that save lives and spare children and adults from painful and otherwise costly diseases. However, does that mean that the general public, mothers and women in particular, are forever prohibited from questioning vaccine science (history dictates, after all, that vaccine science has not been infallible) or making individual decisions about the efficacy and safety of vaccines for their own individual children? Should non-professional-scientist mothers be de facto incapable of making informed

decisions in the best interest of their own children? Is there a definite or universal limit to the political and medical autonomy extended to mothers who believe—“*know*”—that certain vaccines are not in the best interest one or more of their children, especially given that VAEs do in fact occur? These are difficult questions due to the nature of vaccines and communicable diseases with potentially (and scientifically proven) community-wide and global implications, but I believe they are questions worth considering—and dominant scientific communities may lack the motivation to give such consideration to outsiders and dissidents. While feminists probably fall on all sides of this issue, I propose that the feminist impulse to at least think critically about dominant science and truth-claims (e.g., Harding, 2015) does not automatically make it ethical, justifiable, or working against social justice to consider whether knowledge that is anything but supportive of vaccines is inherently “wrong” in all contexts.

Silence and Bias in Academe and Science

In this section, I will discuss the largely unseen process of *suppression of dissent* (Martin, 2015) and how it operates in the vaccine debate and related literature to produce silence, subjugate non-dominant viewpoints and resistance, and stifle research and communication and fair debate about vaccines. A critical feminist lens stages an intervention in current communication scholarship by revealing discourses and politics of dominant science and campaigns that often remain invisible in academic literature and research, yet have material consequences for publics. First I will overview the significant pro-vaccine bias in most extant research about the vaccine debate (especially as it happens online), and then I will turn to the larger issue of suppression of dissent in scientific research and debate.

Pro-vaccine bias in vaccine debate research. To give context to the discussion of pro-vaccine bias in vaccine debate research, this section in part reviews arguments and claims—or “tropes” and “tactics” (Kata, 2012)—used by both the pro-vaccine and vaccine-critical movements (both anti-vaccine and pro-choice perspectives) online. Chapter two reviewed several content analyses and studies of anti-vaccine websites that identified consistent content and design features (Bean, 2011; Davies et al., 2002; Kata, 2012; Wolfe et al., 2002; Zimmerman et al., 2005). However, while those earlier studies analyzed only anti-vaccine web content, I found that most of the claims and features identified by previous authors on anti-vaccine sites were also present in pro-vaccine websites and social media pages. The following are some examples of the bias I identified in literature when compared to the bigger picture of the vaccine debate.

Attacking opposition and censorship. Tactics used in sites of the vaccine debate (e.g., on website, blogs, social media pages, and documents for download) included attacking the opposition, censorship, shifting hypotheses. Attacking the opposition was pervasive from all corners of the debate, as demonstrated in direct attacks (i.e., aggressive arguments between opposing parties) pervasive in the culture of incivility that commonly arises in vaccine debates. Incidentally, these violent confrontations online lead to many moderated websites, blogs, forums, and groups on social media to ban any discussion about vaccines, or at least deleted comments of especially vicious character—practices that some consider “censorship.” While Kata’s (2012) description of censorship on anti-vaccine websites of pro-vaccine comments was accurate based on what I have observed, she did not at the same time acknowledge that anti-vaccine and pro-choice voices are arguably at least as censored on not only pro-vaccine sites, but also in forums that do not

take an explicit stance on vaccination at all. Furthermore, while some sites do explicitly censor a certain type of commentary (either pro- or anti-vaccine), another reason for this “censorship” on all sides is often the incivility and vitriol that is flung in online discussions about vaccines from debaters of all orientations—and not necessarily because moderators want to silence only dissenting voices. Thus, though Kata’s assessment of censored pro-vaccine commentary is accurate in some instances, her account of censorship in the debate as a whole is one-sided and casts pro-vaccinationists as targeted victims of censorship without acknowledging that the issue is more complex and affects more than just vaccine proponents.

“I’m not anti-vaccine, I’m pro-safe vaccine.” Kata (2012) found a salient trope on anti-vaccine websites that she coined, “I’m not anti-vaccine, I’m pro-safe vaccine.” However, in my research, I found this was *not* typically a trope of any truly anti-vaccine website or the movement. According to participant and online data I collected, *anti-vaccine* rhetoric says that all vaccines are dangerous; thus, true anti-vaccine websites do not generally claim to be “for” “safe” vaccines. Thus, the “I’m not anti-vaccine, I’m pro-safe vaccine” is rather a “trope” more characteristic of pro-choice sites and groups—which is a meaningful distinction made by many participants who identified as pro-choice rather than anti-vaccine. However, Kata’s analysis seems to dismiss or invalidate the distinction:

A common evasion is denying one opposes vaccination, but instead is for safer vaccines. Some oppose the label of “anti-vaccine”, complaining it is pejorative and deflects attention away from legitimate questions and gaps in scientific knowledge—for instance, claims that vaccines are not adequately studied. This is

difficult to argue against, for who objects to safe vaccines or further research? Yet calls for “a balanced, scientific, and safe approach to vaccination” tend to be misleading, due to the erroneous and distorted information coming from those making this assertion. Such websites promote informed consent and doing research before vaccinating, but tend to subtly misinform readers with worrisome and unsupported claims. (p. 3783)

Kata’s claims may be true about some pro-choice websites—they can in fact be misleading, just as anti-vaccine *and* pro-vaccine websites can be. However, her statement effectively denies the legitimacy of a pro-choice philosophy and even implies that pro-choice is a sham. Judging from what many pro-choice mothers I interviewed told me about their views, research, choices, and reasons for those choices, to make a blanket statement claiming pro-choice is in fact a misleading strategy of the anti-vaccine movement is not only inaccurate, it is condescending, naïve, and possibly harmful to earnestly pro-choice parents seeking transparency in information and true informed consent. Unfortunately, though, hasty judgments like this are not uncommon among pro-vaccine researchers, parents, scientists, and others involved in the debate.

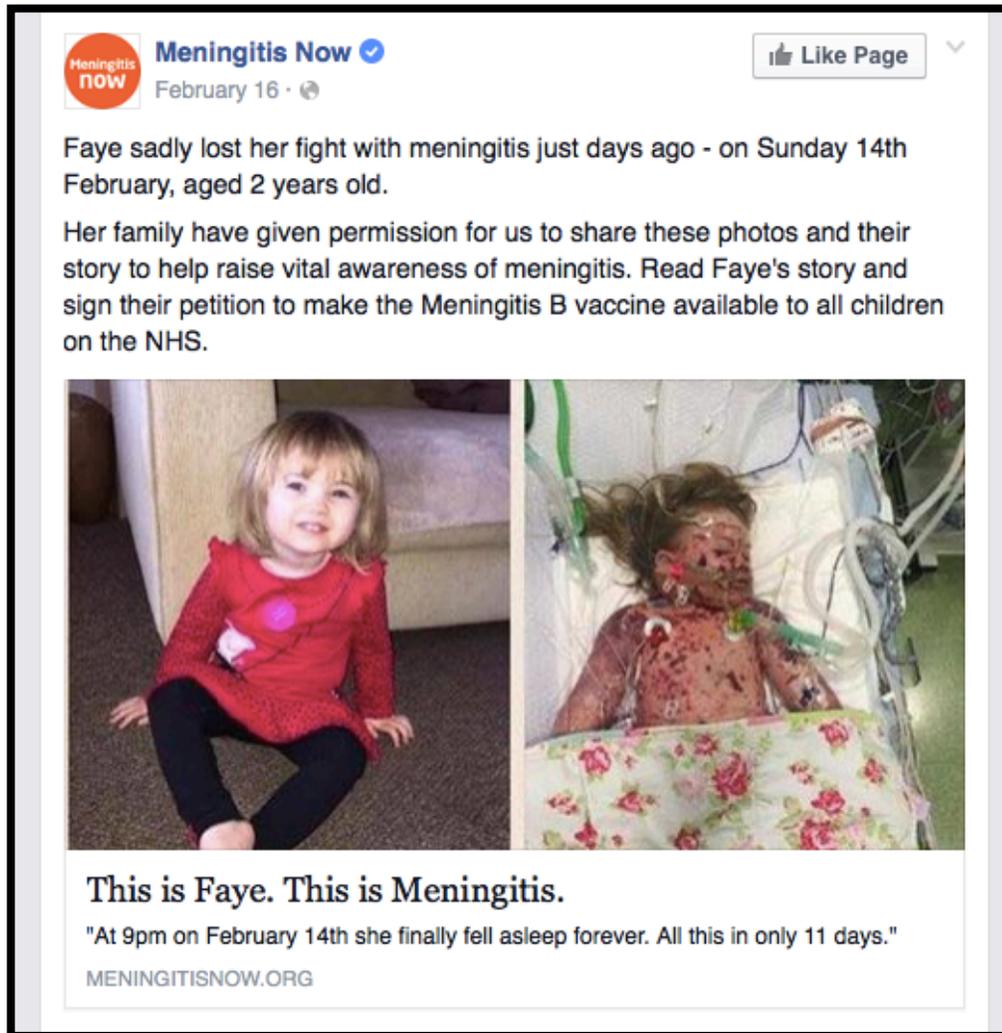
Affective aesthetics. Design features of vaccine debate websites most prominently included highly emotional and jarring images, such as “scary needles,” screaming children being held down and injected with “scary chemicals,” and children sick, in pain, and/or dying (or visibly affected by either VPDs or VAEs), such as seen in figure 5.1. Captions and comments attached to these images are typically very emotive and frequently ask, “Why would, how could, parents do this to their children?” For example, the public profile image on the Facebook page for VaccineTruthMovement:



(VaccineTruthMovement, n.d.)

Figure 5.1. Facebook profile picture of VaccineTruthMovement

While prior studies (e.g., Bean, 2011; Kata, 2010; Wolfe et al., 2012) correctly identified emotional and frightening images used on anti-vaccine websites such as “scary needles,” my research also found that similarly provocative visuals were used in the pro-vaccine movement online, such as the photos of Faye, pictured in figure 5.2, a girl who suffered and died from meningitis in the UK in 2016, which were accompanied by pleas from Faye’s parents to sign a petition to make meningitis vaccines accessible to all children in the UK, along with their story about the heartbreaking experience of losing their child.



(Meningitis Now, 2016)

Figure 5.2. “This is Faye. This is Meningitis,” Meningitis Now’s Facebook post

Similar photos of children who have suffered VPDs are not uncommon in pro-vaccine discourses online, though the “official” nature of many pro-vaccine sites (i.e., of government agencies such as CDC and NIH) is prohibitive in that regard, as their content attempts to be less emotional and more informative and objective. Meanwhile, because there are no “official” (i.e., state-sponsored) anti-vaccine websites to speak of, the anti-vaccine movement online does not have similar standards of neutrality of information or

content to meet, giving them more leeway in the emotive images and language they deploy.

Suppression of dissent and culture of silence. Related to the preceding discussion of pro-vaccine bias in research about the vaccine debate, the *suppression of dissent* extends beyond the individual or personal to organizational and institutional levels. As discussed in chapter two, Martin (2015) wrote about the pervasive and hegemonic nature of dominant science and vaccine ideology and resultant systemic suppression of dissent voiced by vaccine-critical activists—and even fellow scientists and physicians. According to Martin, a culture of silence has emerged around vaccination and opinions that deviate from strictly mainstream pro-vaccination views, especially when they are voiced by members (or former members) of the scientific community. Assuming there is in fact suppression of dissent in the scientific community surrounding the vaccine debate, it may have had a trickle-down effect to communication research about the debate (as described above) and even to the levels of individual healthcare providers and parents. As covered in the previous chapter, mothers expressed their reticence to ask questions about vaccines during routine pediatrician visits or to express anything but strictly pro-vaccine views online or to friends or family who are not aware of their vaccine-critical orientations.

This wasn't only expressed in the words of interviewees—some mothers I spoke to via phone or video chat indicated that they specifically chose a time to call based on when their partners (husbands, spouses, fathers) would not be present, or they left their houses to talk to me in private when family members were visiting. While there may have been any variety of reasons for seeking privacy during interviews, two mothers did

explicitly say that they did not want their partners or family to be aware that they were even speaking to me. One of the interviewees that expressed that even said that her partner generally agreed with her views on vaccines (pro-choice/anti-vaccine). There were also several remarks from interviewees who said they actively avoided making statements or posting or “liking” anything on social media that would indicate their vaccine-critical views—though this was generally *not* an issue for pro-vaccine parents I spoke with—to avoid fights or backlash from observers.

Other participants described telling their doctors or other healthcare providers that they did have plans to vaccinate when they did not actually intend to, simply to avoid the conversation or whatever interaction would follow. Some commenters in online discussion even mentioned routinely lying about their children’s vaccination statuses (and gave the same advice to other moms) to doctors treating their children, such as at urgent care clinics, to avoid being judged or shamed or lectured to—or even receiving different medical treatment. In fact, some participants did even describe their children receiving different levels of treatment when they disclosed to physicians or nurses that their children were unvaccinated or not fully vaccinated. At least one mother online commented that it is “easy to fake a shot record” required for enrollment of their children in public (and many private) schools in the absence of a medical or religious exemption (or in some states, a philosophical exemption).

Without commenting on the ethics of such decisions, I would argue that lying to doctors or public officials about children’s vaccination status can have potentially harmful consequences for children and adults alike. It is reasonable to suggest that the culture of silence brought about by the higher-level suppression of dissent in vaccine

research might have some blame here. Creating a culture of open and honest dialogue, healthy and fair debate, and transparent research practices, then, would not only bolster the integrity of scientific findings, it could also make “dissent” (i.e., asking questions or simply being open about vaccination status to, for example, medical providers who have no legal rights or duties to coerce vaccination, and presumably might benefit from knowing the vaccine status of their patients when determining treatment options) more permissible at the level of parents—and for doctors.

As Teresa, a holistic dentist, explained more than once the culture of fear that she has experienced first hand as part of the medical community: “The medical community makes doctors afraid to practice medicine, like truly practice medicine, anymore? They’re afraid. They’re afraid to prescribe medicine that’s outside of the norm. They’re afraid to not prescribe medicine because they’re afraid they’re gonna get sued.” If this culture of fear is pervasive at the level of individual medical practitioners such as pediatricians and clinic and emergency room staff, it becomes more understandable why some vaccine-critical mothers, including many who shared their stories with me during this project, have such negative experiences with their family physicians and pediatricians.

While some may argue that patient-doctor relationships are not in the scope of public relations research or practice, the suppression of dissent at organizational and institutional levels is very relevant, as public relations research and practice happens at institutional and organizational levels. Further, understanding how the suppression of dissent registers at individual and interpersonal levels creates deeper and more sensitive understandings of publics. Public relations practitioners and academics in institutions or

organizations connected to mainstream science, medicine, and other dominant knowledge-producing institutions or industries must be aware of cultures and logics of fear, shame, silence, and stigma that come from suppression of dissent and intellectual bias—and their own complicity in those processes—and how they affect publics. The postmodern Foucauldian notions of biopower and biopolitics (as reviewed in chapters two and four; see Foucault, 1984) might be a useful lens to engage when interrogating how these systems of power operate to control biological and life processes in publics, including (in)access to, for example, information about vaccine risks and options, and withholding or providing access to medical treatment or participation in public services (e.g., school) contingent on children’s vaccine history.

Another lens with which to engage the culture of silence and treatment of dissent surrounding vaccines is a feminist theory of *dissident citizenship*, such as that forwarded by Sparks (1997), who defines dissident citizenship as: “the practices of marginalized citizens who publicly contest prevailing arrangements of power by means of oppositional democratic practices that augment or replace institutionalized channels of democratic opposition when those channels are inadequate or unavailable” (p. 75). Further, Sparks’ conception of citizenship vis-à-vis democratic participation requires not only dissidence when necessary but also an ethic of *political courage*. This definition might apply, for instance, to vaccine-critical mothers who form tight-knit and often isolated online and in-person groups or communities to share advice, knowledge (e.g., in the form of experiences), and other emotional and practical support and resources that do not align with “official” vaccine knowledge and positions and in fact assist members in going around or bypassing “official” channels or polity in making vaccine choices. While the

outcomes of vaccine-critical groups' communication might not always be similar or in the best interest of individuals or communities, it would be hasty to automatically decry all such communication about vaccines, vaccine knowledge, and subsequent vaccine choices as irresponsible, inaccurate, undemocratic, or working against social justice without more thorough investigation and listening.

Limitations and Future Research Directions

While this project revealed several new findings and practical and theoretical implications for a feminist affective turn in public relations, there are also limitations to consider. In addition to the theoretical limitations of some postmodern definitions and theories of affect discussed earlier in this chapter, and the limitations specific to methodologies and sampling procedures discussed in chapter three, a major limitation of my study was the homogeneity in participants, especially in socioeconomic privilege, race, and family situations. Though not all participants disclosed the same level of personal information to me, it is obvious that most if not all were middle- to upper-class women with at least some level of college education, and usually part of a two-parent household. None reported working more than one job, and some were stay-at-home-moms. None reported significant barriers in access to vaccines, healthcare providers, or the Internet. One participant identified as a lesbian and one as “predominantly heterosexual, but a little queer” (she was married to a man at the time of interviewing), and of those who disclosed their racial and ethnic identities, almost all identified as White. In general, from what I was told, the mothers I interviewed occupied positions of relative privilege and thus were typically unable to speak to issue of privilege, class, and access that affect a great number of mothers faced with making vaccine choices (or

effectively denied vaccine choices) for their own children. Thus, future research should use a similar feminist affective lens to further explore those matters—matters of privilege and access that have real implications for agency, medical and political autonomy, and informed consent and choice—in a much more heterogeneous pool of mothers.

Further, this study had a (deliberately) narrow scope geopolitically, and the issue of vaccines in other countries, especially with large agrarian or impoverished populations with starkly different sets of circumstances that affect issues of vaccines, VAEs, VPDs, and informed consent—including access to healthcare and vaccines, literacy, sanitation and hygiene, infrastructure and transportation, history of disease *and* history of (mandatory) vaccination programs (e.g., the global smallpox vaccine initiative that left many with negative memories about vaccination) in their communities, religious and cultural beliefs relevant to vaccination and medicine, traditional healthcare practices that may or may not align with Western medicine—should be undertaken on a large scale to learn about challenges in vaccine choice and informed consent (or lack thereof) faced by mothers around the world, and how those issues impact mothers, parents, and children emotionally, psychologically, physically, and otherwise. Building on extant public relations research in these areas, notably Curtin and Gaither's (2007) wide-reaching study of the global smallpox eradication campaign framed in the circuit of culture model, future scholarship in public relations should take other critical, cultural, and public-centered approaches to studying complex and controversial global issues such as vaccination in order to build practical knowledge that will further ethical and effective communication practices in the service of global publics. Domains of public relations theory that might effectively engage this area of scholarship include (critical) global and international

public relations; intercultural and critical-cultural approaches to public relations; subaltern, postcolonial, and transnational and Third World feminist approaches in public relations; ethics; and interdisciplinary perspectives.

Additionally, the affect turn I engaged in this project privileged feminist affect theories along with postmodern trajectories, both of which also overlap with queer affect scholarship. However, other trajectories and orientations in affective turns may also have theoretical and practical utility and should be explored. Of particular interest may be the trajectory largely inspired by John Dewey's work on emotion and affect. Finally, because feminist, postmodern, and queer affect theories are new for public relations research, it is yet to be seen how well they "fit" in contexts outside of this study or using methodologies other than qualitative and critical and inspired by feminist and postmodern epistemologies. There may be an argument to be made that feminist affect theory does *not* have practical or even theoretical utility for all or most varieties of public relations research and practice, but it is my hope that the interdisciplinary and pluralistic natures of most trajectories of affect theory, as well as their focuses on embodiment and agency and how people *feel*, which are arguably of primary concern for many areas of public relations research and practice, will lead to further affective turns in public relations that will open new ways of understanding publics, organizations, feelings, emotions, affects, rationality, and research.

Appendix A

Interview Protocol: A Feminist Affective Turn for Public Relations: Passionate Publics in the Online Vaccine Debate

Note: This IRB-approved interview protocol reflects my original research questions (RQs) that focused on the *online* vaccine debate versus the more general vaccine debate RQs that evolved over the course of the study. Still, this protocol generated conversation that more than sufficiently addressed my RQs as recorded in this manuscript's chapters.

One-on-One In-Depth Phone or Online Interview

Research Questions

RQ1: How does the online vaccine debate embody feminist **affect theory**?

RQ2: How are risks understood as **affective facts** in the online vaccine debate (if at all)?

RQ3: What **affective logics** are used in the online vaccine debate (if any)?

RQ4: What are **online sources** of vaccine information for mothers?

One-on-One In-Depth Interviews

29 one-on-one interviews were conducted on the phone or via video chat (Skype, FaceTime) with participants recruited via snowball sampling. Participants were mothers who (a) had at least one child age six years or younger, and (b) have participated in online discussions and/or research about early childhood vaccines.

Interview Questions

I began interviews by providing and IRB-approved description of my study and the nature of participation, informing participants of their rights to informed consent, that their participation was completely voluntary, that they could withdraw participation at any time, that they could choose to not answer any questions they were uncomfortable answering, and that they could choose to not disclose any information (personal, medical, identifying, otherwise) they were uncomfortable sharing. I asked if participants had any questions about consent, participation, privacy/anonymity/confidentiality, the interview process, my research, or myself before we began, and I answered any and all questions asked by participants before, during, and after interviews. Further, each participant received an electronic copy of the IRB-approved consent form prior to interviewing, and each gave consent to participate and to be audio recorded.

Thank you for agreeing to interview with me today. I'd like to begin by asking questions to learn more about you and your general views on childhood vaccines.

1. *Tell me a little about yourself.*

- a. *How many children do you have? Ages?*

[RQ1: How does the online vaccine debate illustrate **affect theory**?]

1. *Briefly, how would you describe your opinions about early childhood vaccines (i.e., those routinely given to children up to six years)?*
 - a. [Probe] *Would you say vaccines are “risky?” Why?*
 - b. [Probe] *Do you feel vaccines are “safe?” Why?*
2. **[If undecided]** *Why are you undecided about the vaccine issue?*
 - i. [Probe] *What confuses you about vaccines?*
 - ii. [Probe] *What are the major questions about vaccines that you want answered?*
3. **[If pro/anti]** *Would you say your opinions about vaccines align with the “expert” opinion? Why do you say that?*

[If undecided] *How would you describe the “expert” opinion on vaccines?*

 - a. [Probe] *Who are the “experts” on vaccines? Why?*
 - b. [Probe] *What is the “expert” opinion on vaccines? Why do you say that?*
4. *Do you think your opinions about vaccines are more shaped by facts or your personal feelings? Why do you say that?*
 - a. [Probe] *Do you think facts or feelings are more important to consider in deciding whether or not to vaccinate? Why do you say that?*

[RQ2: How are risks understood as **affective facts** in the online vaccine debate (if at all)?]

1. *How would you define vaccine? What are vaccines?*
2. *Do you think there are any **risks** associated with vaccines? Why do you say that?*
 - a. [Probe] *How would you define “risk” in your own words? What comes to mind when I say “risks?”*
3. **[If pro/anti]** *What are the main **facts** about vaccines that have influenced your decision (to vaccinate/not to vaccinate) your child/ren?*

[If undecided] *What are the main **facts** about vaccines that you are weighing in your decision to vaccinate your child/ren or not?*
4. *How do you deal with any conflicting information you find out about vaccines?*

[RQ3: What **affective logics** are used in the online vaccine debate (if any)?]

1. **[If pro/anti]** *If someone asks you why (agree/disagree) with vaccinating your child/ren, what primary reason(s) would you give them?*

[If undecided] *If someone asks you to weigh the advantages and disadvantages of vaccinating your child/ren, what would you say are the primary*

- a. *advantage(s)?*
- b. *disadvantage(s)?*
2. **[If pro/anti]** *Can you tell me about a time you've had to defend your beliefs or opinions about childhood vaccines?*

[RQ4: From what online sources do mothers retrieve vaccine information?]

1. What **websites/sources** do you go to online to get information about vaccines?
 - a. Can you describe the source?
 - i. [Probe:] Is it a government website, community discussion board, etc.?
 - ii. [Probe:] What is the nature of vaccine information? Pro/anti/neutral?
 - iii. [Probe:] How is information presented? Facts/visuals/narratives? Is it easy to navigate/read/use?
 - b. Why did you choose the source?
 - c. How **credible** you consider the source/information? Can you elaborate?
 - i. [Probe:] Do you **trust** the source?
 - d. What did you already know/what was your opinion about vaccinations before you first visited this source?
 - i. Did your opinions of vaccines change after viewing the source?
 - e. How do you **use** this information? {RQ2; 1, 3}
 - i. Do you **share the information you learn** from this source with others? Please elaborate. (With whom? Why or why not?)
2. What is your **least favorite** source for vaccine information online? Why?
 - a. Can you describe it? {RQ2; 1, 3}
 - b. How did you find this site/come to know about this site?
 - c. Can you describe the source/author of this site? (e.g., government/official; pro- or anti-vaccine activist organization?)
 - i. Do you trust the source/author of the site? Why or why not?

Thank you for the information. Is there anything you'd like to add about your beliefs, opinions, or feelings about vaccines or the vaccine debate? Are there any further questions you have for me?

I may have further questions about this topic and/or some of your responses after we finish the interview. If so, would it be alright if I contacted you again?

Thank you for your time. Please feel free to contact me if you have any questions or concerns following this interview, or if you think of anything else you'd like to add.

Appendix B

Sample Overview of Online Sources of Vaccine Information

Source	Description	Title	URL
Anti Vax Wall of Shame (AVWoS) Facebook group	"Pretty simple folks. We all know that AVers tend to say the stupidest shit, this group is a way that we can catalogue it and then mock it into the dust for all of Facebook to see."	Facebook public group page	https://www.facebook.com/groups/AVWOS/
BOUGHT (Jeff Hays Films)	Documentary (vaccine-critical)	"Bought" (film, streamed online)	www.boughtmovie.com
CDC	CDC (pro-vaccine)	"Campaign Materials" page with downloadable immunization campaign materials and resources	http://www.cdc.gov/vaccines/partners/campaigns/index.html
		"Basic and Common Questions: What You Need to Know" page	http://www.cdc.gov/vaccines/vac-gen/default.htm
		"For Parents: Vaccines for Your Children" page	http://www.cdc.gov/vaccines/parents/index.html
		"Ingredients of Vaccines: Fact Sheet" page	http://www.cdc.gov/vaccines/vac-gen/additives.htm
		"For Parents: Vaccine Ingredients" page	http://www.cdc.gov/vaccines/parents/vaccine-decision/ingredients.html
		"Vaccine Safety: Vaccine Recalls" page	http://www.cdc.gov/vaccinesafety/concerns/recalls.html
		"Vaccines Do Not Cause Autism" page	http://www.cdc.gov/vaccinesafety/concerns/autism.html
		"Historical Vaccine Safety Concerns"	http://www.cdc.gov/vaccinesafety/concerns/concerns-history.html

Crunchy Moms	Website with information and community space for crunchy moms	"What is a Crunchy Mom?" page	http://crunchymoms.com/what-is-a-crunchy-mom/
		"Health and Wellness" page	http://crunchymoms.com/category/lifestyle-2/health-wellness/
		"Lifestyle" page	http://crunchymoms.com/category/lifestyle-2/
FiercePharma	Pharmaceutical industry news outlet	"Pfizer closes in on \$1B-plus sales boost for Prevnar 13 vaccine" article/media release	http://www.fiercepharma.com/regulatory/pfizer-closes-on-1b-plus-sales-boost-for-prevnar-13-vaccine
THE GREATER GOOD	Documentary (vaccine-critical)	"The Greater Good" (film streamed online)	www.greatergoodmovie.org
Generation Rescue	Organization offering assistance to families affected by autism; headed by Jenny McCarthy (vaccine-critical)	"About" page	www.generationrescue.org/about
		"Frequently Asked Questions" page	http://www.generationrescue.org/about/faq/
Mercola	Website of Dr. Joseph Mercola; "World's #1 Natural Health Website"; sells natural health products, supplements, etc. (vaccine-critical)	Search results for "Vaccines" on mercola.com	http://search.mercola.com/results.aspx?q=vaccines
		"About Dr. Mercola" page	http://www.mercola.com/forms/background.htm
Mothering Magazine	Online magazine (historically first mother-centered print magazine to challenge vaccines); "The Home for Natural Family Living" (vaccine-critical)	"Should We Allow Coercive Vaccination Discussions?" discussion thread	http://www.mothering.com/forum/47-vaccinations/1559666-should-we-allow-coercive-vaccination-discussions.html
MTHFR.net	Website of Dr. Ben Lynch (offers/markets MTHFR and other genetic testing/screening and associated products); "The leading resource for unbiased, researched information strictly	"Home" page	http://mthfr.net
		"Research" page	http://mthfr.net/mthfr-research/2012/01/27/
		"Articles" page	http://mthfr.net/blog/

	about the MTHFR mutation"	"About Dr. Lynch" page	http://mthfr.net/about/dr-lynch/
Natural News	"The world's top news source on natural health"	"Vaccine news, articles and information" top search results	http://www.naturalnews.com/SearchResults.asp?query=vaccine&pr=NN
National Vaccine Information Center (NVIC)	"National charitable, non-profit educational organization founded in 1982. NVIC launched the vaccine safety and informed consent movement in America in the early 1980's and is the oldest and largest consumer led organization advocating for the institution of vaccine safety and informed consent protections in the public health system."	"About us" page	http://www.nvic.org/about.aspx
		"Frequently Asked Questions" page	http://www.nvic.org/faqs.aspx
		"Informed Consent" page (under "About Us" page)	http://www.nvic.org/informed-consent.aspx
		"Barbara Loe Fisher Speaks Out" page	http://www.nvic.org/barbaraspeakout.aspx
New York Times	New York Times online edition	"Rober DeNiro Defends Screening of Anti-Vaccine Film at Tribeca Festival" article and comments	http://www.nytimes.com/2016/03/26/health/vaccines-autism-robert-de-niro-tribeca-film-festival-andrew-wakefield-vaxxed.html?_r=0
		"Rich, White and Refusing Vaccinations" post on Well blog and comments	http://well.blogs.nytimes.com/2015/12/24/rich-white-and-refusing-vaccinations/
		"The Price of Prevention: Vaccine Costs Are Soaring" article and comments	http://www.nytimes.com/2014/07/03/health/Vaccine-Costs-Soaring-Paying-Till-It-Hurts.html
Newsweek	Online news magazine edition (pro-vax)	"A Look at Anti-Vaxxers Monstrously Bad Measles Math" online article and comments	http://www.newsweek.com/look-anti-vaxxers-monstrously-bad-measles-math-304078

Office of Medical and Scientific Justice (OMSJ)	"The Office of Medical & Scientific Justice (OMSJ) was a private investigation agency...and a 501(c)(3) public benefit non-profit corporation...Clark Baker was OMSJ's CEO and Principal Investigator...Having conducted thousands of criminal and civil investigations since 1980 with the LAPD and as a licensed investigator, Mr. Baker founded OMSJ in 2009 after witnessing the reluctance of government agencies and research centers to investigate allegations related to medical and scientific corruption (also known as JUNK SCIENCE). "	"Home" page	http://www.omsj.org
		"About" page	http://www.omsj.org/about
Research And Markets	Marketing Research and consumer/news/information outlets	"Global Human Vaccine Market 2016-2020 with GlaxoSmithKline, Merck, Pfizer, Sanofi Dominating" press release	http://www.researchandmarkets.com/research/gb4zs4/global_human
Science-Based Medicine	Evidence-based-science-oriented blog (pro-vaccine)	"Dubious MTHFR genetic mutation testing" blog post and comments	https://www.sciencebasedmedicine.org/dubious-mthfr-genetic-mutation-testing/
Skeptical Raptor	Blog dedicated to debunking myths (e.g., ant-vax claims) using evidence-based science and research and logic	"Argument by Vaccine Package Inserts – Debunking Myths" post	http://www.skepticalraptor.com/skepticalraptorblog.php/vaccine-package-inserts-debunking-myths/
Dr. Tenpenny	Website of Dr. Sherri Tenpenny (vaccine-critical)	"Home" page/"Exposing the Truth about Vaccines"	http://drtenpenny.com

The Refusers	Band and activists (vaccine-critical)	"If Your Doctor Insists That Vaccines Are Safe, Then Have Them Sign This Form" (downloadable document with list of vaccine ingredients and risks)	http://therefusers.com/refusers-newsroom/if-your-doctor-insists-that-vaccines-are-safe-then-have-them-sign-this-form-dr-dave-mihalovic/#.Vw72WWOyUmc
The Atlantic	Online magazine edition	"Vaccines are Profitable, So What?" online article and comments	http://www.theatlantic.com/business/archive/2015/02/vaccines-are-profitable-so-what/385214/
Vaccine Adverse Event Reporting System (VAERS)	"National vaccine safety surveillance program co-sponsored by the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA). VAERS is a post-marketing safety surveillance program, collecting information about adverse events (possible side effects) that occur after the administration of vaccines licensed for use in the United States."	"Home" page	https://vaers.hhs.gov/index
		"VAERS data" page	https://vaers.hhs.gov/data/index
		"CDC VAERS WONDER" entry page	http://wonder.cdc.gov/vaers.html
		"CDC VAERS WONDER" database search page	http://wonder.cdc.gov/controller/datarequest/D8
		"CDC VAERS WONDER" FAQ page	http://wonder.cdc.gov/wonder/help/faq.html
Vactruth	Pro-choice/vaccine-critical website for parents (vaccine-critical)	"List of Human Vaccine Inserts" available for download	https://vactruth.com/vaccine-inserts-human/
What to Expect	Maternity and parenting website	"Vaccination Schedules" post	http://www.whattoexpect.com/first-year/ask-heidi/child-vaccination-schedules.aspx?pos=1&xid=nl_YourDailyNewsletterfromWhattoExpect_20160311

Appendix C

Detailed Descriptions of Interview Participants and Vaccine Views

In the below list of participants and detailed descriptions, I employed the following markers, terms, and devices:

- SAHM: Stay-at-home mother
- Vaccine-critical: Generally does not believe in safety/efficacy/necessity of vaccines (may be anti-vaccine, pro-parent choice, other, or not specifically affiliated with one position on vaccines)
- Vaccine-positive: Generally believes vaccine benefits outweigh risks (may be pro-vaccine, pro-parent choice, other, or not specifically affiliated with one position on vaccines)
- In quotation marks: Direct quotes from participant interviews
- No quotation marks: Excerpts or paraphrases from my own field notes that I recorded as memos immediately following each interview

Identity Categories in the Vaccine Debate

One participant, Sally, described various positions in the debate, a guide to the vaccine debate and identify categories I found useful in my own analysis:

- “I think the difference between anti-vaccine and pro-choice is that for anti-vaccine, vaccines are just bad... but pro-choice I think is... it can be parents on any... both side of the debate, be it they don’t vaccinate at all, they choose and delay vaccine, or they fully vaccinate but they believe that it is up to the parent to make that decision. So, it doesn’t matter if they believe in vaccines for their family or some vaccines or no vaccines. They can have... they can have their research under their belt and make

the decision that they've made but they can still understand and respect the choice that another family makes, which if you find the staunch pro-vaccine and the staunch anti-vaccine, they don't believe that. And I don't know, I feel like pro-vaccine are a lot more brash than anti-vaccine but I can't really substantiate that with anything other than, you know, personal experience."

Table C1

Detailed Descriptions of Interview Participants and Vaccine Views

Name	Description/Vaccine Positions
Carley (vaccine-critical)	<ul style="list-style-type: none"> <li>• "I just don't feel comfortable injecting these chemicals into my baby anymore. Just not going to do it. " <li>• "That's where I stand with that. I got my 4-year old vaccinated, he wasn't the same after it, and he was weird <i>right</i> after. That's all. " <li>• "We don't like people who are pro-choice on circumcision, but we're pro-parents'-choice on vax." <li>• "It's [vaccination] nothing I'm willing to lose a friendship over. However, circumcision is." <li>• SAHM, at least one vaccine-injured child (SPD), active in anti-circumcision movement online, and crunchy mom; completed some of a bachelor's degree in comm; married to a "much older" man with military background and very pro-vaccine. <li>• "Crunchy mom." <li>• Four children under 6 years.

- Aubrey
(vaccine-
critical)
- “But the link between autism. It's real it's real it's been proven.”
 - “Vaccines are extremely dangerous.”
 - “55 doses by 5 [years old] is insanity. I don't see how people don't believe 55 by 5 is not insanity.”
 - “There are aborted fetal cell lines I them. That's cannibalism. That's against God.”
 - SAHM; active in online anti-vaccine debate and movement (has independently or co-created website, blog, Facebook group, and a nonprofit organization, all focused on or associated with vaccine-critical views).
 - “Crunchy mom” with a vaccinated 5-year-old and unvaccinated 6-month-old.
- Carol
(vaccine-
critical)
- “I mean I think the first thing that comes to mind is I think, you know, that parents should be able to decide which vaccines they wanna give their kids, on schedule or not.”
 - “I think when you start trying to be middle of the ground, you just come off as being anti-vax which isn't necessarily true.”
 - “You're injecting your child with chemicals that you don't wanna inject them with to avoid, like, a percentage of a risk that might not even be, you know, relevant in their case.”
 - Works full-time from home for a small government contracting firm; lived in UK with husband and young son.

- Son (2.5 years old) has severe food allergies, making some vaccines contraindicated for him, and significantly influencing Carol’s approach to vaccines and lifestyle (now favors natural and holistic choices and habits).

Eileen
(vaccine-
critical)

- Supports vaccine education and informed vaccine choice for parents; regulation of pharmaceutical marketing.
- Holistic dentist with two children and married to a SAHD who also has an advanced degree in a science or medicine-based education.
- After younger child had adverse reactions to formula and then vaccines (e.g., fevers) as an infant, “I became more holistic in my approach to life.”
- Immunologist diagnosed younger daughter with MTHFR gene mutation and advised further vaccines would likely result in autism; stopped vaccinating.
- Reported older daughter (vaccinated on schedule) experienced VAEs too (e.g., ear problems), but they were only recognized as VAEs in hindsight.
- “Crunchy mom.”

Jill
(vaccine-
critical)

- “I think the schedule starts too early, and I also believe that they do way too many shots in general. As far as too many at one time? In my opinion now it's just too much.”
- Chiropractor and business owner with 8-month old child.

- “They’re just vaccinating for things that I feel like aren't life threatening...it's causing a lot of children to get sick, and can lead to learning disabilities or developmental disability I guess in a nutshell that's how I feel about it.”
- “I think it depends on what's right for your family. I'm all about that. I think if for instance, states are mandating that children get vaccinated, a delayed and selective schedule is best. For our family, we might vaccinate her again for a few things, but not until she's at least one. Probably not until she's two, because children's immune systems, they're still developing.”
- “I feel very strongly that it should be a delayed or selective schedule, or non-vaccinated children. I feel like that's the way it should be. But I don't have a right to judge if someone wants to do anything else.”
- “I've seen a lot of kids be injured via a vaccine...my husband's cousin was vaccine injured. He was a perfectly fine little baby, and then the day after he got his vaccine, he just went downhill and he got so sick. “
- Believes many vaccines on the schedule in the US are pharmaceutical industry- and profit-driven.
- Perceives many vaccine ingredients to be neurotoxins, affecting the nervous system and brain: “formaldehyde, thimerosal. I know mercury has been eliminated from a lot of them but not all, and the pig gelatin, beef gelatin, and then metal agents.”

- Nancy
(vaccine-critical)
- Believes in parental choice and education in vaccine matters.
 - Vaccines today: “I do not think that the benefits outweigh the risks at all in any of them.”
 - Believes Americans are less healthy than ever, which may be attributed to vaccines (and/or GMOs or other causes unknown) and may be intentional on the part of the government and pharmaceutical industry.
 - Son (16 months) is unvaccinated and “has never been sick.”
 - Concerned about risky ingredients e.g., formaldehyde, aluminum, and “somebody else’s DNA” from aborted fetal tissue.
 - “All we're all trying to do is protect our children on the way we know how. Why judge?”
 - Worked as a dental assistant and on a military base before becoming SAHM; currently married to a US Marine.
 - Received a medical exemption from adult vaccines required to start work as a dental assistant, and while her vaccinated coworkers were often sick, “I never ever got sick with anything. So I think that kind of changed my opinion on them. I just felt like it was more about treating the body as a whole, eating healthy, exercising, staying positive.”
 - Had Epstein Barr as a teenager and was treated successfully by a holistic doctor, who is the mother of her best friend and still treats her today.

- Penny
(vaccine-
critical)
- “I believe that food can heal the body. I think you have to believe in yourself. I think sometimes we need intervention. But I think food is a healing, healing gift. And I think ancient Chinese secret are true and real.”
 - “Everybody's chemistry is different. Everybody on the face of the Earth. We don't even have the same fingerprints for Gods sake. Why would our genetic make up for one person be the same for the other person immunization?”
 - “Everybody's chemistry is different. Everybody on the face of the Earth. We don't even have the same fingerprints for Gods sake. Why would our genetic make up for one person be the same for the other person immunization?”
 - “I feel like listening more and seeing patterns from moms instead of just saying: "Immunizations don't cause this [VAE]" is very important.”
 - Has twins with food allergies (e.g., egg) that caused VAEs (and perhaps were catalyzed by vaccines), and one child with eczema that may have been aggravated by vaccines.
 - Grew up with natural, healthy lifestyle family.
 - Was diagnosed with autoimmune condition Guillain-Barré Syndrome (GBS) as an adult (children were 3 and 5 years old), as well as mercury poisoning, causing paralysis. She went to three different doctors before finding one who believed and diagnosed symptoms, which influenced her relative lack of trust in biomedical doctors.

- Sally
(vaccine-
critical)
- “Before I knew the term pro-choice, I think I was anti-vaccine. I guess I am kind of anti-vaccine because I just don’t really believe in them but I’m not gonna tell you what you’re gonna do with your family because it’s your family and you know them better than I do.”
 - “I would like to say no, I don’t believe there’s any good reason or good time to vaccinate kids, at least not on such a heavy schedule but at the same time, I don’t know each individual situation and the kids’ health history and all that. I don’t know. That’s a hard one.”
 - “God gave us an immune system that is perfect and knows what it’s doing.”
 - “I think that a lot of the diseases started declining before the vaccines were ever put into use. Sanitation and clean water and that sort of thing.”
 - “I also think that the pharmaceutical industry is not really out to keep us healthy, they’re out to make money and they do what they have to do to make money and they don’t have any incentive to make the vaccine safe [because of the NCVIA].”
 - “They all have heavy metals and formaldehyde and many of them are... vaccines are developed with a cell line from an aborted fetus. I don’t know that I believe that the vaccines have the actual cell from the aborted fetus in them, I don’t argue that but, the fact that they used an aborted fetus to create the vaccine is another objection I have.”
 - Mainstream media has pro-vaccine bias that leads to over-reporting of VPD “outbreaks” and underreporting of VAEs (e.g., autism).

- “I believe that there are many ties between the media, big pharma, and politicians. I think there’s a lot of money transferring going on.”
- Sandy
(vaccine-
critical)
- “If you choose for your family to go get your vaccines, I think that’s wonderful and you should have that choice. I also think for people like my family, the reactions that my children have had and I had a lot of situations that should be taken into account, that there’s something in my own subset of genes that somehow was not able to handle what that entails putting in my body and my children’s bodies...”
 - Older son (10 years old at the time of our interview) was diagnosed by specialists as “classically” and “severely autistic” after receiving routine childhood vaccines, though his pediatrician failed to recognize signs (Sandy had the realization that her son might have autism after seeing Jenny McCarthy on TV speak about her own son).
 - Younger son (6 years) experienced developmental delays (e.g., hypotonia, speech delays) due to scar tissue in his brain, the cause of which could not be determined by several doctors. However, it was detected after his 2-month vaccines, which Sandy believes are plausibly linked.
 - Sandy recently experienced her own VAE (in 2015) when getting up to date on her own vaccines, which was required to start her new career in the health information technology field. After receiving several vaccines, she became weak and disoriented. She was treated at a hospital and later released with a note in her medical chart that she was experiencing a

vaccine reaction. Sandy reported: “The next month and a half was probably the most painful month of my life. I couldn’t move, or get out of bed without being in pain in my entire body.” Sandy secured her own medical exemption from vaccination after this incident, which she hopes will not pose barriers to entering her career field upon graduating in the spring following our interview, but she has not been able to get medical exemptions for her children (though her family lives in a state with the options of philosophical exemptions that allowed her to opt out of vaccines).

- These separate events motivated intense research on Sandy’s part about vaccines, which led her to conclude that vaccines were harmful to her family.
- Sandy is active in the autism community as well as pro-choice advocacy (e.g., opposing state legislation mandating vaccines).
- “I feel very strongly about parental choice in vaccinations and medical autonomy, control of our own body and very, very opposed to mandatory vaccination, particularly for limitation on participation for education or even career.”
- “Each vaccine has its own risks and benefits and parents should do their due diligence, do their research.”
- “There’s absolutely no role for government to tell us what decisions we need for make for ourselves or for our children.”
- Always felt strongly about choice, but became more critical when

Tabitha
(vaccine-
critical)

doctors pushed her to vaccinate her infant (now 2 years old) against hepatitis B when she had no risk factors for the disease and was very clear about her decision.

- Continued to feel pressure from pediatricians to give vaccines to her child that she was not comfortable giving, and responses to her concerns were condescending. Rather than a relationship in which she and the doctor were “partners” in providing care for her child (where she was the ultimate decision maker), she described the pediatrician as “dictating” what choices she had. Her child now sees a naturopathic more in line with Tabitha’s values.

- | | |
|--------------------|---|
| Ana | • Supports parental choice in vaccination. |
| (vaccine-critical) | • Skeptical about the safety and necessity of certain vaccines (e.g., chickenpox) and favors a selective and delayed schedule. |
| | • Believes natural and holistic lifestyle and diet provide strong immunity in her own child but appreciates varying situations for other families and children that make different vaccine choices. |
| Annabelle | • Supports parents’ choice in vaccines but generally believes vaccine benefits outweigh risks. |
| (vaccine-positive) | • Particularly concerned with how vaccination programs promote the common good and takes seriously the commitment to common good over individualistic vaccine choices. |
| | • Family history of vaccine preventable diseases has influenced her positive views on vaccines. |

- Peggy (vaccine-positive)
- Supports parents' choice in vaccination but strongly believes in the benefits of vaccines in almost all cases.
 - Delayed vaccination for her first child until 1 year at the request of her husband due to some uncertainty about her child's health the first year. That year was also emotionally and physically difficult for Peggy and her husband, and they did not want to make potentially uninformed vaccine decisions under duress:
 - "I agreed to at least hold off and started to research some of it and ended up just becoming, like, passionately pro doing the routine vaccines."
 - Peggy's subsequent research revealed for her both the prominence of anti-vaccine voices (mostly online) as well as her own convictions about the benefits of vaccination.
 - "I think it's important to remember with it too is that everybody's really just trying to do what's best for their kids. So, you know, the side that you're against is not a bunch of raging psychopaths that want everyone to die of measles, you know. Or anyone who's anti-vaccination, like, they shouldn't look at pro-vaccination as, as like, big pharma, like, wanna kill everyone with mercury."
 - Peggy and her husband work in the medical field, and she has a science education background.
 - Actively engages people online in vaccine debates, and respect, openness, and "frankly, just being polite" are important. She is passionate about using her own medical and science backgrounds to

facilitate constructive discussions online:

- “I found myself, like, obsessively debating it online. And one of the main reasons for that is that I felt like I had, I felt like I could find some, some ways of explaining some of the main issues people have and explaining them in a way that somebody who hasn’t done a lot of science studies might be able to grasp.”

Phyllis
(vaccine-
positive)

- Believes the benefits of vaccines outweigh risks based on research she and her wife conducted that was grounded in scientific evidence and literature, as well as their pediatrician’s advice and that of a close doctor friend.
- Understands alternative perspectives and choices of parents in their community who are more vaccine-critical.
- Recently moved from a community that is prominently anti-vaccine or vaccine-critical (Phyllis felt that they were in the minority there as parents who vaccinated on the CDC-recommended schedule).
- Works in higher education in social sciences field (not directly related to vaccines).
- Expressed awareness of issues of power, access, and privilege in the vaccine debate and choices.

Samantha
(vaccine-
positive)

- “I’m pro vaccine but I’m also pro what-parents-wanna-do... I vaccinate my children and I believe that people should be vaccinating their children but I also understand that I think that each parent gets to make their own decision about that. I actually have a lot of space for people

who don't want to.”

- “My opinion of vaccine is that they are effective in wiping out very dangerous diseases and common childhood illnesses from our society, so things like polio... And then there's some child illnesses that people can survive like chicken pox and things like that but are dangerous to a small segment of that population. So, even if you survive it as a child or your child might survive it, you know, other children might not. So, it reduces death from those common illnesses.”
- “As parents, we should be allowed to make decisions we believe are right, right? Like I don't think that it should be forced by law...if you want to home-school your child, you should be able to do that. If you want to raise your child in a certain way, even if it's a way that I don't agree with, I think you should still have the freedom to do that.”
- “I do think that, at a base level, people should be able to educate themselves and make their own decision on things.”
- “We shouldn't be forced by law to do things if it's not something we think is in the best interest of our children. That being said, I do believe that vaccines are the best interest of all children. So... that's... and actually, if you wanted to stop these things, we should be making it so that all adults get their boosters and their vaccines as well.”
- Was a member of an attachment parenting/natural parenting group with many anti-vax members whose vaccine views were different from hers, but: “even though I disagree with them, I saw them as very capable

parents... they weren't making those decisions lightly. There was a lot of thought that went into them and I respect them as parents even though I disagreed with it and wouldn't make that decision for my children. I understood where they were coming from and none of them had the autism debate as their reason for not vaccinating."

- Has a child with a brain injury that is rarely discussed in official or mainstream parenting and medical advice literature, so Samantha often sought input and community from moms in similar situations via online and in-person parenting groups.

Ashley
(vaccine-
positive)

- "No strong opinions on vaccines, but my general opinion is doctors know best, even though that's not *always* true" (because of financial incentives, etc.).
- "There's a lot of research backing vaccines that says the benefits outweigh their risks."
- Has a master's degree and is a licensed specialist in school psychology; now married and is a SAHM who cares for the couple's 2-year-old triplets and 3-year-old son.

Bailey
(vaccine-
positive)

- "I think you should vaccinate your children."
- "Not vaccinating puts kids at risk."
- Works as a speech pathologist, specializing in children with autism and neurological differences, and has two children of her own (3 and 6 years old).

- Cindy
(vaccine-
positive)
- “My husband is a doctor, so it [vaccines] is a pretty hot topic in our house. We’re *very pro-vaccine*.”
 - “When you don’t get vaccinations, you not only put yourself at risk, but any other children or people that are either too young or immunocompromised and can’t get vaccines for whatever medical-
VALID medical reason... it’s [not vaccinating] dangerous. It’s going to cause young people and people that can’t get vaccinated, for actual medical reasons, to get sick and die.”
 - Has husband who is a doctor, and both have very strong pro-vaccine and confident in science and scientific evidence for vaccines; have 9-month-old child.
- Eloise
(vaccine-
positive)
- “I’m pro vax. I think they’re really important and vital to baby’s health and also keeping other babies healthy.”
 - Worked in a hospital (non-medical profession) and has had a lot of interactions with and places much trust in the advice of doctors who are pro-vaccine. Now works as a SAHM with a 10-month-old.
 - Has close family members that are more critical about vaccines, but remains strong in her opinion that benefits of vaccines outweigh risks.
- Eve
(vaccine-
positive)
- “Very strongly believe in vaccinating children and adults.”
 - Believes strongly that it is part of individuals’ responsibilities as members of a community to be vaccinated in order to protect common good and most vulnerable populations.

- Business owner (not in medical or health fields) who has done much independent research on vaccines and firmly supports vaccinations.
- Hannah
(vaccine-
positive)
- Generally believes vaccine benefits outweigh risks but has not actively researched the issue aside from seeking instrumental information about the vaccine schedule online.
 - Reported that she does not know as much about vaccines “as I probably should” (and was unaware of exemption and other policies regarding vaccines in her state and more locally; follows directives of her child’s pediatrician, which is based on CDC-recommended vaccines).
 - During one pediatrician visit Hannah asked if her daughter was required to receive all four vaccines at once and was told yes and consented to it despite feeling uncomfortable (assuming that the doctor and office staff “know what they’re doing,” and not wanting to “cause trouble” by asking the question again).
 - Hannah’s child has some food allergies (which have not had bearing on her vaccine choices).
 - A close friend also with a child with allergies is vocal on social media about anti-vaccine views; while Hannah does not engage in vaccine discussions with her friend, she sometimes reads vaccine-related links her friend posts, especially those relevant to her own child’s allergies.
 - Hannah and her husband (who have a 2-year-old daughter) own a business in a small and relatively poor island community where the only pediatrician no longer offers vaccines, the closest doctor who vaccinates

is almost an hour away, and many people in the community have no mode of transportation to get there.

- Hannah perceives poorer members of her community do not follow high standards of hygiene or child medical care, and they cannot afford daycare (which would require vaccinations to be up-to-date). Thus, Hannah believes most in her community are un-vaccinated, at least until entrance to public school requires it.

Jacki
(vaccine-
positive)

- “As a first time mom, I’ve tried, but... I didn’t do a whole bunch [of research]. Just, you know, scanned the internet. As a first time mom of my first child, I just wanted to see what the possibilities could be—the extreme possibilities. Of course, I did not like what I saw, so, stop doing that.”
- “I didn’t really have to make my own [vaccine] decisions, because you know, the government does that for you... the day care, the schools—they make you get your kids their vaccinations before they go there.”
- “I don’t think I had the choice but I think that if I did, I probably still would have vaccinated... Because if I could free them from getting sick, then I, you know, I will. I think it’s only a small percentage that have adverse reactions from vaccines”
- “It’s pretty much either you do and the vaccines can make you sick or you don’t or you get sick from one of those vaccines prevent.”
- Has one child with speech developmental delays who is in therapy; is a SAHM with two young children (one of which is in part-time daycare),

which creates a busy schedule for Jacki and not much time to worry about or research vaccines.

- Developmental issue in one child and treatments and therapy he receives takes priority for Jacki over vaccines and possible risks (and leaves little time to research vaccines).

- Jenna
(vaccine-
positive)
- “I think the risk of not getting vaccinated far outweighs skipping them.”
 - “We eliminated a lot of really bad diseases by vaccination and if we don't vaccinate our kids they can come back. I don't really think the world wants to have another polio outbreak, measles is really, really, really bad. There is a lot of really horrible things that we vaccinate for reason. I just find it irresponsible parents just to not do it.”
 - “I believe in vaccination, we vaccinated both of my kids. The one thing we did do is we requested some of them to be split apart so that there wasn't so much at once. Just to let the body take each thing.”
 - Works in medical and pharmaceutical sales; felt strongly about the suggestions made by many vaccine critics that pharmaceutical companies and their agents/employees are inherently unethical; wants people to remember that they (those associated with pharmaceuticals) “are human too.”
 - Mother to two children (5 and 9 years old); married to husband.

- Kristen
(vaccine-
positive)
- “I am pro-vaccines. Because they prevent diseases.”
 - Nurse in area of pediatrics that exposes her to many situations with parents from all side of the vaccine issue, as well as infants affected by VPDs (and medical education relevant to childhood vaccines).
 - Has a 2-year-old and is married.
- Kristy
(vaccine-
positive)
- “Pro-vaccine.”
 - Trusts her family pediatrician’s advice on vaccinations for her children (1 and 3 years old).
 - Works in a hospital in the non-medical capacity, but interacts with doctors (pro-vaccine) on a regular basis.
- Lauren
(vaccine-
positive)
- “Pro-vaccine,” but does not “have a strong opinion about anti-vaccine.”
 - Reported “limited education on the topic,” because she has not had reason to question vaccines; involvement in vaccine debate largely limited to seeking basic information about vaccine schedule online and observing social media posts by friends about vaccines.
- Lindsey
(vaccine-
positive)
- “Definitely pro-vaccine.”
 - “I think everyone should get vaccinated.”
 - Works as in a legal field that exposes her to young children who have (or have had) VPDs (e.g., whooping cough).
 - Has a close (pro-vaccine) relative who works in a medical field close to the childhood vaccine issue.
 - Mother of 2-year-old daughter and married to husband.

- Lisa
(vaccine-
positive)
- “I think vaccines should 100% be mandatory for school attendance, and this is not just me but this is, you know, scientific publications say they are one of the greatest health achievements in our country of the 20th century by far. I think that they have saved many lives and I think they're incredibly important.”
 - “I think that the science is very clear and settled as to their efficacy and their safety.”
 - Has family history of VPDs, which were described to her as severe and traumatic, influencing her pro-vaccine stance.
 - Lives nearby and was in the immediate area of a recent outbreak; had an infant at the time who was too young to be vaccinated for the VPD, putting him at considerable risk and prompting the family to take relatively drastic safety measures that were disruptive to their normal lives: “it was a very scary time.”
 - Works as an attorney (in an area unrelated to childhood vaccines), mother to 1- and 3-year-old children, and married to husband.
 - Was/is active in advocacy for stricter legislative policy mandating vaccines for school attendance in her state (along with many community groups and events involved in vaccine advocacy and debate).
- Lucy
(vaccine-
positive)
- “Pro-vaccine” but not very active in research or discussion on the issue; trusts pediatrician’s CDC-based vaccine recommendations foremost for her 2-year old daughter.
 - “Basically I feel that they're really important. I don't think that we

would have them if they weren't.”

- Extent of involvement in vaccine debates online includes occasionally observing discussion on social media and seeking basic schedule information online.
- More concerned about her daughter being potentially exposed to unvaccinated children, because “those are the kids who get sick and spread disease.”

Appendix D

Codebook: One-on-one Qualitative Interviews and Online Vaccine Discussions

Table D1

Themes, Categories, and Codes: "Maternal Thinking"

Maternal Thinking		
Category	Codes/subcodes	Examples/explanations/comments/notes
Vax knowledge	VAEs/vax injuries: Allergies, asthma, ear infection, respiratory, SIDS, sensory processing disorder, fever, seizure, death, encephalitis, Autism; Personal vax injury story; Pro-vaccine perceptions of VAEs	"my son had a vaccine reaction, a 103 degree fever, so we were lucky that it was not that serious" "to me her seizures were completely related to the vaccines" "MMR supposedly causes autism"; "we've all heard the popular association of vaccines and autism, like from Jenny McCarthy"
	Defining vax: (includes responses to question: "How would you define or describe a vaccine?")	"What a vaccine is? It's a developed, a manufactured injection to prevent diseases." "I mean, isn't it, I don't know. Well I'm probably gonna sound dumb, but that's ok (lol). Isn't it where they give, like, a little bit of the virus, like, to build immunity to the virus?" "it's causing a lot of children to get sick, and can lead to learning disabilities or developmental disability I guess in a nutshell that's how I feel about it."
	Safety: dangerous; unhealthy; contaminate body; pollution; harmful ingredients	"most people that don't vaccinate feel that they are not safe and they are worried that their child is going to have an allergic reaction or a seizure" "did you hear about the DTaP vaccine going around that's killing babies?" "'This infant at three days old, let me shoot him up with whooping cough.' Can he handle it? No he can't."
	Thoughts on VPDs: risky/not serious; personal experience/story	"measles was not a big deal, it was something that you just got through in childhood" "I got chicken pox as a child, I would rather my child had chicken pox, every single friend of mine had chicken pox, nobody had any type of complication behind chicken pox"

Maternal Thinking		
Category	Codes/subcodes	Examples/explanations/comments/notes
Vax knowledge (cont'd)	Ingredients: "Fetal"; Foreign blood/DNA; Formaldehyde; Thimerosal ; Mercury; Aluminum	" I just don't feel comfortable injecting these chemicals into my baby anymore." "I think those would be the top three that would be most risky vaccines, but you know they all have heavy metals and formaldehyde and many of them are... vaccines are developed with a cell line from an aborted fetus." "how can I explain ethyl mercury versus methyl mercury to somebody."
	Vaccine risks: Comparing risks among vaccines; weighing risks of vax versus risks of no vax	" I feel very differently about the flu shots and the HPV vaccination and even chicken pox vaccination, than I do about meningitis, you know, perhaps polio, so my views are based on the fact that each vaccine has its own risks and benefits" "So, first thing when I look at the seriousness of the disease, so for example, polio or meningitis, I would consider more seriously than chickenpox."
	Research activity: (a) Going to multiple sources; (b) more than "normal" amount of time researching, "obsessing," "going crazy," "couldn't sleep," therapy;	"I was talking to more and more people about him. Different doctors. And I worked with several doctors at a veterinary hospital— I know it's animals, but still..." " I was staying up until 3 or 4am, getting up at 6am—I was mess" " It was me staying up all night long reading and reading and reading as much that I could. It was talking to other mom friends "
Personal story	VPD story, VAE story, testimony	"My in-laws have had mumps and they talk about how awful it was" "I was at Disneyworld with my three month old when the measles outbreak happened..."
Mom knowledges	crunchy lifestyle; anecdotes as evidence	"There's so much that science hasn't studied, hasn't answered. So I look at scientific studies, but then I go to my network of moms to ask for their stories and resources"

Maternal Thinking		
Category	Codes/subcodes	Examples/explanations/comments/notes
Mom groups/ community	Online, natural, crunchy, moms with kids with autism, etc	"I'm in one group that's called crunchy skeptics. They are, like, pro-GMO, pro-vaccine but probably wearing and breastfeeding and all that" "My connection with all of my holistic network of moms has brought me to believe that the FDA is not even close to credible anymore."
	Supportive, sharing advice, friendship and companionship, similar values, sharing vax info	"I wasn't in all the Facebook groups I am now that say, 'watch this, read this, check this out'" "I met a lot of moms with similar experiences and it was like a lightbulb."
Maternal common ground/ shared experiences	(dis)respect others; (don't) understand others; empathy in motherhood; "all want to protect our kids," "trying to do what's best"	"even though I disagree with them, I saw them as very capable parents. They aren't making these decisions lightly. There was a lot of thought that went into them. I respect of them as parents " "I don't question vax, but I'm sure if MY daughter had a seizure like some of the other moms I've heard of, I probably WOULD question... So I can see why some parents don't vaccinate." "While I don't agree with their views, I can understand why they would that that way. In the end they're trying to protect their children."
Children	Individual child info (e.g., health issues); role as mom (e.g., protect kids)	"My second daughter, she lost oxygen when she was being born and had brain damage and I started really worrying just because of my experience with her birth" "Warrior mom;" "vaccines aren't for MY child because ___" "I never had any real reason to questioning vaccines prior to having a child and getting this bizarre allergy test result back"
Protective	"want what's best for kids" "protect my child"/"protect our children" impulse to protect children (from vax, from VAEs, from VPDS, from chemicals, etc.)	"We're all just trying to protect our kids, keep them healthy" "we all are just doing what we think is right for our families."

Maternal Thinking		
Category	Codes/subcodes	Examples/explanations/comments/notes
Intuition	Instinct/intuition/"mother knows best"/gut feeling/"always felt"	" if you have reason to believe that something's gonna harm your child, or not be good for your child, I think you should listen to that" "I think mother's intuition is real, but I don't think it's necessarily better than science on the vaccine question."
Self-reflexive/critical	Conflicted/self doubt: questioning choices; trying to reconcile contradictory choices/statements; justifying choices Regret: expressing regret for prior vax choice, "I didn't know better," "I wish I hadn't..."	" I see that the majority of people are vaccinating but I think I'd change my mind if most weren't." " if I had a magic wand, I'd make everyone get the vaccine but I feel like you can't force your feeling about it onto other people"... "So I gave in and let them give me the flu shot when I was pregnant. I wish I hadn't, but..." "I mean, we vaccinated our first daughter... We didn't know better then."
Personal vax experiences	bad vax experience; family didn't vax; family did vax	" based on my experience at twelve with the MMR and just not on my... not really on my list of things to do "
Family	Family influences on vax choices: childhood, upbringing, parents, in-laws, extended family	"I've always believed in vaccines and public health and never thought to question it until my son has food allergy, he has asthma, he went to the hospital three times last years" "my husband, his dad is a doctor, his mom is a nurse, his sister is a doctor so they're all very, like, allopathic medicine."
Partner /spouse	Interactions/ relationship with partner re: vax choice; partner agrees; partner disagrees; source of tension; supportive; uninterested tension about vax choice; supportive/agree about vax choice; mom spending more or less time than partner researching/making vax choice; partners changing minds about vax (or not)	"but we have a wonderful relationship and he really trusts me, and when I told him, this is what my concerns are, I don't know that we should do this, he listened." " He had to test me while we were at the two months well check. That did not end very well I took my ring off, threw it at him, and left crying" "My husband, he hasn't done research at all. If he had he did very little and he doesn't talk to me about it. I've said him so many things like: 'I'm not ready yet.'" "that, is that very, very stressful in their marriage."

Table D2

Themes, Categories, & Codes: "Science and Knowledge"

Science & Knowledge		
Category	Codes/subcodes	Examples/explanations/comments/notes
Vax science good;	prevent disease ("they work"); rigorously tested for safety; science supports vaccines; "greatest achievement of modern medicine"	"they are effective in wiping out, like, very dangerous diseases" "To make a vaccine takes SO many years of testing and, you know, factual data that, once it becomes a vaccine, it's pretty... it's pretty proven." "the science is very clear and settled as to their efficacy and their safety..."
	Vax science bad diseases declined before vax; vax not effective, safe, necessary (science doesn't back up vax)	"Normally they were vaccinated, we found out later that they were, but they still got it [VPD] anyway." "there hasn't been a case of polio that I have seen last 16 years" "you can't tell me efficacy rate of the flu vaccine for this year. No one knows until after the flu season is over. "
Position on science	"pro-science," "anti-science," (dis)trust science/scientists; biased; incomplete (gaps in) research; science good; science bad; science evil; citing stats/research	"Science is the ONLY true form of knowledge" "it's science so follow the line and do what you are told. " "All science is evil. I think don't trust science. I am anti-science." "Mother's intuition is definitely a THING, but it's not a REPLACEMENT for ACTUAL SCIENCE. "
Conspiracy in science	pharma (can't sue); pedi; govt; financial ("bought")	"I believe that there are many ties between the media, big pharma, and politicians. I think there's a lot of money transferring going on" "pharmaceutical industry is not really out to keep us healthy, they're out to make money" "vaccine manufacturers cannot be sued and they're not liable for any vaccine reaction, so they have no incentive to create safe vaccine. "
Not enough research	gaps; no studies comparing _____ (e.g., vaxxed vs unvaxxed re: autism); constraints to studying vax in vulnerable populations (e.g., fetuses); no long-term studies about ____; censored	"I can get so many different reactions and there's more than we even know about." "that kind of research is not found on PubMed, that makes it very difficult to trust that Pubmed is as comprehensive as it should be" "Because how many kids do you see with autism that happen to have immunization shots? How, what's the research on that"

Science & Knowledge		
Category	Codes/subcodes	Examples/explanations/comments/notes
Medical community	trust/distrust in medical community (ethics, knowledge, motives): Practitioners, mainstream medicine, alternative medicine	Moms' perceptions, interactions, relationships, (dis)trust re: Mainstream pedis, emergency, nurses, allergist, specialists, etc.; "Alternative" homeopaths, naturopaths, chiropractors, holistic doctors, etc. "I trust my doctor. I don't think he would—after 30 plus years of practice—would lead me astray" "The pediatricians are not giving me any answers"
Objectivity	should be objective; no room for emotion; don't rely on instincts	"shut off news stream. Like, just turn it off and, like, think about it objectively." "I HOPE emotions don't play a part in people's decisions to vaccinate or not. This should be a rational decision, there's science behind it."
Nature of vaccine info available	Too much info	"This is the age of information. I feel like I'm inundated." "right now I feel so overwhelmed with what you read, what you hear and no one has an answer, but everybody thinks they do."
	Misunderstood info "they don't understand"/technical info/language	"it's usually found in a non-credible source or it's something that is like misinterpreted, not read properly"
	Biased info	"science is largely funded by people who benefit from the results. So we are not getting a lot of info or data" "pro-vaccine sites will interpret it to be a pro-vaccine and then anti-vaccine sites or pro-choice sites will interpret it to be pro-choice"
	Accessibility inaccessible language; physically inaccessible/not available	"you're speaking different languages" "Not in a sense where I think we should deny people access but I just think that, like, scientific journalism should, should be that, should be so much better. " "I don't trust myself to interpret all of the scientific data in articles and studies"
	Credibility assessment of credibility of sources/info; sources/info credible or not credible	"I kind of take the grain and salt, some of those green websites" " Basically if I'm repeating any information, I use the CDC.gov's information. I don't ever repeat anything that's not of that website because I feel like everybody knows that that's legit website. "

Science & Knowledge		
Category	Codes/subcodes	Examples/explanations/comments/notes
Sources of vaccine info available	"Official/expert" sources (orgs): CDC/VIS/VAERS/Insertrts; WHO; Mayo; NIH; FDA	"Basically if I'm repeating any information, I use the CDC.gov's information. I don't ever repeat anything that's not of that website because I feel like everybody knows that that's legit website." "Mayo Clinic, CDC, WHO... those would be my main trusted sources"
	Alternative: "Alternative" media/sources; Wakefield; Sears ; Autism Speaks; "Bought"; NVIC; "green"/natural/natural news.com	"Naturalnews.com is a good blog for vax info" "If you haven't seen the documentary 'Bought,' you really need to if you're writing a dissertation about this." "NVIC has a lot of resources. There's a vaccine safety calculator there that I've used"
	Online sources of knowledge: PubMed; social media; FB; Blogs; "green"/crunchy/naturalnews.com; mercola.com, NVIC.org, Vaxtruths.com	"Alternative medicine blogs are good to look at for another perspective..." "I look for articles on PubMed a lot when I'm looking for scientific data" "I get a lot of links to resources on my FB groups"
	Pharma: credible source; regulated; tests vax; vax not profitable not credible source; funds own research; out for profit	"Pharma funds research that tests its own products. They're not in it for our health. They're in it for profit." "Pharmaceutical companies are all about money. They use marketing research to put out propaganda because our government allows them to advertise here." "Pharma isn't profiting off vaccines. That's not logical. Their Nancygs go through extensive testing"
Uncertainty	Ambiguous info, facts, risks; can't know risks	"We don't even know the long-term effects of these vaccines" "Why aren't there studies comparing vaccinated to unvaccinated populations? I need to know these things!"

Table D3

Themes, Categories, & Codes: "Individual versus Greater Good"

Invidiual versus Greater Good		
Category	Codes/subcodes	Examples/explanations/comments/notes
Protective	"want what's best for kids" "protect my child"/"protect our children"	"We have to remember, we all are just doing what we think is righth for our families." "We're all just trying to protect our kids, keep them healthy"
Libertarian	gov't can't force vax	"absolutely no role for government or any other power to tell us what decisions to make for our children"
Not for everyone	"i know my body/baby best"/every body different/not for everyone; individual choice to NOT vax	"Everybody's chemistry is different." "They're giving everybody the flue shot... not everybody's appropriate for the flu shot. In fact a lot of people aren't appropriate for vaccines."
Civic duty	for good of the community (protect those who can't get vax); should be required for school entry/public services	"Because herd immunity is not a thing if not enough people are getting vaccinated." "When you don't get vaccinations, you not only put yourself at risk, but any other children or people that are either too young or immunocompromised and can't get vaccines"
Anti-vax arguments	autism; choice/liberty; conspiracy; "survivor bias/invisible"; interferes with immune system; "born perfect"; VAE/anecdote; as perceived by pro-vax	"I don't think that we need to see a resurgence of those diseases just because— under the guise of parental choice"
Positive perception of other	"all want to protect our kids," "trying to do what's best"	"People need to realize that everybody created their own kid themselves and they should take into consideration that they're doing what they think is best. And all we're all trying to do is protect our children on the way we know how."
Pro-choice/pro-vax	"pro-choice" + pro-vax	if I had a magic wand, I'd make everyone get the vaccine but I feel like you can't force your feeling about it onto other people but I did feel a lot of frustration that I might have decided not to..."
Redundant risk	No safe choice; risk of stigma; risking community	"You're not just putting your own kids at risk—you're putting society at risk"

Table D4

Themes, Categories, & Codes: "Fear"

Fear		
Category	Codes/subcodes	Examples/explanations/comments/notes
VPDs	Outbreaks; Personal experience; "Invisible"; How risky is it?; Measles ; Chickenpox	"I think that if people saw what these diseases can do, they'd be more likely to get their vaccines, but because vaccines do their job, we don't see... We don't see these diseases." "They keep coming up with all these vaccines against things that are just inconveniences. They're not life-threatening diseases in most cases"
Unsafe	dangerous; unhealthy; contaminate body; pollution; harmful ingredients	"most people that don't vaccinate feel that they are not safe and they are worried that their child is going to have an allergic reaction or a seizure" "did you hear about the DTaP vaccine going around that's killing babies?" "This infant at three days old, let me shoot him up with whooping cough.' Can he handle it? No he can't."
Immunity/spreading disease	herd immunity, shedding, un-vaxxed immunity, vaxxed immunity	"I heard of vaccine shedding— if you get a virus injected into you, you're spreading the virus all over the place"
Affective logics of fear	"What if"/worst case scenario; Future threat/threat; immunity; give them an inch	" I don't know, as a parent, you're always worried about "what if," right? Like, and the worst case scenarios and I guess with vaccines, what comes up, because it seems so invasive is the worst case scenario like, what if this doesn't end up as being good for my child, right?" "So, like looking back, like it's all fine but at the time, especially when she was like a month or two old, I had no idea what our future held, right?"
Fear of VPD/VAE/vax	"scared," "afraid," "terrified/terrifying," dread, fear	"measles outbreaks—MEASLES. That's terrifying!" "SIDS, autism– those things scare the crap out of me"
Regret	expressing regret for prior vax choice, "I didn't know better," "I wish I hadn't..."	"So I gave in and let them give me the flu shot when I was pregnant. I wish I hadn't, but..." "I mean, we vaccinated our first daughter... We didn't know better then."

Fear		
Category	Codes/subcodes	Examples/explanations/comments/notes
Pain/ needles	Injection/pollution; baby hurting; "jab;" "poke"	"Needles the crap out of me." "I didn't want her to, you know, be held down and you know, stuck with needles and you know, she has this a hundred percent trusting mind-set with her parents and then, you know, we take her in and this is really traumatic. Somebody assaults her little sides with needles"
Fearful language	"Tiny baby"; "Heartbroken"; "Jarred"; "Vulnerable"	"when I look at my kids, you know, especially my son, who's so like, teeny-tiny then, and think about him getting a disease that he is just not strong enough to fight it off" "back to the whole needle thing, that scares the crap out of me" "I think there's fear on that side too. And fear is the reaction to the vaccines" "Meningitis, like, out of all of them is the most scary to me." "you wait until you have a baby that's crying and you don't want to hear him crying because your heart breaks and it's crushing"
Redundant risk	No safe choice; risk of stigma; risking community	"Because you have doubts, you have your doubts either way. With vaccinating I have doubt and when I doubt I still doubt." "There's risks if you vaccinate, but if you don't vaccinate, there's still risks. Not just your kid catching the disease, but maybe they can't go to school. Maybe other parents won't let my kid play with theirs." "You're not just putting your own kids at risk—you're putting society at risk"
Uncertainty	fear of unkown VAEs/VPDs; can't know risks	"We don't even know the long-term effects of these vaccines" "Why aren't there studies comparing vaccinated to unvaccinated populations? I need to know these things!"

Table D5

Themes, Categories, & Codes: "Bodies"

Bodies		
Category	Codes/subcodes	Examples/explanations/comments/notes
Bodily autonomy	"I know what's righth for my kid"; "doc/gov't can't tell me what to put in my kid's body"	"no doctor, no politician has a right to tell me what to put into my kid's body"
Wellness & nutrition	nutrition/food/diet/GMOs/"gut" (digestive system)	"So [the injected vaccine] bypasses your liver and digestive system that can filter these things out but when you inject it straight into the bloodstream, there's no filter for that" "that doctor actually started helping me through diets and supplements" "it's a known fact that your guts are your immune system, your guts"
Natural /crunchy /holistic	"chemicals" as "toxins," e.g. flame retardant (in shampoo/carpet); organic food; no Nancygs; natural medicine; "hippie"	"I found a crunchy community here, home birth, natural..." "I mean carpet is deadly. And had all these toxins in it." "Her decisions aren't founded in science, um, and I think it's the hippie coming out in her?"
Testing	MTHFR, allergy, genetic testing, pH, heavy metals, detox, cleanse, supplements	"My son has been tested [for MTHFR gene muation]. He is homozygotic, he's got both mutations for both of them. I was tested afterwards."
Immune system/ imunity	herd immunity myth; vax can cause VPD; natural disease boost immunit; shedding	"God gave us an immune system that is perfect" "I'm really hoping he gets natural immunity while he's over there to chicken pox, measles, all that good stuff." "This teeny-tiny baby can't possibly fight off everything that's in the vaccine"
Unsafe vax/pollute bodies	dangerous; unhealthy; contaminate body; pollution; harmful ingredients	"most people that don't vaccinate feel that they are not safe and they are worried that their child is going to have an allergic reaction or a seizure" ""This infant at three days old, let me shoot him up with whooping cough.' Can he handle it? No he can't."
Schedule	too soon/body still developing	" I think the schedule starts too early, and I also believe that they have, they do way too many shots in general."
Not for everyone	"i know my body/baby best"/every body different/not for everyone; individual choice to NOT vax	"Everybody's chemistry is different." "we know our bodies the best" "They're giving everybody the flu shot... not everybody's appropriate for the flu shot."

Table D6

Themes, Categories, & Codes: "Privilege, Access, & Choice"

Privilege, Access, Choice		
Category	Codes/subcodes	Examples/explanations/comments/notes
Exemptions	knowledge of, unaware of, philosophical, medical, religious, unable to get, able to get, opinions about exemptions	" I get concerned for things like, is the site not going to accept my medical exemption?" "[Our pedi] told us to use the philosophical exemption because he doesn't like to give out medical exemptions. It draws attention" "Now diseases are coming back because people are getting exemptions for SUPPOSEDLY medical reasons"
Schedule	Delayed, selective, refuse, elective, aware of, unaware of options, policy; Dr. Sears	"the vaccine schedule has changed big time, you know, since I was a kid. So there were a lot fewer shots at that time." "I was really starting to question things more, and saying, you know, I don't feel comfortable getting the MMR vaccine right now, I wish that they could break it up"
Pro-choice philosophy	"Pro-parents'-choice" "every family should make their own decisions" "pro-vax pro-choice" "anti-vax pro-choice" perceptions/misconceptions of pro-choice, different from anti-vax	"I don't like it but for my family, I am anti vaccine, for everybody else's family, you do your research, you figure out what you believe and examine the risks on both sides and you make an educated decision for your family. So that's pro-choice."
Policy	advocacy; activism for/against policy (formal, in-person, online); policies mandating vax; CA HB-277; awareness/unawareness of policy (e.g., for school enrollment)	"Everyone, whether you pro- or anti- or anything in between, should be able to maintain that position. That's why I like that advocacy organization."

Privilege, Access, Choice		
Category	Codes/subcodes	Examples/explanations/comments/notes
Privilege	<p>assuming all moms have time and access to research; recognizing own privilege; recognizing others' privilege (or lack of); abundant time to research; affordability of healthcare not insured (e.g., naturopaths); SAHMs; homeschooling; economic hardships; literacy/education affecting vax decisions</p>	<p>“time is precious and none of us have any. And how we choose to spend it is truly, I mean, it's truly individual.”</p> <p>"My husband almost killed me when he heard how much the [MTHFR testing] was"</p> <p>"I just don't have money to pay for an exemption; we have other things that are more important, like therapy services for my son"</p> <p>"I'm surprised how young anti-vaccine mothers are...they don't have formal education but still figure it out."</p> <p>"we live in America with very advanced healthcare...I assume everyone takes their kids immediately to the doctor when sick."</p>
Choice (informed/autonomy)	<p>Right to choose; autonomy, liberty re: vax choice; Class, privilege, resources, knowledge affecting vax choice; informed consent informed choice; barriers to vax choice; barriers to vax info</p>	<p>"I think all families should make their own choices but research first. Be informed!"</p> <p>"I have the right to choose what goes into my son's body"</p> <p>"I don't think that we need to see a resurgence of those diseases just because– under the guise of parental choice"</p> <p>"my wife and daughter were on Medicare...institutional barriers.”</p>

Table D7

Themes, Categories, & Codes: “Silence, Shame, & Stigma”

Silence, Shame, Stigma		
Category	Codes/subcodes	Examples/explanations/comments/notes
Incivility	incivility; online attacks; mean people; losing friends; personal attacks	"one woman in our group was being a complete—let me put this nicely—witch about it" "they're very protective over who they let in. We get a lot of trolls" "One guy tagged me in a post about vaccines then all his friends started attacking me for being anti-vaccine. I was in tears" "Three of my good friends from elementary school, we don't talk anymore because they know I don't vax"
Non-confrontation	anxiety about/avoiding confrontation with docs, other moms, family/partner	"I'm not getting involved in that. I got better ways to waste my time" "And we discuss and have debates here and there, but it's nothing I'm willing to lose a friendship over."
Isolation	communicate with like-minded parents; niche mom/online groups	" I don't talk about it much, at all. Unless I know or find out that they have similar views" "I think I mostly discuss vax with family—or I've talked to other mothers who are Pro-vaccine when we hear something in the news or on social media about it [anti-vaccine]."
Silence /dissent	Stigma, backlash, silenced, shame; Anti-vaccine backlash (from moms, docs); shaming (from moms, docs); afraid to ask Qs; blind consent; pressure to conform; censorship	"we are all a product of community and we all want to fit in and be alike so we don't ask questions" "it's part of the cultural commitment, of just not questioning the authority when they say we have to vaccinate" "The tone is: we don't have to answer these questions, it's science so follow the line and do what you are told." "there's this mindset of fear in the medical community that if you question things you may be discredited"
Stigma /backlash	No safe choice; risk of stigma; risking community; shaming (pro-vax, anti-vax); stigma (pro-vax, anti-vax)	"There's risks if you vaccinate, but if you don't vaccinate, there's still risks. Not just your kid catching the disease, but maybe they can't go to school. Maybe other parents won't let my kid play with theirs." "You're not just putting your own kids at risk—you're putting society at risk"

Table D8

Themes, Categories, & Codes: "Affect in Publics"

Affective Publics		
Category	Codes/subcodes	Examples/explanations/comments/notes
"Passion"	Passionate: "hot topic," "I'm passionate about vax,"; militant/"warrior mom"	"Sorry I'm rambling—I'm very passionate about vaccines" "This is a hot topic in our house" "My husband said I turned into warrior mom"
	NOT passionate: (apathetic), "no strong opinion," "haven't thought about it much," "I don't care"	"I mean, I'm pro-vaccine, but I don't get stressed out when other parents have different opinions" "Honestly, I haven't thought about it that much except to look up the schedule for what vaccinations my son needs to start daycare."
Political	advocacy/activism; engaged in debate (online, in-person)	"I was active in the groups that got SB 277 passed" "I always engage people about vaccines if they want to talk about it; I can't help it"
Community	Online, natural, crunchy, moms with kids with autism, etc; Supportive, sharing advice, friendship and companionship, similar values, sharing vax info;	"I'm in one group that's called crunchy skeptics. They are, like, pro-GMO, pro-vaccine but pro-baby wearing and breastfeeding and all that, you know?" "My connection with all of my holistic network of moms has brought me to believe that the FDA is not even close to credible anymore." "I wasn't in all the Facebook groups that I am now that say, "hey watch this," "hey read this," "hey check this out," you know what I mean?" "I met a lot of moms with similar experiences and it was like a lightbulb."

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